Project Summary

Kenya like other emerging and developing markets is experiencing an economic crises - high inflation (with 2.8% decrease in real GDP growth in 2022)- caused by global supply chain disruptions, poor weather, high energy prices, high international food prices and depreciation of the Kenyan shilling Kenya Economic Survey 2023.

UNEP Food Waste Index Report 2021, indicated that **every Kenyan throws away an average of 99 kilograms of food every year, with the country wasting a total of 5.2 tonnes of food every 12 months.** Most of food loss happen post harvest when there is suppliers as well as due to preference of high visually appealing produce. This has negative economic, social, and environmental impact. While cost of living is increasing, food loss reduces income by at least 15% for the smallholder farmers and downstream value chain actors.

TechnoServe through the NutriSave project, **aims to reduce food loss by increasing consumption of highlighly nutritious semi-processed products** specifically focusing on mango juice, tomato paste, and porridge fortified with african leafy vegetables. The project target low-income consumers in urban and peri-urban areas in Nairobi.

This project **does not aim to replace consumption of fresh produce** such as mango, tomato, and african leafy vegetables, but **allows access to other safe, affordable and nutritious supplementary products for consumption**.

Report

UNDERSTANDING NAIROBI'S LOW-INCOME CONSUMER DEMAND FOR FRUITS & VEGETABLES

Study of Low Income Consumers in Nairobi, Kenya. Domestic Demand for Fresh and Semi-Processed Fruits and Vegetable Products at Consumer and Retail Levels

Busara

TechnoServe

Executive Summary Of Findings

Busara has conducted qualitative and quantitative research with low-income consumers and retailers in Nairobi, Kenya to diagnose socio-cultural, behavioural and informational levers and barriers to consumption of semi-processed fruits and vegetables (FV). This research sought to answer the question: ***What are the reasons for consumption of fresh and semi-processed fruits and vegetables in Nairobi, Kenya?***

To this endeavour, we conducted in-depth interviews (IDIs) with 15 consumers and 15 retailers, and surveyed 150 households across 4 different locations in Nairobi. These locations are: Embakasi, Kasarani, Roysambu and Makadara. We found that:

- There are approximately **3.4 million** low income consumers (LIC) in Nairobi. This figure is estimated to be **66%** of the total population in Nairobi based on existing primary and secondary data.
- Low income households in Nairobi earn on average a monthly income of KES. 20,000-70,000 (USD 130-454).
- The median monthly income of low income households is KES. 30,000 (USD 195). **38% of this income is spent on food** of which **nearly half** (48%) goes to fruit and vegetables.
- **FVs are consumed regularly by LICs.** Vegetables are served with staple dishes, while fruits are consumed as a snack or dessert.
- LICs consume semi-processed products as they perceive them to be **nutritious, convenient, tasty and affordable.**
- **Women** are the **principal decision makers** in households on which FV is purchased and consumed.

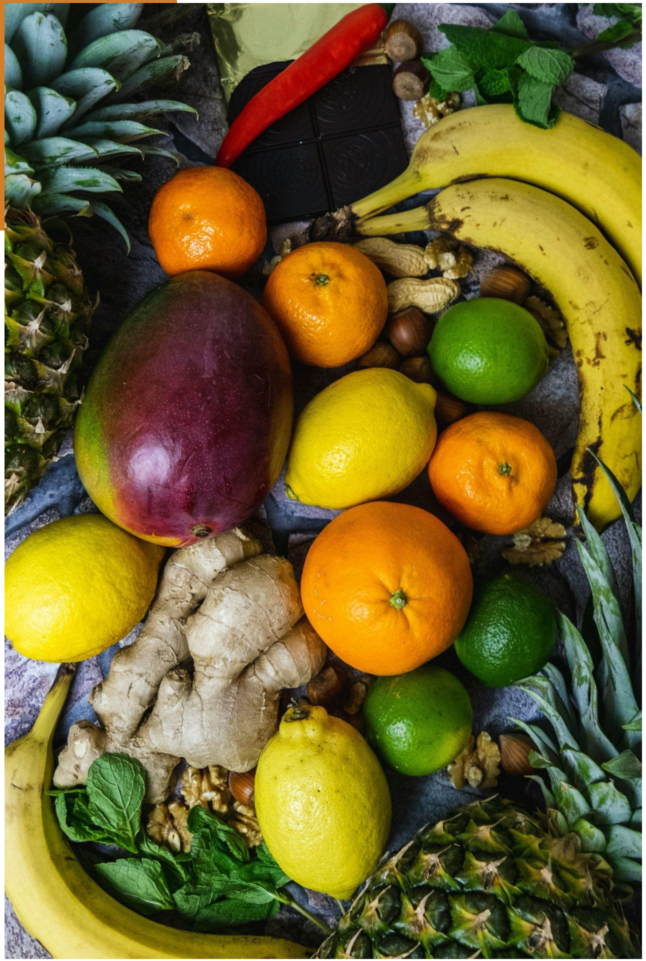
Executive Summary Of Findings Continued

Number of LICs consuming the target products at least once a week: Mango juice: (82%), tomato paste: (63%), plain porridge: (77%). Mango juice is the highest consumed semi-processed product amongst our respondents and tomato paste is the lowest.

- Currently, there is **no fortified porridge with african leafy vegetables** (ALV) in the LIC market. However, self-formulated mixes (*dollopin*) are available at locations such as cereal shops.
- Semi-processed products for LICs should be **packaged in small quantities** to match their current FV expenditure. Specifically for tomato paste, consumers prefer 25g sachets as compared to 50g available in the market. This is mostly due to the perceived short shelf-life of tomato paste post-opening.
- LICs are price sensitive, hence, products should be priced **affordably** within their budget allocation for FV.
- Semi-processed products should be **accessible** for LICs at close-by locations. Some of the main purchasing locations for semi-processed products are: **minimarts, shops/dukas, juice shops, cereal shops (porridge), and kibandas/street vendors.**
- Marketing campaigns should **target women & mothers,** with a focus on **nutritional benefits, time/ease of cooking, affordability and taste.**

Knowledge & Awareness:

- LICs **perceive existing semi-processed products** to be **less nutritious** (with additives and chemicals) than fresh produce.
- Some consumers & retailers believe **cooking ALV with porridge** loses ALVs' nutritional benefits.



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Project Background

Objective of the project and rationale

Project Objective

To understand consumer behaviours and habits in order to ensure low-income consumers have improved access to safe, affordable and nutritious fruits and vegetables in Kenya.

Kenya's Current Economic Status

The Kenya Economic Survey 2023 reported a global real Gross Domestic Product (GDP) growth decline from 6% in 2021 to 3.4% in 2022. The slowed growth was noted in most markets including developed, emerging and developing markets. The main reasons associated with the GDP growth deceleration are:

1. Implementation of more restrictive monetary policies post COVID-19 in most regions
2. Re-emergence of COVID-19 in China
3. Russia-Ukraine War which disrupted supply chain

In Sub-Saharan Africa (SSA) the economy recorded a growth of 3.9% in 2022 compared to a growth of 4.8% in 2021. This was attributed to a **decline in household consumption and private investment resulting from rising global inflation and tightened monetary policies.**

Kenya's economy noted a similar trend as the country's real GDP increased by 4.8% in 2022, as compared to 7.6% in 2021. The Agriculture, Forestry, and Fishing sector contracted by 1.6% in 2022 as compared to 0.4% contraction in 2021. This was caused by drought conditions.

Food Inflation

According to Kenya Economic Report 2023, the food inflation rate had been increasing, with an inflation rate of 15.38% in November 2022 compared to 9.92 in November 2021. Food prices began rising in early 2022 due to:

- Global supply chain disruptions
- Poor weather
- High energy prices
- High international food prices and
- Depreciation of the Kenya shilling

In Kenya, the food and non-alcoholic items consume **32.91% share of the CPI consumption basket** (KNBS, 2020).

Food basket	CPI Weight
Meat, fresh, chilled or frozen	4.3518
Flour of cereals	3.0326
Cereals	2.8709
Bread and bakery products	2.686
Skimmed milk	2.0897
Raw and whole milk	1.7404
Leafy or stem vegetables,fruit bearing vegetable, fresh or chilled, others	3.7509
Vegetable oils	1.4955
Cane and beet sugar	1.4348
Tubers, plantains and cooking bananas	1.1661
Pulses	1.1611
Dates, figs and tropical fruits, citrus fruits, fresh	1.3496
Fish, live, fresh, chilled or frozen	0.7309
Fish, dried, salted, in brine or smoked	0.5854
Eggs	0.5786
Soft drinks	0.4949
Yogurt and similar products	0.4546
Others	2.9362
Total	**32.91**

Food Loss And Food Waste

Food insecurity stems from a third of the food produced for human consumption are being wasted by vendors and consumers globally, according to the Food and Agriculture Organization (FAO).

For all the food that reaches consumers, 40% is discarded. Almost 30% of harvested crops in sub-Saharan Africa goes to waste, which has an implication on food security, nutrition, environment and small-scale farmers' incomes (Farm Africa).

UNEP Food Waste Index Report 2021, indicated that **every Kenyan throws away an average of 99 kilograms of food every year, with the country wasting a total of 5.2 tonnes of food every 12 months.** Most of food loss happen post harvest when there is suppliers as well as due to preference of high visually appealing produce. This has negative economic, social, and environmental impact. While cost of living is increasing, food loss reduces income by at least 15% for the smallholder farmers and downstream value chain actors.

Busara previous work on food waste reported that in Sub-Saharan Africa, there is minimal food waste at the consumption stage and emphasizing the need for targeted efforts earlier in the food supply chain to manage food loss. TechnoServe through the Nutrisave project aims to address this phenomenon.

Fruit And Vegetable Consumption Benchmark

- The World Health Organisation (WHO) recommends 5 serving/portions (3 servings of vegetables and 2 servings of fruits-400g) per day to improve overall health and reduce the risk of certain Non Communicable Diseases (NCDs). 1 serving of FVs is 80g.
- In East Africa, current consumption of Fruits and Vegetables (FV) is below the WHO recommendation.

Country	Average Servings per day		
	Fruits	Vegetables	% below WHO recommendation
Kenya	0.78 (62.4g)	1.31(104.8g)	58%
Ethiopia	0.3 (24g)	0.6 (48g)	82%
Tanzania	0.68 (54.49)	1.01 (80.8g)	66%

Project Rationale

TechnoServe partnered with the Bill and Melinda Gates Foundation and the Foreign Commonwealth and Development Office (FCDO) to lead NutriSave - a three year project that seeks to reduce food loss and waste and ensure low-income consumers have improved access to affordable and nutritious fruits and vegetables.

Through the NutriSave project, TechnoServe aims to **reduce food waste and food loss as well as promote consumption of fruits and vegetables** in urban and peri-urban areas by the low income consumers. The project targets three value chains with highly perishable produce: tomatoes, mangoes, and african leafy greens. The project aims to reduce food loss post harvest by working with food processors to increase the nutritional value of their produce by leveraging both low visually appealing produce as well as during high production seasons. Working with processor will ensure access to semi-processed products i.e. mango juice, tomato paste, and fortified porridge with african leafy vegetables (AFL) for the low income consumers. Further through this project the small holder farmers will get profitable market for their produce.

In this regard, Busara will support Technoserve to **understand consumer behaviours & habits** in order to ensure low-income consumers have **improved access to safe, affordable and nutritious** fruits and vegetables in Kenya.

Deliverables

1	Report 1	A report analyzing Kenya's fruit and vegetable consumption patterns, as well as the preferences and factors that impact purchasing decisions among low-income consumers. Findings will be disaggregated by the fruit or vegetable types named in the NutriSave project scope. This will provide more nuanced insight into how perceptions and preferences may differ by fruit or vegetable.
2	Report 2	A report describing the key characteristics of low-income consumers, including demographic data, consumption and purchasing habits, and geographic distribution. This report will also include a consumer segmentation of low income consumers.
3	Report 3	A report examining the gender lens of fruit and vegetable value chains, including women's involvement and empowerment strategies.
4	Report 4	A report detailing the challenges and opportunities for retailing fresh and semi processed fruits and vegetable products in the Kenyan market, highlighting internal and external factors influencing the industry.

Overarching Research Objectives

Characterization of Low-Income Consumers:

- Define the characteristics of low-income consumers, including their income levels, preferences, and consumption habits. This should include insights into their spending on fruits and vegetables, as well as their expenditure on semi-processed foods. Please provide disaggregated data by gender, age, and other relevant demographics

Geographical Distribution of Low-Income Consumers:

- Determine the residential locations of low-income consumers and quantify their population within both urban and peri-urban areas in Nairobi.

Domestic Demand for Fruits and Vegetables:

- Assess the domestic demand for fruits and vegetables and identify the potential market share that could be supplied with surplus low-grade produce.

Factors Influencing Purchase Decisions:

- Explore the factors influencing the purchase decisions of low-income consumers in relation to fruits and vegetables.

Consumer Typologies and Market Segmentation:

- Develop consumer typologies to gain a deeper understanding of market segmentation. Investigate how gender, income, education, and other relevant characteristics impact the demand for fruits and vegetables.

Research Hypotheses

In line with the research objectives, below are the research hypotheses for this project:

1. **Social norms** influence fruit and vegetable consumption. For example, certain gender norms disproportionately result to women eating more quantities as compared to men.

2. Consumer’s decisions to consume fruits and vegetables are influenced by the following **enablers**:

   a. Affordability
   b. Time taken to cook/consume
   c. Accessibility
   d. Availability
   e. Taste
   f. Quality

1. **Knowledge and awareness** about semi-processed fruits and vegetables, in particular its nutritional value, can increase consumers’ purchasing and consumption of fruits and vegetables.

2. Current **habits** of consumption influence how likely consumers are to purchase and consume semi-processed fruits and vegetables (where, when and why they purchase fresh vs. semi-processed foods).

Project Timeline

Project Kick-off

October 9 -13

October 13-22

Defining a Low Income Consumer, identifying locations for data collection, pre-survey data collection

Literature Review, design of qualitative and quantitative instruments.

October 23-31

November 1 - 7

Training Field Officers, Ground Data collection

Analysis and draft report writing

November 8 - 17

November 20 - 30

Feedback from Nutrisave on draft reports, revision, and submission of reports by Busara

Approach

Data collection and analysis for consumer purchasing behavior

Implementation Overview

1

Align

Initial kick off meetings to know the project teams align on the scope of work and expected deliverables.

Evidence review and literature scan to ground the research.

2

Understand

Uncover purchasing and consumption behaviors of fruits and vegetables among LIC in urban and periurban areas in Nairobi, segmented across different demographics & value chains.

Surveys - 150 HHs (additional pre-survey with 93 HH & follow-up survey with 30 HHs)

IDIs - 15 consumers + 15 Retailers

Survey here | IDI Consumer here

IDI Retailer here

3

Share

Draft report outlining

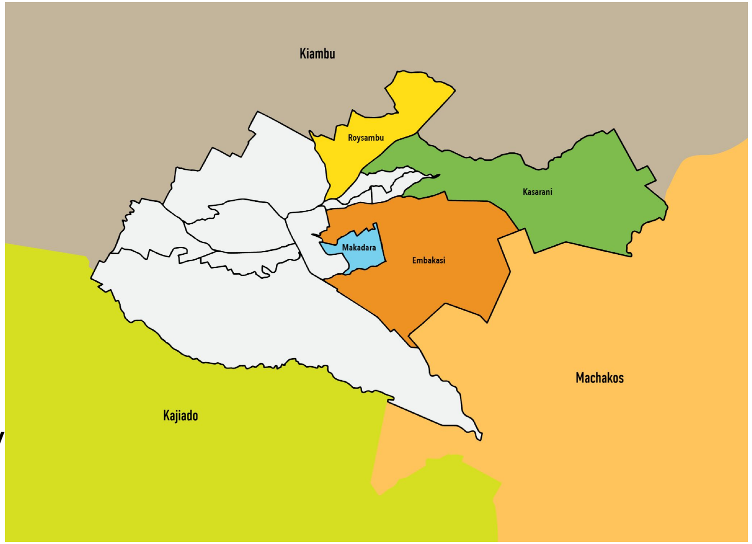
- Fruit and vegetable consumption patterns disaggregated by the three target value chains
- Consumer personas
- Actionable recommendations

Locations

We targeted 4 locations for both the qualitative IDIs and quantitative surveys.

- Embakasi
- Kasarani
- Roysambu
- Makadara

Note: We excluded slum areas which fall within the abov locations



Map of Nairobi with research locations highlighted.

Kiambu, Kajiado and Machakos are peri-urban areas outside Nairobi where this research is applicable.

Research Limitation

- Due to a low sample size our findings should not be interpreted as being representative of the population of Nairobi, Kenya.
- Data is skewed towards self-employed women, as these women were more willing to participate in the study due to their flexible working hours.

Our Target Consumer

Low Income Consumers

Demographic details from qualitative and quantitative respondents
Consumer segmentation across income ranges in Nairobi

Existing Definitions Of Low Income Households

- World Bank
  As of 2023, the World bank defines vulnerable populations in lower-middle-income countries as those living under **USD 3.20/ KES. 148**-(*PPP adjusted) per day.
- Consultative Group to Assist the Poor (CGAP)
  In a study tracking digital inclusion of the poor, CGAP defines low income person as those earning under **USD 5.5** a day in low and middle income countries. CGAP further details LI persons as those earning no more than **KES. 30,000 per month/USD 194.**
- Financial Sector Deepening (FSD)
  FSD conducted a study trailing the financial expenditure of low income household in Kenya, and defined low income households as those living on **above USD 2 but no more than USD 5 per day.**

The existing studies primarily categorize low income households between the lower-middle-income countries poverty line **(USD 3.2)** and middle income countries poverty line **(USD 5.5)**

Defining Low-Income Households In This Study

Assumptions:

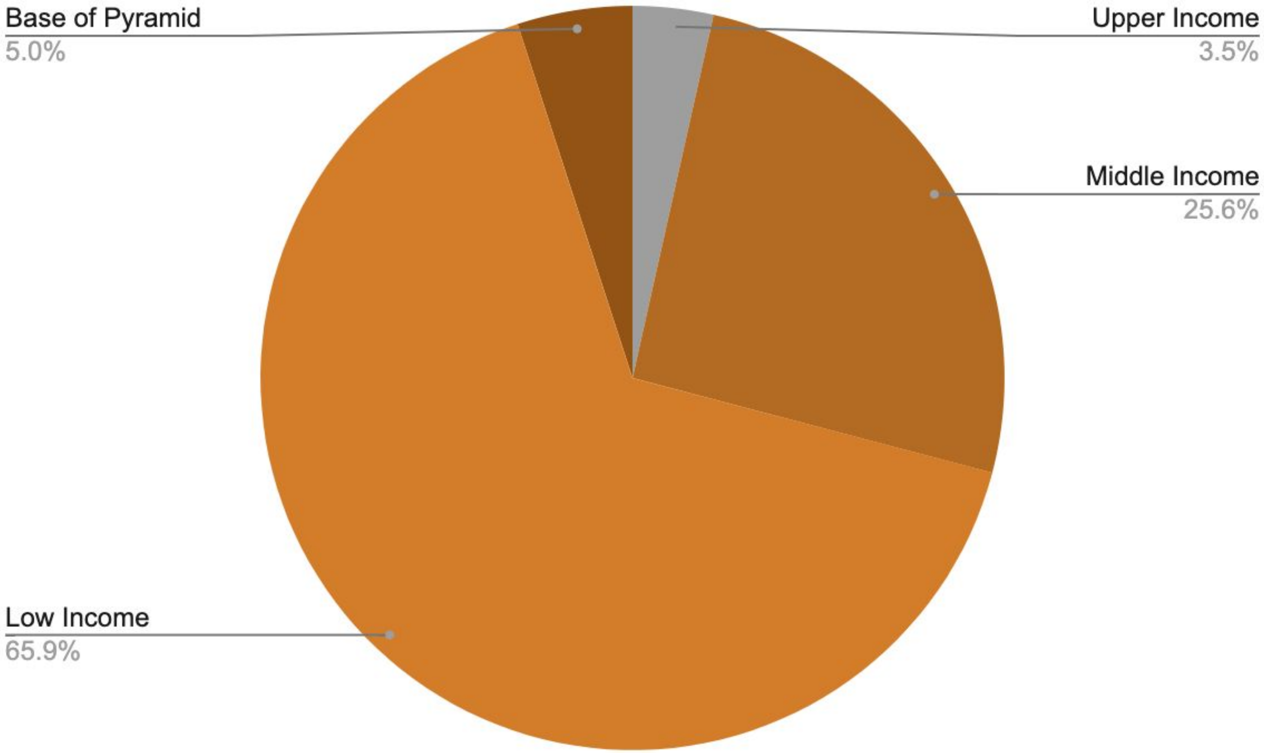
- Based on previous research, this study excluded informal settlements, i.e., those households with minimal disposable income to spare on semi-processed products (such as mango juice, tomato paste and ALV fortified porridge).

Pre-Survey Data Collection:

- We conducted a pre-survey on 93 households split across (Embakasi, Makadara, Roysambu, Kasarani and Dagoretti) to help us define a low income household and our target locations.
- The analysis revealed that respondents from four locations, except Dagoretti, were more likely to consume semi-processed products from our target value chains.
- It further revealed that respondents with an income of at least KES. 20,000 (USD 130) reported spending between KES. 10,000-30,000 (USD 65-195) on food per month.

Therefore, this study **targeted households with an income of at least KES. 20,000** (USD 130) and within Embakasi, Makadara, Roysambu, and Kasarani.

There Are Approximately 3.4 Million (66%) Low Income Consumers In Nairobi



Busara Center For

Setting A Lower Household Income Threshold For LICs

- From our pre-survey analysis, we defined Low-Income Consumer (LIC) households as those with a monthly income of KES. 20,000 (USD 130) and above, based on an in-depth analysis of financial and consumption trends and the KNBS cap for low income households in 2021 (adjusted for inflation).

    - **Food Expenditure:** Over 60% of households with food expenditures between KES. 10,000 (USD 65) to KES. 30,000 (USD 195) belong to household income groups of KES. 20,000 (USD 130) and above. The significant concentration of spending in this income bracket highlights the ability to purchase food products beyond essential items, hence reinforcing the importance of tailoring our products within this LIC threshold.
    - **Semi-processed foods:** 60% of consumers purchasing semi-processed foods like mango juice and tomato paste are from households with an income of KES. 20,000 (USD 130) and above. This trend indicates a substantial market opportunity within this income group for semi-processed food products
    - **Financial Emergency:** 75% of households who rely on savings during financial emergencies come are from households with KES. 20,000 (USD 130) and above, indicating enough income to set aside for savings.

Setting An Upper Household Income Threshold for LICs

Low Income Households In Nairobi Spend Up to KES. 70,599 (USD 458) per month

For this study, we have classified a **low income household** as that with an income (total combined of all incoming-earning members) of between **KES. 20,000 - KES. 71,000 (USD 130-461).**

7 out of 10 households in Nairobi are BoP + low income households.

KNBS Classification of Nairobi Income Groups by Monthly Expenditure

Category	Household Monthly Expenditure (Kshs. Monthly) (*as of 2015)	Household Monthly Expenditure (Kshs. Monthly) (*as of 2022-adjusted for inflation)	Percentage of Households in Nairobi (*as of 2019 Census)
BoP + Low Income	Up to 46,355 (USD 301)	Up to 70,599 (USD 458)	71% (1,068,233)
Middle Income	46,356 - 184,394 (USD 301-1,197)	70,600 - 280,832 (USD 458-1,823)	26% (385,4612)
Upper Income	Greater than 184, 394 USD (1,197)	Greater than 280, 833 (USD 1,823)	4% (53,193)

There Are 3,375,857 Low Income Consumers In Nairobi

As of 2017, **65.9%** of formal workers in Kenya earned an income of between **KES.20,000-KES.50,000** (USD 130- 195) Business Daily,2017.

We use the formal sector income range split because informal sector data is scarce, and has high fluctuations within income ranges.

As seen in the previous slide 1,068,233 household make-up both LIC and Base of the Pyramid (BoP). Working with this assumption, we can get 65.9% of the low income households in Nairobi makeup 992,899 households.

With an average household size of 3.4 (based on our sample), we get an estimated market size of **3,375,857** LIC in Nairobi.

Split of Monthly Salary Category among Formal Sector Workers(*2017)		
Monthly Income (KES)	**Count**	**Percentage**
Less than 20,000 (USD 130)	235,713	9.07%
20,000 - 29,999 (USD 130-188)	964,943	37.1%
30,000 - 50,000 (USD 195 -325)	749,344	28.8%
Above 50,000 (USD 325)	650,000	25%

Top 4 Prime Locations For Identifying LICs

From our pre-survey analysis, over 60% of households in our target locations earn KES. 20,000-50,000 (USD 130-325), showcasing a substantial concentration of our target LIC demographic within these locations. Hence, we have identified the following 4 locations for this research:

- Embakasi
- Kasarani
- Makadara
- Roysambu

These areas not only represent key markets for us but also affirm the relevance of our LIC threshold, as the **majority of households in these prime locations fall within our defined income category.**

Number Of LICs & LIC HHs Across Target Locations

Sample				Population	
Location	Count	Average Household Size	Average Household Income (KES)	Population (*as of 2019)	Households(*as of 2019)
Embakasi	62	3.3	32,320	988,808	347,955
Kasarani	28	4.2	42,556	780,656	271,290
Makadara	46	3.2	30,872	189,536	72, 924
Roysambu	25	3.1	36,333	202,284	**N/A

95% of our sample have household income of between **KES.20,000 - KES.50,000 (USD 130-325)**; consistent with secondary data (Business Daily, 2017).

Suggested Target Locations

We suggest the following locations as the primary target locations for this study:

- Embakasi
- Kasarani
- Makadara
- Roysambu

We further propose targeting the following urban location in Nairobi:

- Dagoretti South
- Ruiru

Along with the following peri-urban areas:

- Ngong
- Kikuyu
- Rongai
- Kitengela
- Kangemi
- Uthiru

These proposed locations are based on Busara's local contextual knowledge and lived experiences. Secondary data classifying income ranges at a granular county level is scarce.

Analysis

Insights from qualitative and quantitative data

Who Are The Respondents?

Survey Respondent Demographics

Age
Majority of the respondents (51%) are youth between the ages of 25-34.

Gender
75% female, 25% male

Location
39% live in Embakasi, 28% Makadara, 17% Kasarani, 15% Roysambu

Education
38% are secondary school educated, 37% TVET/Diploma

Income
Majority of the respondents (95%) have an income between KES 20,000-49,000 (USD 130-318).

Marital status & children
Majority (58%) of the respondents are married and (31%) have 2 children.

No. people in HH*
On average, there are 3.4 people per household for our sample.

Employment
Majority (53%) are self-employed, 34% employed in full-time jobs. 80% are in trade.

Who Are The Respondents?

IDI Respondent Demographics

Age
All are between the ages of 23-38 years with average age of 30 years

Gender
13 females, 2 males, notable skew towards female respondents

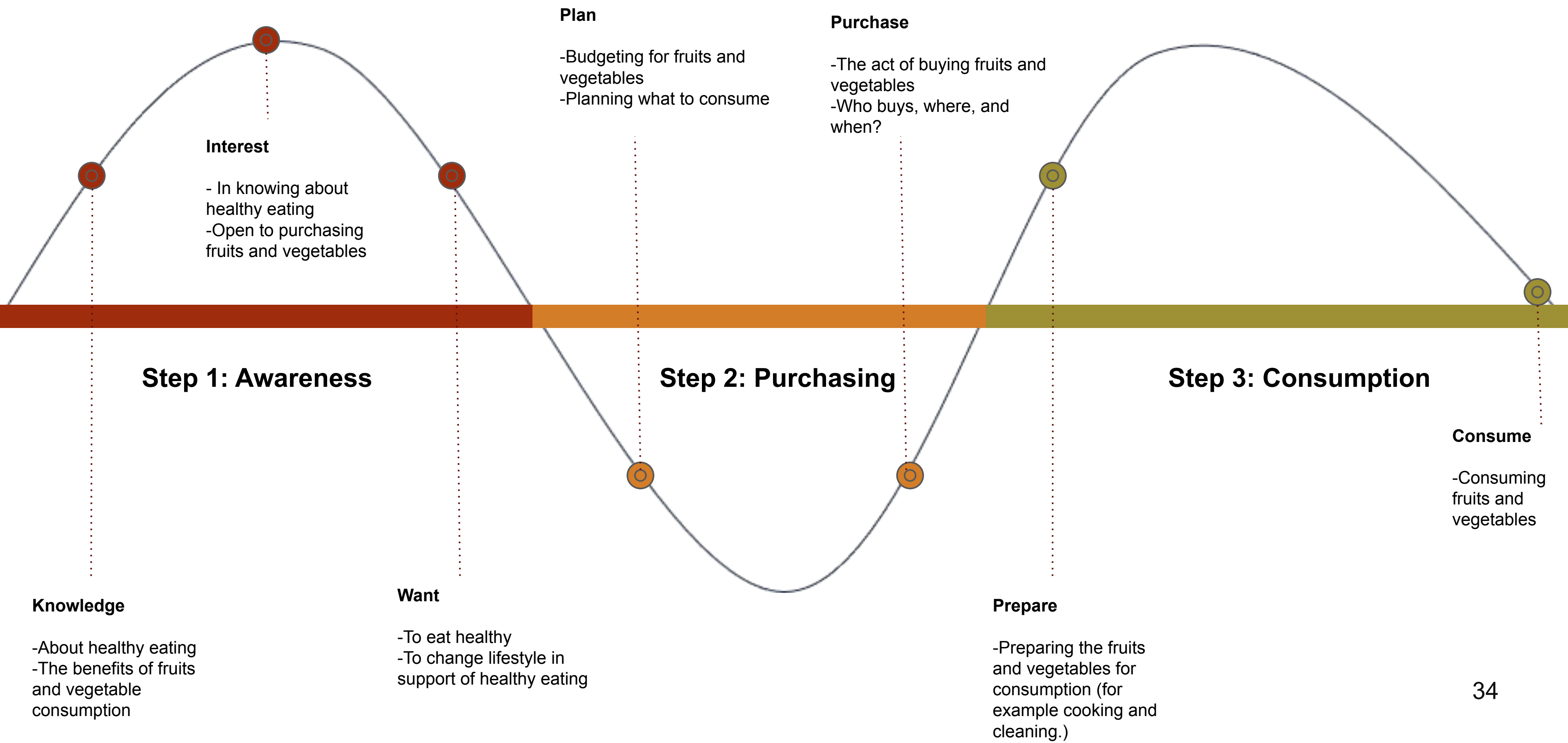
Education
Even split between those who have completed secondary and tertiary level

Income
Majority of the HHs have 2 income earners and average income between KES 20,000 - 60,000 (USD 130 - 390).

Employment
Majority (11/15) have businesses while a few (4/15) are employed

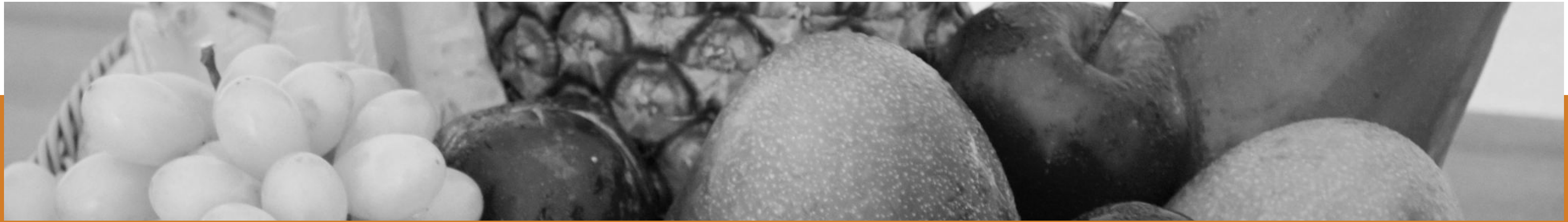
No. people in HH
Average HH size of 5 members

Consumer Journey Map



General Purchasing And Consumption Behaviors

How do consumers budget, purchase and consume FV?



Distribution

100%

Across Fruits & Vegetables

Among surveyed individuals, 100% consume both fruit and vegetable in their diets.

Current Dietary Trends In Nairobi, Kenya

Rising urbanisation has influenced dietary trends in Nairobi. However, common food consumed in a household varies from traditional to fast food (Vila-Real, 2022). Some of these trends are detailed below:

- **Breakfast preferences:**
  - Mandazi, boiled green maize, sweet potatoes, bread, porridge, tea, and cassava highlight a variety of options.
- **Staple food:**
  - Ugali(Corn meal), githeri, and rice/chapati with lentils form the basis on many daily meals in a household.

These are prepared or served with vegetables such as ALV, kales, onion, tomatoes, carrots among others.

- **Traditional dishes with cultural significance:**
  - Foods like nyama choma, pilau, and mukimo hold cultural significance and are often associated with special occasions.
- **Diverse sources of proteins:**
  - Chicken, eggs, beef, fish and goat are commonly consumed in the form of stews, fried, or grilled (for example, nyama choma). These are served with accompaniments such as kachumbari (a fresh tomato and onion salad), ugali, rice or chapatis.
  - Beans and lentils
- **Fast food:**
  - Residents also show a preference fast food, for example, samosas and chips mayai(Fries & Eggs).
- **Fruits:**
  - These are served mostly as a snack in between meals or served as dessert to main meal.

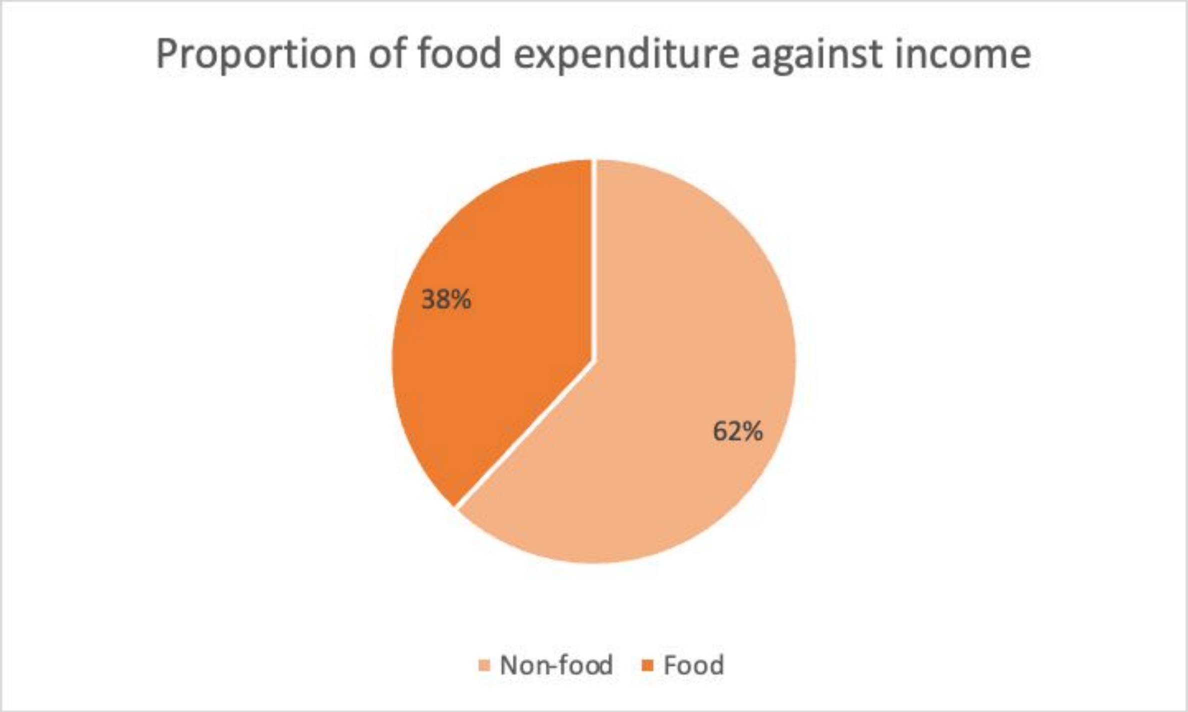
Section 1: Planning And Purchasing

This section explores consumer behavior, which influences planning and purchasing patterns of fruits and vegetables.

Section 1
Planning and Purchasing

Budgeting

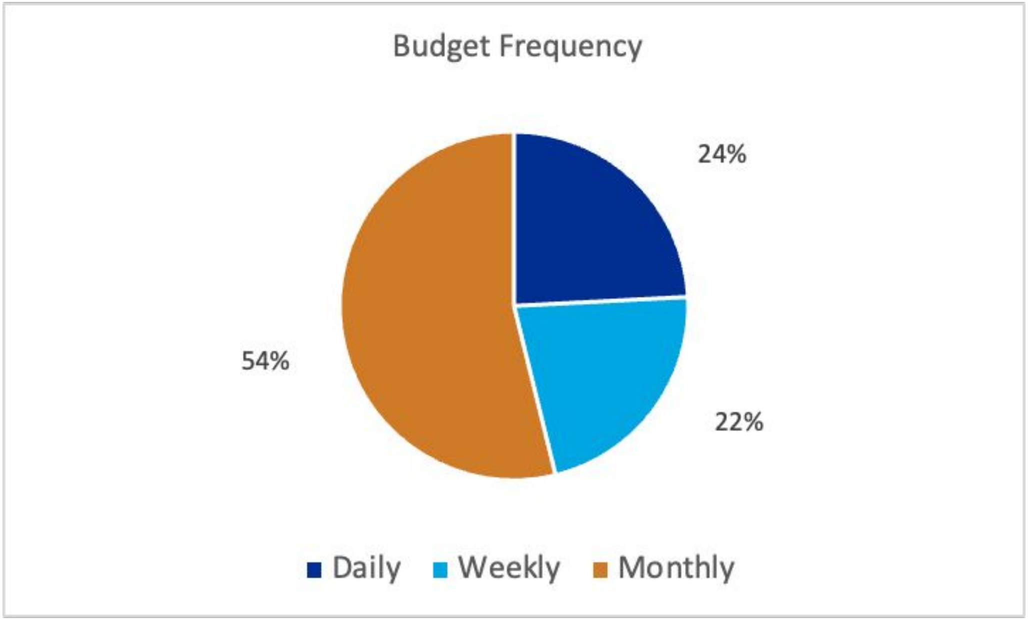
Respondents Spend Over A Third Of Their Income On Food



The median monthly income of low income households is KES. 30,000 (USD 195).

38% of this income is spent on food, of which nearly half (48%) goes to fruit and vegetables.

55% of FV Consumers Budget, Out Of Which 54% Budget Monthly



- Women (58%) are more likely to budget than men (48%).
- The practice of budgeting is more prevalent among those with **higher household sizes, higher income, higher education level**, and **below 35 years.**
- Budgeting on a monthly basis is more prevalent amongst those who budget. This could imply greater emphasis on **long term planning,** especially when it comes to finances.
- Monthly budgeting on food shows **less impulsive** behaviour and **more consistent and stable spending** on such products.

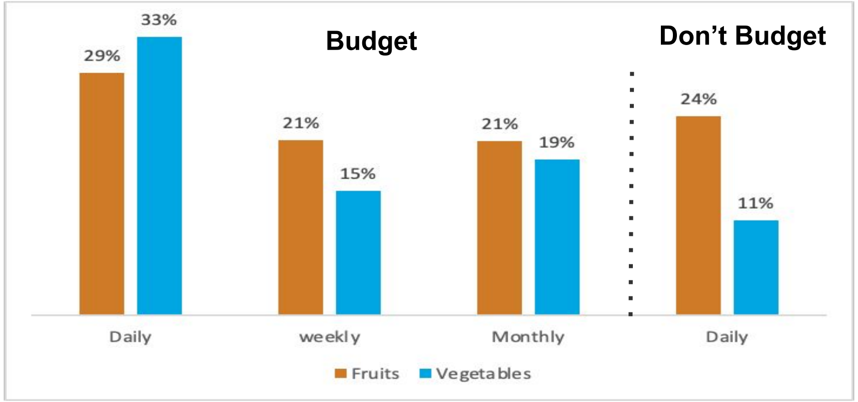
Average Expenditure On Food Per Household: Budgeters Vs. Non-Budgeters

Respondents who budget spend a higher proportion of their monthly income on food (including FV).

According to FSDK 2014 Financial Diary report, **LIC allocate 48% of their income on food.**

	Budget (KES)			Non-budgeters (KES)
	Daily	weekly	Monthly	Daily
n	21	20	47	71
Fruits	243	836	1,689	141
Vegetables	278	592	1,497	70
Food	**823**	**3,995**	**8,181**	**627**

Expenditure against budgeting



Daily budgeters account for 24% of our respondents. Those who budget daily for food **spend higher proportions of their food allocation on FV**. Though their daily amount is low, the cumulative amount spent is higher than those who set aside a monthly budget. To easily serve this demographic, package products in small quantities that match their daily budget.

Budgeters Are Educated Youth With Relatively Higher Incomes

Respondents who **budget spend a higher proportion of their monthly income on food (including FV).** Hence, budgeters can be an ideal population segment to target when marketing FV products. So what type of consumer is this?

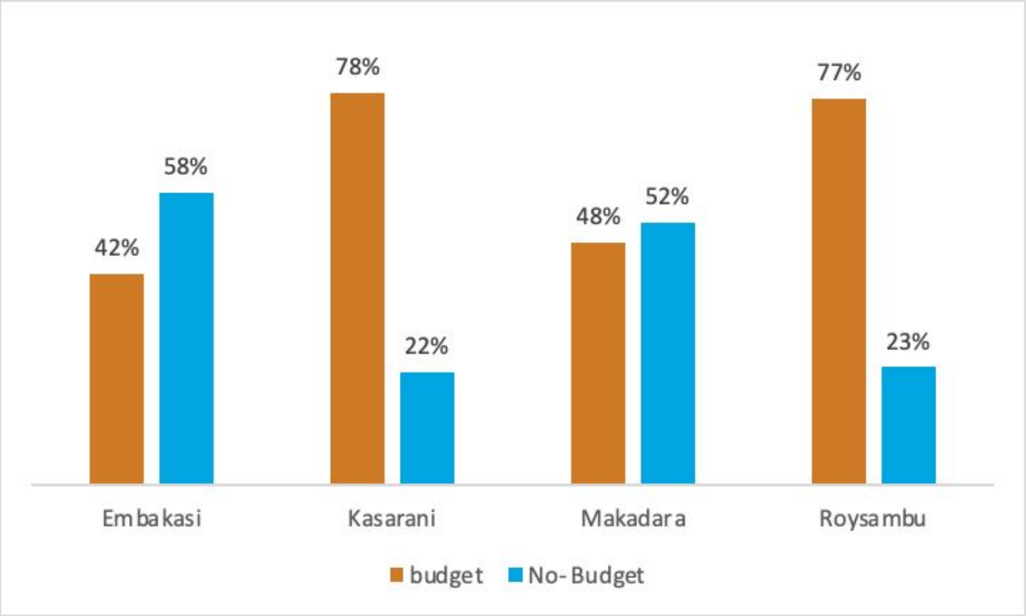
- **Respondents who budget have higher education levels when compared to those who do not budget:** Most respondents who budget (42%) have TVET or Diploma. On the other hand, respondents who said they do not budget, majority (52%) are secondary school educated.

- **A high proportion of those who do not budget fall within older age groups:** Though majority of our respondents, both who budget (58%) and do not budget (42%), fall within the age bracket of 25-34, the second highest age bracket of those who do not budget (30%) is 35-44.

- **Budgeting increases with increased income categories:** All respondents with income ranges between KES. 50,000-70,000 (USD 325 - 454) said they budget. The highest income bracket for those who do not budget is KES. 40,000-50,000 (USD 260 - 325).

"For fruits, I give them like KES. 300. Vegetables, I give them like KES. 500 per week -
Female, 30 years old, Embakasi

Where Do Consumers Budget More?



Respondents from Kasarani and Roysambu seem to budget more than other locations. This could be due to the fact that these locations have more respondents earning an income of above KES. 30,000 (USD 195)- Kasarani (93%) & Roysambu (64%).

Despite having lower concentration of population, these locations could be a good starting point for rolling out new semi-processed products due to a higher proportion of budgeters.

Leveraging Consumer Budgeting Behaviour To Increase FV Intake

1. **Focus on consumers who budget:** Those who budget seems to be a good target for semi-processed products as they spend a higher proportion of their income on FV (as compared to those who do not budget). Out of those who budget, majority budget monthly. Hence, tailored marketing strategies for those who budget monthly, such as monthly incentives programmes or product promotions could increase uptake of FV products. Smaller quantities of FV products for daily budgeters, who spend more on FV overall, can further increase consumption.

2. **Marketing products to younger consumers, with higher education:** Respondents who budget tend to have higher education levels and are younger (under 35). Hence, marketing campaigns targeting this segment of the population is beneficial, as the proportion of their income spent on FV is higher as compared to those who do not budget. To engage with this demographic, digital channels and conscious marketing on nutrition can be employed.

Disclaimer: Though this information is helpful to understand our target respondent, what people say in a survey might not be reflective of their actual budgeting behaviour - in order to get more accurate information, closely monitoring financial behaviour is needed. Future research monitoring spending patterns across a longer period of time will help improve insights.

Section 1
Planning and Purchasing

Decision-Making

Decision-Making To Purchase FV

1. **Women are the principal decision-makers in households:** In most households, 74% of respondents are the primary decision-makers regarding how much money is spent on food. Since majority of our respondents were female, this shows that a large proportion of the decision-makers are women.*

2. **The responsibility of being a decision-makers is attributed to them being the highest earners in a household or due to the gendered division of labour:** The respondents who are in charge of deciding the food budget primarily do so either because they are the highest earners in the household (31%) or due to a deliberate division of roles to enhance household management (30%).

3. **Education level of decision-maker varies:** The education level of respondents who decide on the food budget varies: 39% have a university degree, while 34% hold a TVET/diploma.

“I'm the one responsible for deciding what fruits and vegetables to buy for my household.”
Female, 25 years, Roysambu

Section 1
Planning and Purchasing

Purchasing

Distribution Channels

- **Supermarket:** Tier 1 supermarkets, mainly in cities and/or major towns, with greater variation of high end products, for example, Carrefour.
- **Mini Mart:** Tier 2 or Tier 3 supermarkets. Self-service shops offering wide variety of products under one roof; mostly located in shopping centers. The majority have branches across the region or within Nairobi. They include medium to micro size supermarkets. Examples; QuickMart, Shivling, Magunas, EastMart, and those with no branding.
- **Kiosk/kibanda**: Small open-fronted shops that contain most fast moving consumer goods. Located outside residential buildings and high traffic areas.
- **Formal open-air markets**: A public market place where goods and merchandise are sold, usually in a dedicated government-allocated areas. Each vendor has a dedicated stall. E.g Muthurwa market
- **Informal street markets (roadside sellers, street vendors)**: These are informal selling points often located alongside major roads and streets and have common consumer goods often displayed on the ground or on temporary structures.
- **Hawkers:** Persons who travel from place to place to sell their goods/merchandise.
- **Micro retail shops/duka:** is a stall mostly part of bigger building where goods are sold per piece or as a bundle. These ones also tend to sell to other market players for instance kiosk owners, hawkers since their prices are relatively lower.

While supermarket and mini-mart are self-service, duka's can sometime be of same size as minimart (but the consumer is served by the seller). Due to this size, some consumers tend to interchange duka for mini-mart.

Distribution Channels: Images

Supermarket

Minimart

Informal Street Markets

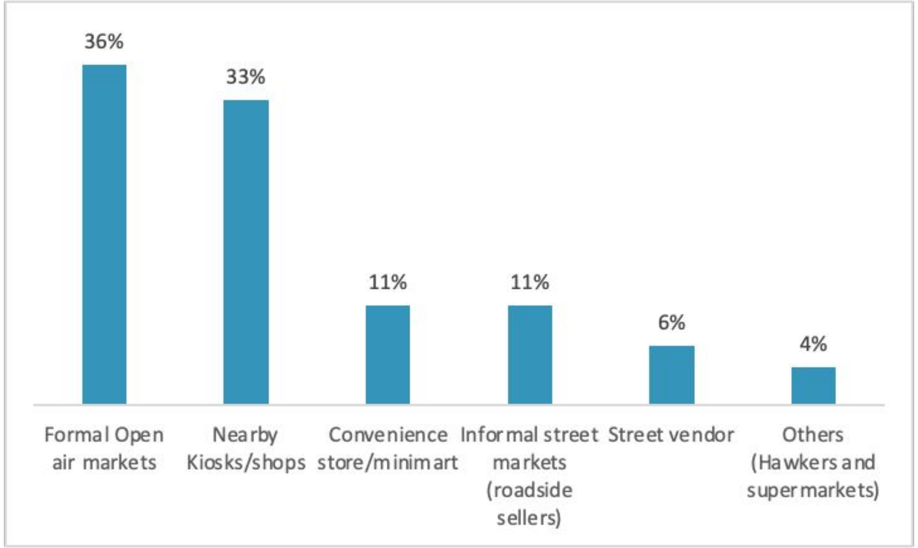
Kiosk/Kibandas

Formal Open Air Markets

Micro Retail Shops/Duka

Hawkers

Respondents Source FV Primarily From Formal Open-Air Markets And Nearby Kiosks*



Respondents prefer these sources because of:

- **Fresh produce** (23%)
- **Affordable prices** (22%)
- **Cleanliness & food safety** of the seller (13%)

Top 3 Qualities Consumers Look For When Purchasing FV

Price

Affordability of fruits & vegetables

Freshness

How fresh is the produce? How much time has passed since harvesting?

Quality

How good is the quality of the produce? Does it have worms, chemicals, etc.?

Influencing Purchasing Patterns Amongst FV Consumers

1

Improved Budgeting: Consumers who budget for food are more likely to spend a greater proportion of their income on FV. Hence, **targeting consumers who budget** (especially younger consumers who budget monthly), or encouraging conscious financial planning, can ease the cognitive load on consumers when purchasing FV.

2

Leverage consumer preferences: When purchasing FV, consumers are concerned about **prices, freshness, and quality**. Hence, marketing products along these consumer preferences can help increase consumption of FV.

3

Optimize for Preferred Shopping Locations: Capitalize on the popularity of **open-air markets, kiosks/kibanda, and street vendors** by ensuring product availability, competitive pricing, and emphasizing quality and freshness to meet consumer priorities.

Section 2: Preparation And Consumption

This section explores cooking, cleaning and consumption behaviors, which influence fruit and vegetable intake.

Preparation: Cooking And Preparing Meals

- Meal preparation and cooking is primarily the responsibility of the **household's matriarch**, except in cases where men/women are living alone.
- There is also an aspect of **cultural norms** where women are expected to prepare and cook household meals, rather than men.
- What is cooked in a household is dependent on household size, number of children and income.
    - Unlike in Ethiopia, where there are many religious fasting days which determine FV intake, FV consumption in Nairobi, Kenya is **not as dependent on religion**.

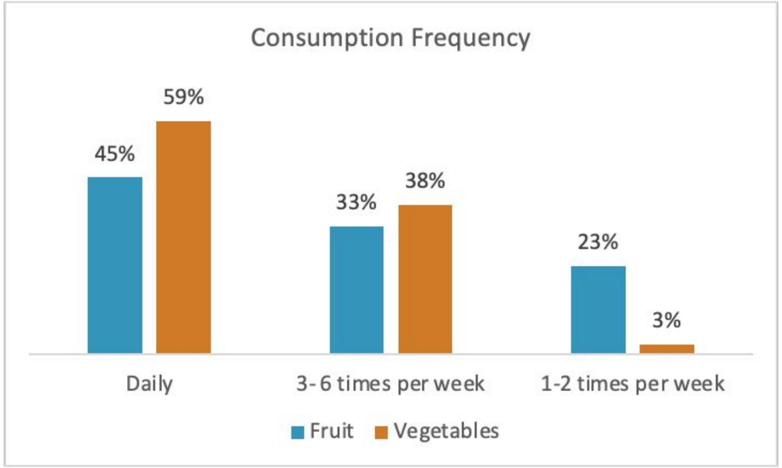
"I prepare food for myself since I live alone"
Female, 37 years old, Kasarani.

"Everybody can prepare the meal, but most of the time, my wife does. It's African, It's an African way of doing things. My wife prepares meals"- *Male, 26 years old, Roysambu.*

Vegetables Are Consumed More Than Fruits On a Daily Basis

- 100% of respondents reported that they consume fruits and vegetables.

- Though the frequency of vegetables consumption is higher, respondents spend slightly more on fruits than vegetables. This could be due to fruits being comparatively more expensive.



“We consume fruits and vegetables almost daily. -

Female, 28, Roysambu.

Capitalizing on FV Purchasing and Consumption Habits to Boost Semi-Processed Product Sales

1. **Aligning Product Offerings with Daily Diets:** The high daily consumption of fruits (47%) and vegetables (55%) among respondents highlights a potential market for fruit and vegetable products such as mango juice, tomato paste and ALV porridge. FV products can be marketed for their similar qualities to FV and offer alternative consumption options which are value to money and supplement consumption of FV in daily diets.

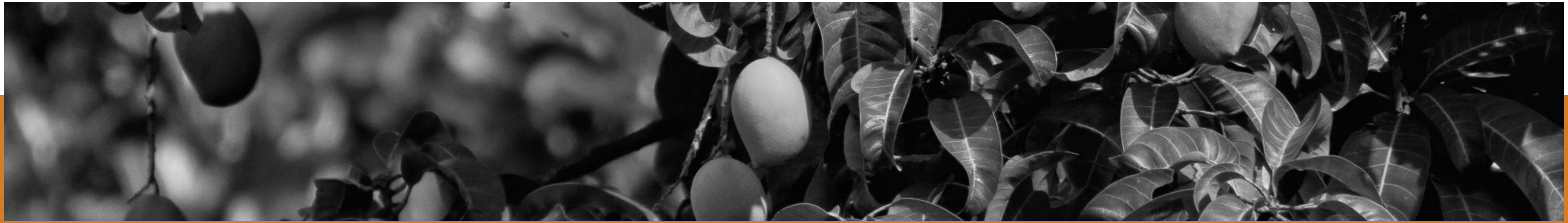
2. **Awareness Campaigns Based on Consumers Preferences:** FV consumers have a preference for fresh and high quality produce, **indicating a desire for nutritious diets**. This presents an opportunity for semi-processed products to align with consumers' established dietary inclinations by ensuring **high quality and real FV** in their products.

3. **Harnessing gender norms:** Gender norms have skewed FV decision-making, purchasing and preparation disproportionately towards women. Hence, **targeting semi-processed products towards women** decision-makers of the household could boost sales.

Specific Value Chains

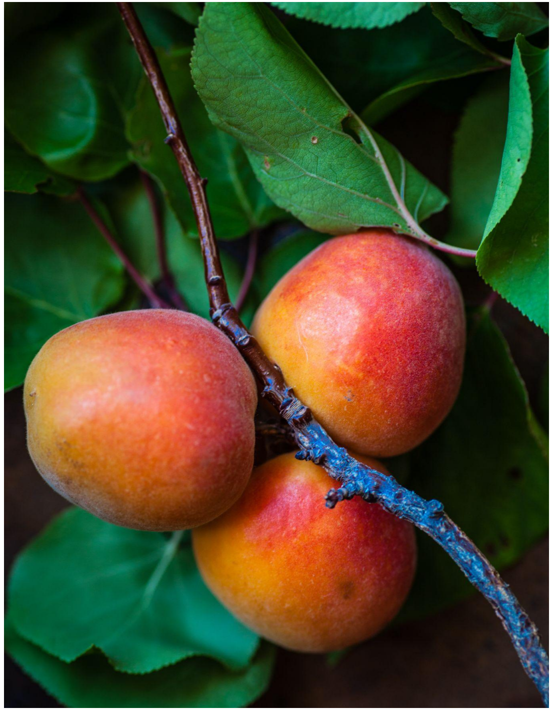
How do consumers budget, purchase and consume FV?

Insights on Consumer Behavior for Mango, Tomato and African Leafy Vegetable



Section 1

Mango



Knowledge And Awareness

Benefits of consuming mangoes:

- Most respondents said that mangoes are good for **health** as they have **high nutritional value**, specifically attributed to their high vitamin content (such as vitamin C).
- Respondents also said that mangoes are good for the immune system.
- Respondents also said mangoes are good for digestion and can help improve constipation.

Risks of consuming mangoes:

- Many respondents claimed that mangoes consumed in **colder seasons** cause fever and **sickness in children**.
- Some respondents said that mangoes can cause **malaria like** sickness in small children.
- Others said that high mango consumption can lead to **stomach ache**, **diarrhea** and **diabetes**.

Despite high consumption rates, misconceptions still exist about mango consumption, especially for children.

"During cold seasons, consumption of mangoes can cause fever especially in young children"

by Female, 25-34 years, Embakasi.

Fresh Vs. Semi-Processed

- Majority of respondents **prefer fresh mangoes** over semi-processed mangoes.
- Fresh mangoes are perceived to have **higher nutritional content**, hence, are seen to be better for health.
  - IDIs reveal that respondents are concerned about nutritional benefits and freshness when it comes to fruit and vegetable intake. When asked if they prefer fresh or semi-processed mangoes (for example, mango juice), respondents said that they prefer fresh mangoes as they fear semi-processed fruits have additives and preservatives, which are detrimental for health.

"I prefer fresh mango because it's a more natural option that hasn't gone through many processes or had additives and preservatives added. It's closer to the way our ancestors enjoyed mango."- ***Female, 35 years old, Roysambu.***

Planning And Purchasing

- Key decision maker:
  - **Women** are the principal decision-makers when it comes to when and how many mangoes are purchased. They are also the ones who primarily purchase mangoes in the household.
  - This could be reflective of the responsibilities they hold within a household, where gendered distribution of labour means that women are in-charge FV purchasing.

- The top 3 places from **where mangoes are purchased** are:

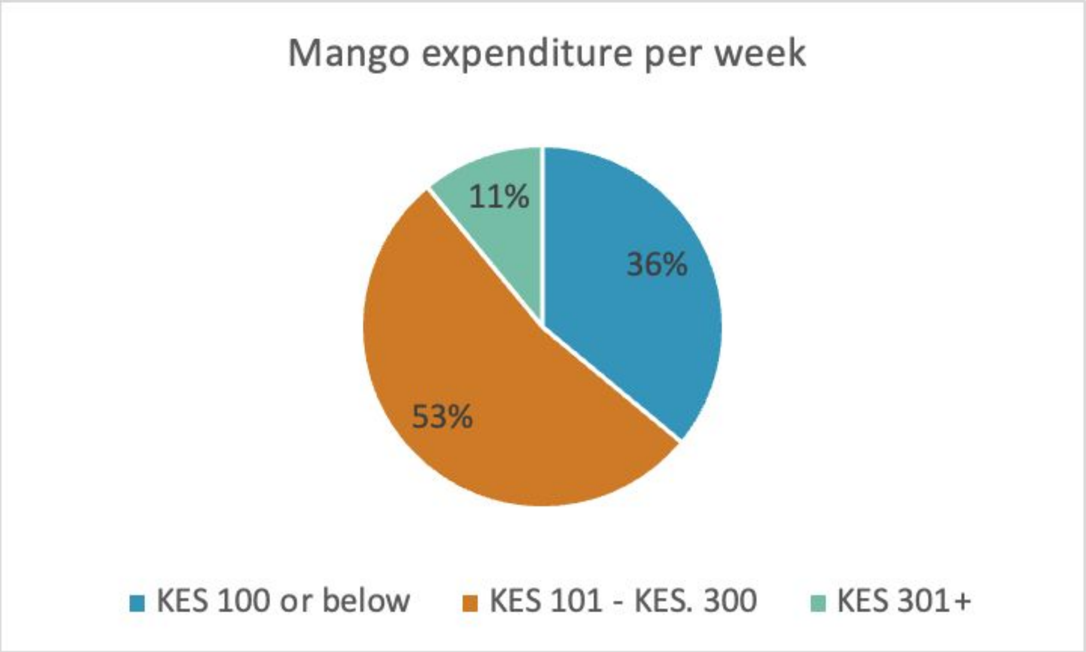
Kiosks/Kibanda *	(31%)	Formal open-air markets	(29%)	Informal street markets /roadside sellers	(25%)

Reasons for preferred purchase source: **Freshness** (23%), **Affordable price** (20%), **Good quality and healthy** (15%), **Cleanliness and food safety of seller** (15%)

Purchasing: Expenditure

When in season, **over half (51%) of respondents spend KES 101-200 per week** (USD 0.7 - 1.3) on mangoes (an average of 5-10 mangoes).

34% spend less than KES. 100/ USD 1 (on average 5 mangoes).



Consumption

Majority, 97%, of respondents **consume** mangoes.

- Mangoes are predominantly consumed during harvest season.
    - The two main harvest seasons are: **December–March** in Eastern and Central Kenya, and from November – February as well as **May–August** at the coast (Kehlenbeck et al., 2012).
- **77%** of respondents said that they eat mangoes **fresh and whole**.
    - Only **17%** of respondents **blend mangoes** to make **mango juice.**
- Mangoes are consumed at **no specific time** during the day. However, they are rarely consumed in the morning.

Barriers And Enablers To Mango Consumption

Barriers

27% of respondents said that a main hindrance to consuming mangoes is their lack of **availability.** This is especially the case for seasonal fruits like mangoes. **27%** also mentioned the lack of **good quality** mangoes. Respondents also mentioned **high price (17%)** and **taste (17%)** as further barriers to consumption.

Enablers

24% said that they consume mangoes because of their **taste, 18%** said that they consume because mangoes are sold at an **affordable price** and **17%** said they consume mangoes due to their **nutritional benefits.**

The market for mangoes is large as majority of the respondents (97%) consume mangoes. Increased availability during off season and increasing quality can boost consumption beyond the mango season.

How Might We Influence Consumption Of Mangoes?

1. **Dispelling Myths & Misconceptions:** Currently, respondents believed certain myths and misconceptions, which influence mango consumption during certain seasons (such as colder seasons). Targeted information campaigns dispelling myths and misconceptions can improve mango consumption beyond hot seasons.

2. **Sustained Distribution:** Ensure sustained distribution of mangoes during the harvest season, especially across preferred sources of purchase. These include kiosks, formal open-air markets and informal street vendors/roadside sellers.

3. **Target Women Consumers**: Focus on female decision-makers in households. This demographic has a preference for taste and nutritional benefits. Hence, leveraging these characteristics can boost mango consumption.

4. **Supply Side Interventions to Fit Budget Requirements:** Majority (89%) of FV consumers budget KES. 300 (USD 2) or below for mangoes per week. Interventions should focus on ensuring mango prices fit well within this budget.

Mango Juice

Christine: The Wellness Mama

25 - 34 yrs

Married

KES 30,000 - 39,000

3 - 4 pp in HH

1 - 2 children < 18 yrs

Secondary/ TVET/Diploma

Self - Employed

Work Sector: Trade (wholesale/retail/Mama mboga)

Christine, is a devoted and compassionate mother, focused on creating a nurturing environment for her children. She is proactive in ensuring their health by being resourceful, knowledgeable about nutrition, and instilling healthy habits. Christine's vigilant and protective nature reflects her commitment to providing her children with the best possible start in life. Her primary motivation is to see her children grow up healthy, happy, and prepared for the future.

Knowledge & Awareness

Beliefs/Myths

Misconception around water and sugar content
Belief - not made from real fruit
Concerns about additives and preservatives

Sources of Information

- ➔ Friends
- ➔ Family
- ➔ TV
- ➔ Radio
- ➔ Supermarkets

Goals, Need & Motivation

Goal

Emphasis on natural, fresh food with high nutrition
Desire for fewer additives and preservatives

Need

Increased awareness of product nutritional benefits
Lower prices

Motivation

Hypothesis: health of children

Purchasing and Consumption Behaviors

Barriers

- ➔ Price
- ➔ Availability
- ➔ Knowledge of product nutritional content

Enablers

- ➔ Nutritional benefits
- ➔ Affordability
- ➔ Taste

Consumption Format

How it's consumed

Straight from the packet or decanted into a glass

Consumption Patterns:

Timing and Fluctuations in Product Intake

Increased consumption when children are at home (sch. breaks, spc. events). Decreased consumption during financial constraints. Reduced intake reported during colder seasons by one participant

Weekly Product Expenditure

KES 71 - 300

Consumption Frequency

Twice a week

Product Purchase Point

Kiosk, Supermarket, roadside stall

Product Preference

Fresh

Mango Juice

James 'Jamo': jamaa wa mtaa

- 25 - 34 yrs
- Married
- KES 20,000 - 49,000
- 5 pp in HH
- 2 children < 18 yrs
- Secondary/ TVET Diploma
- Employed
- Work Sector: Transport (Matatu Tout)

Jamo is a dedicated family man who values tradition and community beliefs. Even though he believes mango juice in cold weather causes illness, he cares about staying healthy and eating a balanced diet. He loves finding tasty, nutritious options to keep his energy up while working hard as a public transport conductor. He treasures time with his family and takes pride in providing great service to commuters.

Knowledge & Awareness

Beliefs/Myths

Believes when taken in cold or rainy season causes flu and malaria

Sources of Information

- Ads on TV
- Supermarkets
- Internet
- Retail

Goals, Need & Motivation

Goal

Eat tasty, high quality and nutritious mango fruits to ensure balanced diet

Need

Additional awareness about nutritional benefits of mangoes

Motivation

Health benefits

Purchasing and Consumption Behaviors

Barriers

Concerns around additives and preservatives

Enablers

- Convenience (saves time compared to preparing fresh mangoes)
- Tasty

Consumption Format

How it's consumed

Straight from the packet

Consumption Patterns:

Timing and Fluctuations in Product Intake

Consume mostly after meals or upon arriving home from work.

Weekly Product Expenditure

Kes 300-500 per week for 1 litre

Consumption Frequency

Around 3 times a week

Product Purchase Point

Supermarket ,retail shop

Product Preference

Fresh & Semi processed

Planning And Purchasing

Key Decision Makers for purchasing mango juice:

- IDIs reveal a pronounced **female** influence in purchasing mango juice. This may reflect wider trends in household decision-making and labour being more in favour of women. Though, women purchase mango juice, respondents revealed that **children predominantly consume** mango juice within households.

Purchasing and Budgeting Insights for mango juice

- **Budget-Conscious** Consumers : A notable portion (59%) adopt a budgeting approach, indicating a market sensitive to budgeting habits as opposed to those who do not budget (41%).
- Monthly Budgeting Habits: More than half (55%) of respondents who budget organize their expenditures on a monthly basis, suggesting regular patterns in purchasing frequency and quantity.

The top 3 places from **where mango juice is purchased** are:

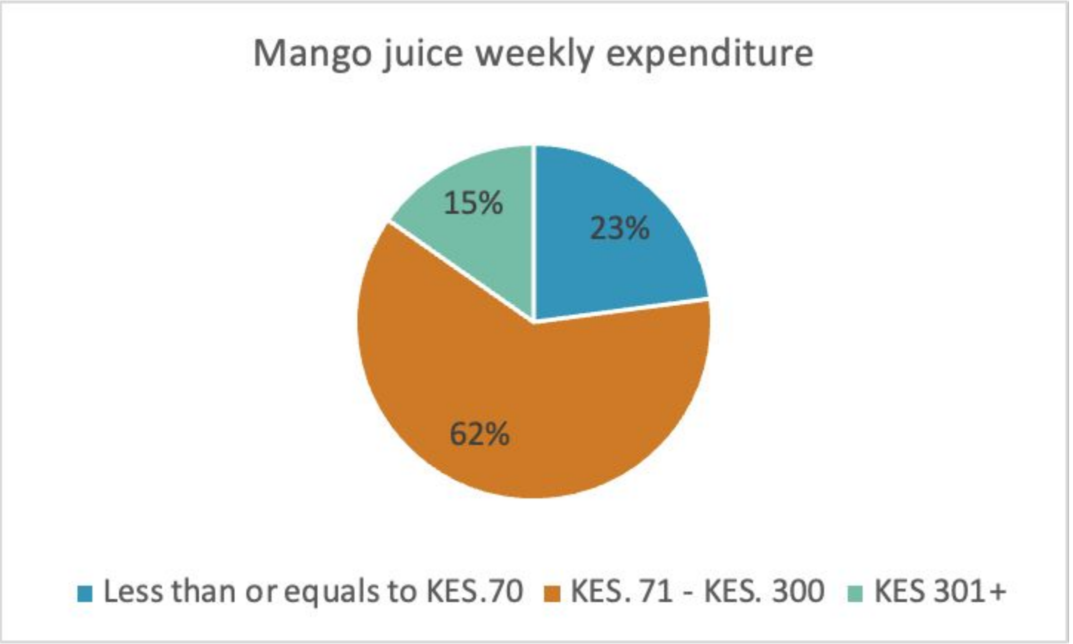
Informal Street Markets (Roadside Sellers)	(31%)
Juice Parlours	(26%)
Mini mart	(22%)

Purchasing: Expenditure

A **majority** (62%) spend between **KES. 71 to 300** (USD 0.5-USD 2) **in a week on mango juice**, highlighting a range of spending habits within the consumer base. Majority of those in this category spend KES 101- 300.

82% of respondents from the follow-up survey prefer to purchase mango juice in **1 liter packs**. These cost approximately **KES. 120-250** (USD 0.7-USD 1.6) depending on the brand.

Respondents prefer 1 liter of mango juice due to their household size of 3-6 members.



Consumption

82% of respondents **consume mango juice**. **Afia** is the most popular brand of mango juice amongst low income consumers.

- Regular Consumption: A substantial number of consumers (47%) include mango juice in their diet at least **1-2 times a week,** indicating consistent but moderate consumption. 34% consume mango juice 3 or more times a week.
- Blending Preference: A significant majority (74%) **prefer semi-processed, blended juice** to fully processed juice (which needs to be diluted). This is because respondents prefer the **taste** of semi-processed juices.

Brands: Mango Juice

- Afia
- Pick 'n' Peel

These 2 are the preferred brands for our respondents.

Other brands mentioned were Delmonte, Minute Maid and Ceres.

Barriers And Enablers Consumption

Barriers

31% of respondents said that they do not consume mango juice because it is **unavailability. 27%** of respondents said that mango juice is **too expensive** and **12%** mentioned that they are **unsure about the nutritional value** of mango juice.

Enablers

30% said that they consume mango juice because of its **nutritional benefits, 25%** said that they consume because mango juice is sold at an **affordable price** and **24%** said they consume mango juice because it is **tasty.**

Though **82%** of respondents consume mango juice, there is scope to increase consumption by focusing on nutritional value of mango juice and the price it is sold at.

Female And Self-Employed: Linked To Higher Juice Consumption

Variable	Influence on Juice Consumption	Insight
Gender	Being female is positively associated with an increased likelihood of juice consumption.	The significant positive influence of gender on juice consumption suggests that females are more likely to consume juice than males suggesting they prefer the convenience of a juice. This could be important for targeted marketing strategies and product development.
Employment	Being self-employed is positively associated with a higher likelihood of juice consumption compared to being employed full-time.	The fact that self-employment significantly influences juice consumption might indicate different lifestyle or dietary preferences in this group. This insight can be useful for understanding consumer behavior in different employment sectors.
Number of children in the Household	There is a statistically significant association between the number of children in a household and of mango juice consumption.	If mango juice consumption varies with the number of children, marketing efforts for mango juice can be tailored accordingly. For instance, households with more children might be a more receptive audience for promotions or advertisements related to mango juice.

Household Size, Budgeting And Income: Linked To Higher Juice Consumption

Variable	Influence on Juice Consumption	Insight
Household Size	Statistically significant relationship between juice consumption and the size of household	Larger households show varied consumption patterns, highlighting opportunities for multi-packs or one-plus-one promotions, and family-oriented marketing.
Budgeting Approach	There is a statistically significant influence on consumption patterns	The budgeting approach towards juice consumption for (budgeters vs. non-budgeters) suggests different spending habits and priorities, guiding marketing strategies towards emphasizing value, taste or price.
Household Income	There is a statistically significant association between household income and of mango juice consumption.	Economic status influences juice choices, suggesting targeted marketing and pricing strategies for different income groups.

How Might We Influence Consumption Of Mango Juice?

1. **Knowledge & Awareness on Nutritional Benefits:** Consumers currently perceive fresh produce to be higher in nutritional content and better for health. Investing in knowledge and awareness campaigns for semi-processed products, focusing on gain/loss framed messages on vitamin content, nutritional value and freshness could attract consumers. This is beneficial in increasing nutritional intake through mango consumption, especially during periods when mangoes are not in season.

2. **Optimize Pricing for Budget-Conscious Consumers:** Develop pricing strategies that offer value for money, such as bulk purchase discounts, loyalty programs, and special offers such as monthly promotions. Align strategies with spending habits, within existing consumer budgets.

3. **Target Women and the Family Market**: Focus on appealing to female consumers and families by designing family-friendly packaging, and creating mother-centric marketing campaigns. Highlight nutritional benefits and taste to attract this demographic.

4. **Expand Distribution Channels:** Strengthen distribution across street-side stalls, juice parlors, and mini marts. Form partnerships, improve supply chain efficiency, and optimize shelf placement. Tailor marketing and promotions to each sales venue. Strategic product positioning (maximizing visibility & engagement) at each sales channel can further heighten awareness and sales.

Section 2

Tomato

Knowledge And Awareness

Benefits of consuming tomatoes:

- Majority (53%) of respondents said that they did not know about the benefits of consuming tomatoes.
- Some respondents said that tomatoes **help make food taste better**.
- Other respondents mentioned health benefits of consuming tomatoes, such as **improving eyesight, rich in vitamins, improves immunity and increases blood flow.**

Risks of consuming tomatoes:

- Majority (76%) of respondents do not know of any risks of purchasing and consuming tomatoes.
- Out of those who mentioned risks, many spoke about the increased probability of getting **stomach ulcers or acidity.**
- Some respondents even spoke about health risks of consuming spoilt tomatoes.

Majority of respondents were unaware of the benefits/risks of consuming tomatoes. This could be a result of tomatoes being a staple in everyday diet, hence, little thought goes into consumption.

Fresh Vs. Semi-Processed

- Majority of respondents **prefer fresh tomatoes** over semi-processed tomatoes.
- Fresh tomatoes are perceived to have **higher nutritional content**, hence, are seen to be better for health.
  - IDIs reveal that respondents are concerned about added preservatives in semi-processed tomatoes, which are believed to reduce the nutritional benefits of the product.
  - Some respondents preferred giving their children natural products, as opposed to semi-processed products due to the fear of additives.
- Fresh tomatoes are also more **easily available** than processed tomatoes. Hence, consumers find it more convenient to purchase and consume fresh fresh tomatoes.

“Fresh tomatoes do not contain added chemicals in them compared to semi processed ones.”
Male, 18-24 years, Embakasi.

Planning And Purchasing

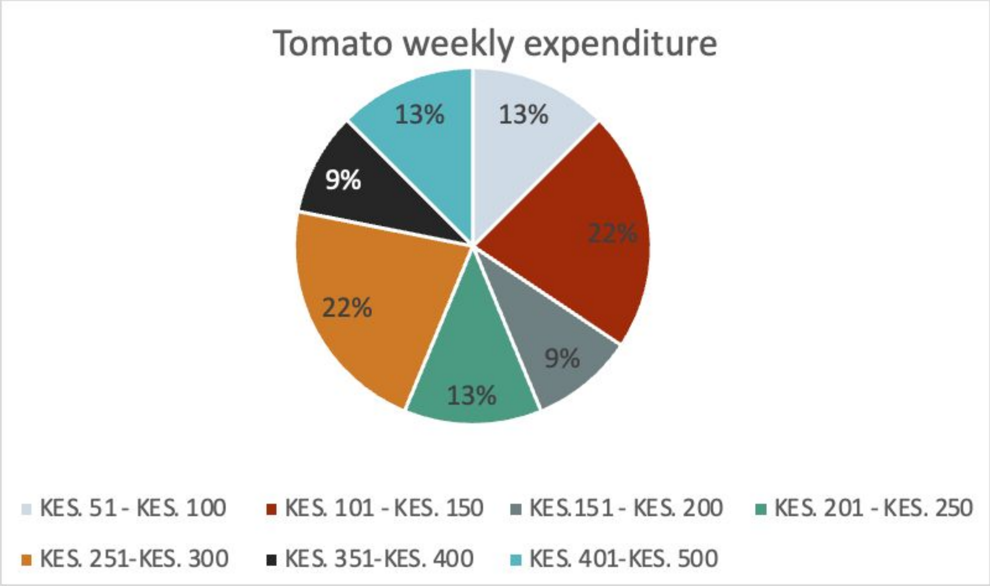
- Key decision makers:
    - Tomatoes are generally used in cooking and preparing meals in a household. Since **women** are primarily incharge of cooking and preparing meals in a household, they are also the principal decision makers of where, when and how many tomatoes are purchased.
- 64% of respondents buy tomatoes on a **daily basis**, indicating regular and frequent consumption. Those who buy daily tend to buy fewer than those who have lower purchasing frequency.
- The top 3 places from where tomatoes are purchased are:

Informal street markets /roadside sellers	(30%)	Nearby kiosks	(29%)	Kiosks/Kibandas	(23%)

Reasons for preferred purchase source: **Convenient - distance from home** (24%), **Fresh produce** (20%), **Affordable price** (19%)

Purchasing: Expenditure

- Over 50% of respondents said that they purchase tomatoes in the **evening**.
- **22%** of respondents said that they spend approximately **KES. 101-150** (USD 0.7 - 1) (approximately 1kg) and **22%** said that they spend **KES. 251-300** (USD 2 - 3) (approximately 2kgs) every week.
- Respondents spending KES. 251-300 (USD 1.6 - 2) had a household size of 4 to 5 members. This indicates that **spending on tomatoes is dependent on household size and income**, with larger households with higher income purchasing more.



Barriers And Enablers To Tomato Consumption

Barriers

35% of respondents said that a main hindrance to consuming tomatoes is **lack of availability. 24%** also mentioned **high price** and **24%** said lack of **good quality** tomatoes as barriers to consumption.

Enablers

32% of respondents said that they consume tomatoes because they are **easily available**. **24%** said they consume tomatoes due to **nutritional benefits** and **14%** consume because they are **familiar with the taste**.

Tomatoes are a staple in everyday cuisine, where **98%** of respondents **consume** tomatoes. Tomatoes are predominantly consumed via cooking in **main meals** such as lunch or dinner. This reveals that consumers already have a high habit of consumption.

How Might We Influence Consumption Of Tomatoes?

1 **Increase Knowledge on the Benefits of tomato consumption:** Respondents reveal low levels of knowledge on the nutritional value of tomatoes. This can be done through targeted media campaigns or via healthcare professionals, focusing on their positive influence on health.

2 **Target Married Women:** Cultural norms dictate that married women in households are primarily incharge of cooking and preparing meals in a household. Since tomatoes are a staple in everyday cuisine, appealing to female consumers, by ensuring high availability at convenient locations close to their households, can boost purchasing and consumption patterns.

3 **Focusing on Specific Distribution Channels in the Evening:** Ensure high distribution of tomatoes, especially in evenings, across preferred sources of purchase. These include formal open-air markets, nearby kiosks and informal street vendors/roadside sellers. Produce at these locations should be fresh and affordable to match consumers' priorities.

Tomato Paste

Susan 'Suzie' wa biashara

- 28 - 37 yrs
- Married
- KES 35,000 - 50,000
- 8 pp in HH
- 4 children < 18 yrs
- Secondary
- Self - Employed
- Business — Work Sector

Suzie is an enterprising and resourceful self-employed woman, living in a bustling household, as such, she prioritizes flavorful and budget-conscious meal options for her family. She's a practical and innovative cook who seeks cost-effective ways to enhance dishes, often favoring tomato paste for its rich taste. Her commitment to both her business and household showcases her adaptability and determination in managing various roles.

Knowledge & Awareness

Beliefs/Myths

Considers tomato paste tastier and flavorful for meat dishes.
Views tomato paste as a more affordable to fresh tomatoes.

Sources of Information

- ➔ Relies on friends recommendations
- ➔ Advertisements
- ➔ Supermarket

Goals, Need & Motivation

Goal

Aims to prepare and consume tasty and flavorful meals

Need

More info on how to store/preserve the paste once opened

Motivation

Prefers flavorful and cost-effective options over fresh tomatoes.

Purchasing and Consumption Behaviors

Barriers

Faces storage challenges due to concerns about paste spoilage.

Enablers

- ➔ Affordability
- ➔ Availability in small packages
- ➔ Taste
- ➔ Convenience

Consumption Format

How it's consumed

Staple ingredient in most meals - especially meat.

Considered a spice

Consumption Patterns:

Timing and Fluctuations in Product Intake

Steady consumption pattern that is not pegged on any specific occasion

Weekly Product Expenditure

KES 51 - 200 on 1-4 sachets

Consumption Frequency

Almost daily - key ingredient

Product Purchase Point

Retail Shops, Supermarket

Product Preference

Semi-processed due to time saved cooking or preparing meals

Tomato Paste

Johnny: The driven hustler

21 - 26 yrs

Single

KES 20,000 - 50,000

1 pp in HH

0 children < 18 yrs

Secondary/ TVET

Employed

Work Sector

Employed (Driver)

Johnny enjoys experimenting with various cuisines. Balancing a busy professional life, He values convenience and efficiency in his cooking. He firmly believes that tomato paste serves as a practical substitute for fresh tomatoes, providing both convenience and comparable nutritional benefits, making it a crucial element in his diverse range of recipes. His culinary explorations are health-conscious and time-efficient.

Knowledge & Awareness

Beliefs/Myths

Believes tomato paste is a perfect substitute for fresh tomatoes both in terms of taste and nutritional value

Sources of Information

- ➔ Ads
- ➔ Supermarket shelves
- ➔ Retails shops

Goals, Need & Motivation

Goal

Quick and nutritious option to incorporate in food recipes in place of fresh tomatoes
Save time needed to chop tomatoes

Need

Tomato paste brand feedback - customer reviews/rating - to aid decision making

Motivation

Convenience of using tomato paste in multiple recipes

Purchasing and Consumption Behaviors

Barriers

Choice overload in the supermarkets due to availability of multiple brands to choose from

Enablers

- ➔ Tasty & flavourful
- ➔ Nutritive value
- ➔ Substitute for fresh tomatoes
- ➔ Saves cooking time

Consumption Format

How it's consumed

Added to food when cooking - usually after frying onions

Consumption Patterns:

Timing and Fluctuations in Product Intake

Steady consumption pattern

Weekly Product Expenditure

Kes 100 - 200 Tinned cans to minimize daily trips to shop

Consumption Frequency

3-4 times a week

Product Purchase Point

Mostly Supermarket

Product Preference

Semi processed

Planning And Purchasing

- Key Decision Makers
  - 76% of consumers make their own purchasing decisions regarding tomato paste. Majority of our respondents are women, as we targeted the household decision-makers during data collection.
- **Budget-Conscious Consumers**: 69% of respondents who consume tomato paste budget for food, indicating a budget-conscious approach to purchasing.
- **Monthly Budgeting**: Majority (51%) of tomato paste buyers who budget, budget on a monthly basis.
- Top 3 **purchasing locations for tomato paste**:

Mini mart	(59%)
Micro Retail Shop	(28%)
Informal street markets (roadside sellers)	(8%)

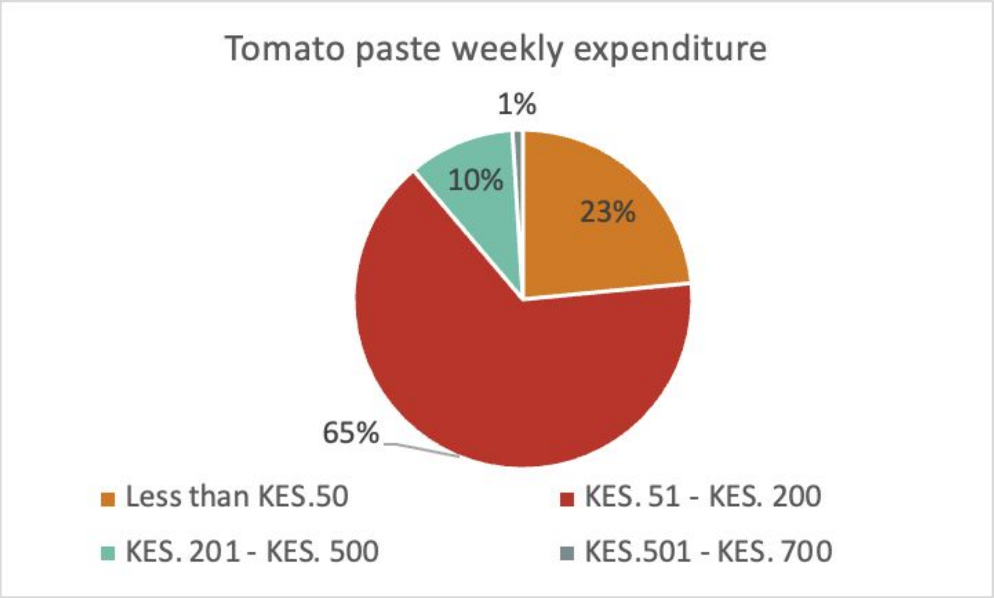
Disclaimer: We did a follow up survey on those who buy from minimart and some still referred to minimart as “duka”. From our synthesis we realised for a LIC a mini mart may be small in size such as an average duka and therefore they seem to use the name interchangeably.

Purchasing: Expenditure

65% of respondents from the survey spend about **KES. 51-200 (USD 1) per week** on purchasing tomato paste.

IDIs reveal that majority of consumers spend around KES. 100-200 per week on tomato paste in tin cans and sachets.

Consumers seem to prefer purchasing tomato paste in small quantities as they report tomato paste to spoil soon after opening. These small quantities are mostly about 50 grams for KES. 30-50 or 100 grams KES. 70-75. This indicates that those spending **KES. 200 (USD 1.5) buy an average of 4 sachets or 2 tins of 100 grams per week.**



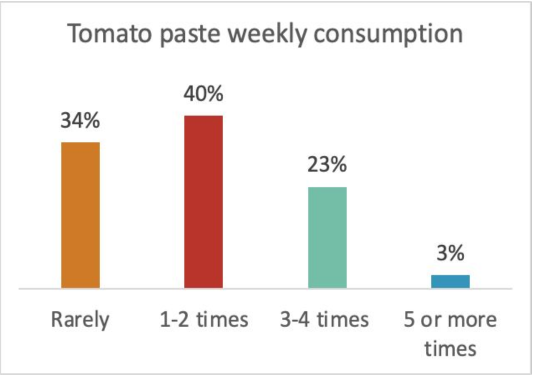
Consumption

63% of respondents **consume tomato paste**. IDIs revealed that 50-70 gram sachets are the most popular followed by the 100 gram tins (specifically from kenylon which is about KES 70-75/USD 0.5).

- Moderate Consumption: **66%** of respondents include tomato paste in their diet at least **once a week.** This indicates a moderate amount of consumption.
  - Only **26%** of respondents consume tomato paste 3 or more times a week.
- Majority (74%) of respondents said that they use tomato paste to cook soups and/or stews.

Brands: Tomato Paste

- Tam Tam
- Kenylon
- Peptang
- Zesta*



Barriers And Enablers To Consumption

Barriers

47% of respondents said that they do not consume tomato paste because it is **not natural (has added preservatives)**, **18%** said that they do not consume tomato paste because they are **not aware of the product**, and **14%** said that they are **not familiar with the taste.**

Enablers

52% said that they consume tomato paste because it is **easy to cook/consume** (saves time when cooking by not cutting tomatoes)**, 20%** said that they consume tomato paste because of the **taste** and **13%** said they consume tomato paste because it is **affordable.**

63% of respondents consume tomato paste, however, preference for natural produce and awareness of nutritional benefits of semi-processed products like tomato paste is still low.

Gender And Consumption

Being female is positively correlated with a higher likelihood of consuming tomato paste.

Variable	Influence on Tomato paste consumption	Insight
Gender	Being female is positively associated with an increased likelihood of Tomato paste consumption.	The significant positive influence of gender on Tomato paste consumption suggests that females are more likely to consume tomato paste than males. This could be important for targeted marketing strategies and product development.
Budgeting Approach	There is a statistically significant influence on Tomato paste consumption patterns	The budgeting approach towards tomato paste consumption for (budgeters vs. non-budgeters) suggests different spending habits and priorities, guiding marketing strategies towards emphasizing value, taste or price.

How Might We Influence Consumption Of Tomato Paste?

1

Nutritional Benefits of Product: Most respondents mentioned hesitation to consume tomato paste due to added chemicals & preservatives, which are perceived to be detrimental to health. On the production side, it is important to ensure maximum amount of real tomato content and leverage that in marketing campaigns. Further informational campaigns can include gain/loss framed messaging to create awareness on the nutritional content of tomato paste to boost consumption.

2

Target Women in Large Households: Since women are the principal decision-makers on FV consumption in households, and manage the cooking and preparation of meals, one should target this demographic. Women are also the larger consumers of tomato paste. Marketing can leverage on women's preference to save time when cooking/preparing meals, especially in larger households.

3

Expand Distribution Channels: Increase distribution across consumers preferred place of purchase for tomato paste: mini marts and micro retail shops. Consumers' existing habits of purchasing tomatoes from formal open-air markets, nearby kiosks & informal street sellers can also be leveraged by simultaneously selling tomato paste there. This reduces consumers' cognitive load of decision-making by purchasing from a familiar sources. Strategic product positioning (maximizing visibility & engagement) at each sales channel can further heighten awareness and sales.

4

Optimal Packaging for Budget Conscious Consumers: Develop packaging in small sachets (25-50 grams), as consumers are concerned about shelf life of tomato paste after opening. Pricing should further reflect consumers' current budget allocation for tomato paste.

Section 3

African Leafy Vegetables

Knowledge And Awareness: ALV

Benefits of consuming ALV:

- 97% of respondent knew about benefits of consuming ALV.
- Most respondents mentioned **ALV boosting blood levels and improves immunity**.
- Many respondents also mention ALV as a **good source of fibre, and rich in vitamins**, which is good for health.

Risks of consuming ALV:

- 73% of respondents did not know about risks of consuming ALV.
- Out of those who knew about risks, **poor quality ALV** (unclean, not fresh, and produced with pesticides and chemicals) was said to **cause stomachache, ulcers and diarrhea.**

ALV is perceived to be highly beneficial for health by majority of respondents.

Fresh Vs. Semi-Processed

- 100% of respondents **prefer fresh ALV** over semi-processed ALV.
  - Fresh ALV is perceived to be more **nutritious** than semi-processed ALV. Respondents said that they have higher nutritional value, with no additives and preservatives.
  - Many respondents also mentioned that they are more **familiar** with consuming fresh ALV than semi-processed ALV.
  - Fresh ALV also comes in more **variety** than semi-processed ALV and are **easier to cook** than semi-processed ALV.
  - Respondents also mentioned that fresh ALV is more **visually appealing and tasty**, as compared to semi-processed products.

"They are fresh and have no additives to preserve them"
Male, >55 years, Kasarani.

"There are always a lot of varieties in the market from where I can choose freely."
Male, 45-54 years, Makadara.

Planning And Purchasing: ALV

- Key decision makers:
  - Since women are primarily in charge of cooking and preparing meals in a household, they are also the principal decision makers of when, how much and what type of ALV is purchased.
- Motivations underlying respondents' choices when purchasing ALV: IDIs reveal that many respondents consume ALV for their high nutritional value.
- Types of ALV purchased: **Black nightshade - "*managu*"** (29%), **Amaranthus - *"terere"*** (24%), **Cowpeas *"kunde"*** (17%)
- The top 3 places from where ALV are purchased from:

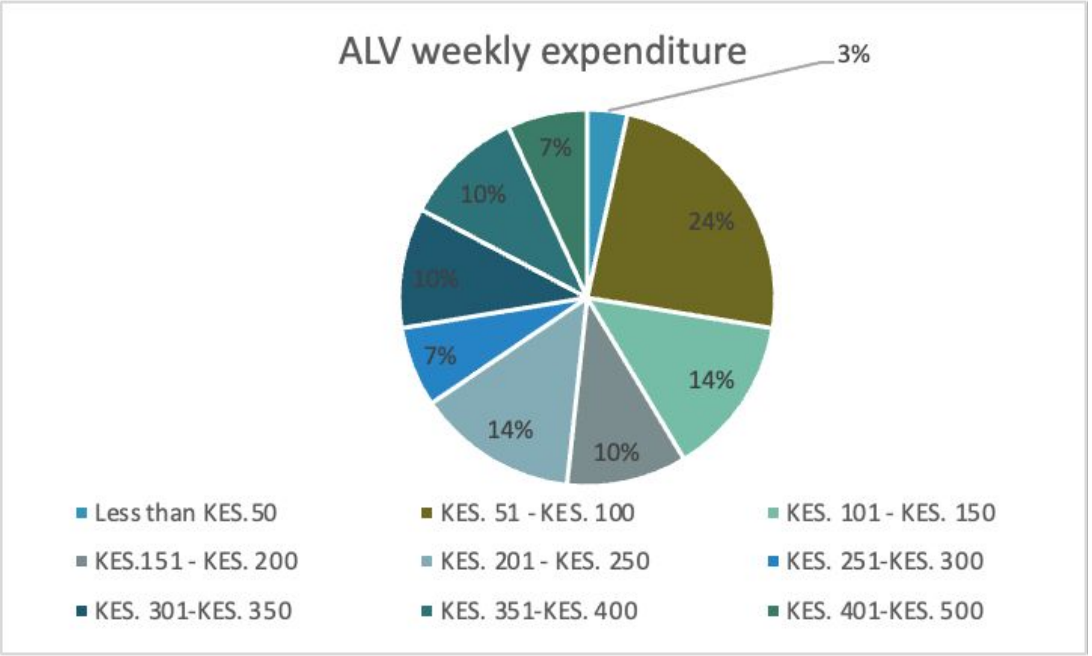
Formal open-air markets	(30%)
Informal street markets /roadside sellers	(29%)
Kiosks/Kibandas	(21%)

Reasons for preferred purchase source: **Freshness** (23%), **Affordable price** (22%), **convenience - distance from home** (20%)

Purchasing: Expenditure

38% of respondents spend **KES. 51-150** (USD 0.1-1) on ALV per week.

49% of respondents purchase 7 or more bunches of ALV in a week, where 1 bunch of ALV can cost anywhere from KES. 5-10 (USD 0.03-0.06).



Consumption

97% of respondents **consume ALV**. They are predominantly consumed for their **nutritional value** by everyone in the household.

- High Consumption: **63%** of respondents include ALV in their diet at least **3 times a week.** This indicates frequent consumption.
- Majority (**64%**) of respondents consume ALV in the evening, i.e. for **dinner**.
- **68%** of respondents consume ALV in a **cooked and fried** form. **32%** of respondents prefer to consume ALV **cooked but steamed**.

Barriers and Enablers To ALV Consumption

Barriers

31% of respondents said that a main hindrance to consuming ALV is **lack of availability. 22%** also mentioned **high price** and **22%** said **lack of good quality** ALV act as barriers to consumption.

Enablers

27% of respondents said that they consume ALV due to its **high nutritional content, 27%** also mentioned that they consume ALV due to **good taste. 16%** said that they consume ALV as it is **easily available**.

97% of respondents said that they consume ALV and **everyone** in the household consumes **ALV**. This reveals a high demand for ALV for various reasons such as **taste** and **nutritional value**.

How Might We Influence Consumption Of ALV?

1. **Leveraging on Nutritional Value of ALV:** Respondents’ have a high level of awareness of the health benefits of consuming ALV. Harnessing this awareness and reinforcing connections between ALV consumption and healthy eating through information campaigns could boost consumption.

2. **Freshness and Taste:** Respondents express a preference for fresh and tasty ALV. Ensuring a higher availability of produce, which meets these consumer standards could be beneficial.

ALV Fortified Porridge

Florence 'Flo': Mama Kienyeji

25 - 34 yrs

Married

KES 30,000 - 39,000

3-4 pp in HH

1-2 children < 18 yrs

Secondary TVET/Diploma

Self - Employed

Work Sector: Trade (wholesale/retail/Mama mboga)

Flo is convinced of the profound nutritional benefits that porridge offers. She firmly believes in its health benefits. This unwavering belief guides her dietary choices and daily routines, reflecting her commitment to her family's well-being. Flo prioritizes meals that contribute to her family's health, embodying traditional values and actively seeking out information on foods that enhance their overall wellness.

Knowledge & Awareness

Beliefs/Myths

Perceived high nutritional value beneficial for self and babies
Belief in aiding bone development and weight gain
+ Belief in preventive health benefits

Sources of Information

➔ Recommended by Friends

Goals, Need & Motivation

Goal

Ensure health of her young children

Need

Increased awareness of nutritional benefits
Lower prices

Motivation

Prevention from illness

Purchasing and Consumption Behaviors

Barriers

Knowledge of ALV fortified porridge

Enablers

➔ Nutritional benefits
➔ Familiarity - childhood staple

Consumption Format

How it's consumed

Buys the powder (flour) to make porridge at home

Consumption Patterns:

Timing and Fluctuations in Product Intake

When children are going to school

Weekly Product Expenditure

KES 200 - 250

Consumption Frequency

1-2 times a week or when someone is unwell

Product Purchase Point

Supermarket, posho mill, cereal shop

Product Preference

Fortified over normal

Planning And Purchasing

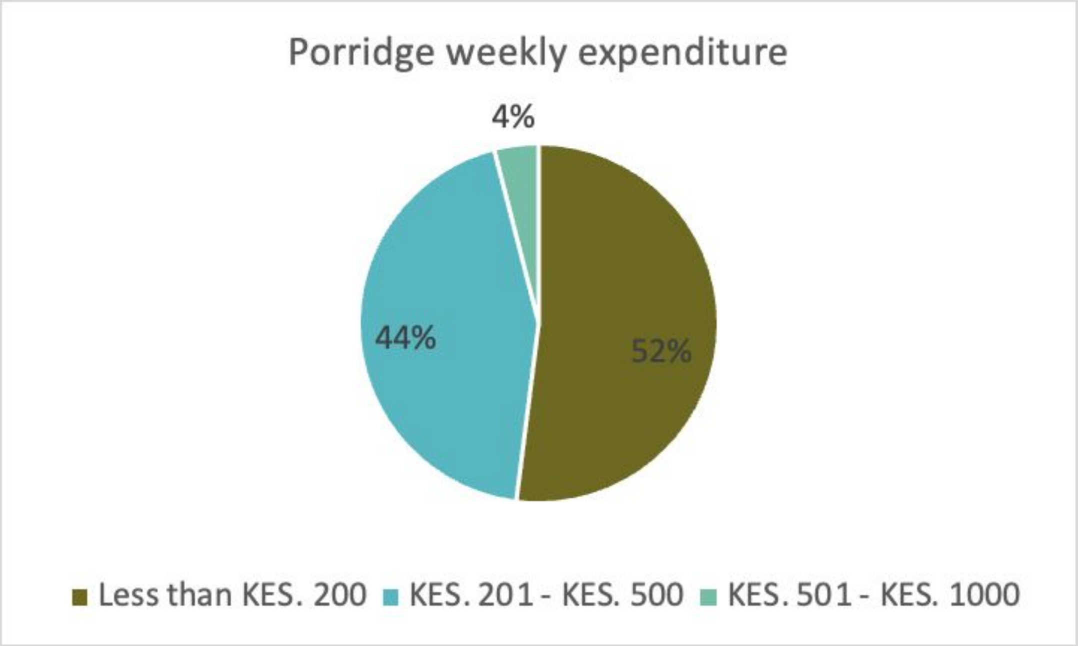
- Key Decision Makers
  - Primary Decision-Makers for self-formulated porridge (porridge flour with arrowroot, amaranth, or other supplements) are **women**. IDIs reveal that women with children are more likely to purchase self-formulated porridge.
  - This could reflect broader trends in household decision-making and **care responsibilities of children** and elderly on women of the household.
- Purchasing and Budgeting Insights
  - **Budget-Conscious Consumers**: 41% of self-formulated porridge consumers **budgeting** for food, indicating consumers conscious about food purchasing decisions.
  - Monthly Budgeting Habits: Half of the consumers plan their expenses on a **monthly** basis, suggesting a potential pattern in purchase frequency and volume.
- Top 3 **purchasing locations for self-formulated porridge flour**:

Cereal Shops	(59%)
Mini mart	(21%)
Kiosk/Kibanda	(11%)

Purchasing: Expenditure

52% of consumers spends **less than KES. 200** (USD 1.3) per week on self-formulated porridge.

74% of those spending on self-formulated porridge have **children** in their household.



Consumption

77% of respondents or their children **consume self-formulated porridge**.

However, IDIs revealed that respondents were unsure about what the porridge was formulated with. When asked whether they consume ALV fortified porridge flour, respondents mentioned **Famila** flour formulated with amaranth (terere), **Soko wimbi** flour and **common porridge flour** from cereal shops, which do not have ALV in them, indicating a lack of knowledge about the product.

Brands: Self-Formulated Porridge Flour

- Famila flour formulated with amaranth seeds (terere)
- Soko wimbi flour
- Self-mix common porridge flour from cereal shops

- Regular Consumption: **89%** of respondents include self-formulated porridge in their diet at least **1-2 times a week.** This indicates regular consumption. **55%** of respondents consume self-formulated porridge 3 or more times a week.

Barriers And Enablers To Consumption

Barriers

Lack of awareness about the product or do not have children.

Enablers

88% said that they consume self-formulated porridge because it has known **nutritional benefits**. **9%** said that they consume because is it **affordable** and **3%** said because it is **recommended by friends, family or healthcare providers.**

Majority half, **89%**, of respondents who consume self-formulated porridge include it in their diet at least 1-2 times a week, highlighting high regular consumption.

Porridge With ALV: Insights from Retailers

Consumer Demographics and Preferences:

- Majority of customers for self-formulated porridge powder are breastfeeding women and those who have health interest due to an ailment or are athlete. Those **buying porridge with ALV are a minority.**
- Those interested in health or advised by doctors constitute the primary market for porridge with ALV.
- Customers over 40 (middle-aged and elderly) prefer self-formulated flour.
- Younger customers below 40 tend to purchase plain porridge flour.

Purchasing Patterns:

- Customers prefer to purchase porridge flour from cereal shops for its freshness and lack of additives.
- Frequency of self-formulated porridge purchases depends on household size.
- Varied purchase intervals (weekly or monthly), but consistent purchasing for those consuming.
- Quantity purchased per week ranges from ¼ kg to 1 kg based on household size and income.
- Convenience and freshness influence purchase decisions.
- Price fluctuation during low production and sand in porridge flour act as barriers.

Self-Formulated Porridge: Insights from Retailers

Knowledge, Awareness and Misconceptions:

- Limited knowledge about ALV-fortified porridge flour.
- Retailers believe that ALV should not be used before cooking porridge to retain nutritional content. They believe that ALV should only be added after porridge is cooked to preserve nutrient loss.
- Retailers also believe that drying ALV leads to a loss of nutritional content. They claim that adding ALV reduces the desirability of porridge since ALV can alter its color after cooking.
- Retailers perceive that ALV can only be added in porridge in small amounts as they make the porridge too light. For this reason seeds are preferred.
- Further misconceptions include:
  - Beliefs that porridge causes weight gain in women.
  - Porridge is only for children and the elderly.
  - Consuming porridge is associated with rural areas.

Awareness primarily spread through word of mouth (friends, relatives, neighbors) or recommendations by health professional.

How Might We Influence Consumption Of ALV Fortified Porridge?

1. **Desire for fresh, nutritious ALV, with variety:** Respondents expressed a preference for fresh ALV, which is perceived to be higher in nutritional content. Raising awareness about ALV fortified porridge and its nutritional benefits could boost confidence for the product. Furthermore, use gain framed messages which emphasise that consumption of ALV fortified porridge increases nutrition in children.

2. **Target women with children:** Target young mothers who purchase porridge floor for their children. Porridge is a staple amongst many households, especially due to its nutritional value. Hence, building upon existing consumption habits, plus a desire for nutritious food for children, could improve consumption.

3. **Support Distribution Channels:** Strengthen and increase distribution across consumers preferred place of purchase for porridge. These are cereal shops and mini marts. This can raise awareness about new semi-processed products at locations that are frequented by the target consumer.

4. **Competitive Pricing:** Consumers are price conscious. Hence, developing competitive pricing, which fits within consumers' current budget for the product is important. Quantities can be reduced to ensure affordable products.

Semi-Processed Products

Sources of information, product split across locations, & targeted behaviours.

Sources of Information

Understanding where respondents get information from about semi-processed products is integral to developing informed and optimised campaigns when looking to increase product uptake. Understanding who respondents trust is key in this endeavour. So where do respondents get information from about semi-processed products?

Source of information

- **Mango juice:** Supermarkets/retail shops, advertisements, friends/family, internet.
- **Tomato paste:** Supermarket displays, advertisements, family/friends
- **ALV fortified PF:** Recommendations from friends/family, cereal shops, supermarkets.

"Word of mouth from friends and family would be more reliable. Because it's coming from people who are already using it."

Female, 34 years old, Embakasi.

Further Behavioral Science Insights To Increase Uptake of Semi-Processed Products

Nudge
Use subtle cues or prompts to guide consumer behavior toward healthier or more cost-effective choices.

Framing
Present product information to emphasizes positive impact on daily life/long-term benefits, aligning with values & priorities of low-income consumers.

Default Bias
Leverage existing default choices, such as preferred places of purchase, such that consumers experience least cognitive load when buying new, semi-processed products.

Loss Aversion
Emphasize potential losses in marketing messages to motivate action, such as highlighting limited-time offers, exclusive deals, or nutritional losses..

Social Proof
Showcase testimonials or success stories from individuals within the community to build trust & credibility, tapping into the power of social influence.

Simplification
Simplify product information, pricing structures, and purchasing processes to make decisions more manageable for consumers with limited resources.

Discount Framing
Present discounts in absolute terms rather than relative terms to highlight tangible savings & appeal to the budget-conscious nature of low-income consumers.

Cognitive Bias
Cognitive biases such as anchoring, where the first piece of information presented influences subsequent decisions. Tailor marketing messages accordingly.

Gamification
Incorporate elements of gamification to make the product or purchasing experience more engaging and enjoyable, encouraging repeat behavior.

Retailers

Snapshot of retailers

Retailer Demographic Characteristics

Age
Retailer ages vary widely (20-50 years) with an average age of 33 years

Gender
10 females, 7 males

Education
Secondary level -8/17
Tertiary education(college,University)-9/17

Length in retail business
Varies widely (1-23 years) with an average length of 5 years in the retail business

Mango juice

Retailers are predominantly female and aged between 21 and 35 years

Type: Streetside stalls, juice shops, supermarkets

Tomato paste

Retailers had an age range of 24 to 47 years and displayed a more balanced gender distribution
Type: Supermarket, retail shop, informal street markets/roadside seller

Fortified Porridge

Broad demographic spectrum, 20 to 50 years and a notable skew towards female representation.

Type: Cereal shop, supermarket, nearby shop/kiosk

Purchasing Patterns From Retailers' Perspective

Tomato Paste Buying Habits

Not a daily necessity, purchased a few times a week to two to three times per week.

Customers opt for small quantities due to perishability and recipe considerations.

Mango Juice Purchases

Bought frequently, with daily or two to three times a week as common buying patterns.

Fortified Porridge Buying Patterns

Varies in quantity, with some customers buying small amounts and others making bulk purchases.

"It depends on the size. The small one, at least, some people buy it twice a week. Depending on how you cook it. But if you cook it daily, you'll go for the bigger brand. It lasts almost a month or two or three weeks. Depending on how you cook it."
32 Years, Male - Retail Shop

Some people buy three times a day, five times a day. It depends on the day."
35 years, Female - Juice Kiosk

Common Brands Stocked

Mango Juice

- Afia
- Delmonte
- Pick 'n' Peel
- Suntop
- Pep

Tomato Paste

- Peptang
- Zesta**
- Tam tam
- Kenylon

Fortified Porridge

- Common flour in cereal shops
- Famila
- Soko wimbi

"I usually stock Peptang, Del Monte, and Suntop customers love these ones"

Female, 28 years old, fruit vendor, Roysambu.

"We primarily stock tam tam tomato paste. Customers have told us that it's thicker in consistency, and they prefer it for that reason."

Male, 44 years old, wholesale shop, Kasarani.

Price Fluctuations And Its Effect

- For both mango juice and tomato paste, customers continue to purchase despite price fluctuations while for fortified porridge flour, customers are quite sensitive to price fluctuations.

- Fortified porridge flour retailers see reduced purchases when the prices go up.

"Some clients get disappointed, others accept that with the cost of living and with the increase of every other commodity in the market, they understand it when the price fluctuates, especially when it goes high.

Male, 32 years old, retail shop, Embakasi

Of course, a price increase will affect their purchasing power. A decrease or the same price will not be affected.

Male, 32 years old hawker, Roysambu.

Demand Fluctuations

Mango Juice Sales

fresh fruits are in season

- Brisk sales during festive seasons like Christmas.
- Increased demand when school children are on vacation.

Tomato Paste Demand

- Consistent demand throughout the year.
- December shows a spike due to festive season consumption.
- Overall variations remain relatively steady.

Fortified Porridge Demand

- Heightened demand during school holidays

"Prices and seasons of the mango fruits. When the mango fruits are in season the demand for mango juice goes down as well as when the prices are high many customers opt not to buy."

35 years, Female- Juice Kiosk, Roysambu

"First of all, you know, you cannot stay without food. So, people have to cook daily. That means they use tomato paste a lot."

24 years, Male - Wholesale shop, Embakasi

Conclusion

Key Takeaways

Low income households in Nairobi earn a **monthly income** between **USD 130-454.**

There are approximately **3.4M low income consumers** (LIC) in Nairobi (65.9% of the total population in Nairobi).

LIC median monthly income is KES 30,000 (USD 195). They **spend 38% of their income on food** of which **nearly half - 48%** goes to **fruit and vegetables**.

Semi-processed products are consumed as they are perceived to be **nutritious, convenient, tasty and affordable**.

Women are the **principal decision makers** in households on what FV is purchased and consumed.

Mango juice is the highest consumed semi-processed (82%), followed by plain porridge (77%) and **tomato paste** at the **lowest** (63%).

LIC consumers **perceive existing semi-processed products** to be **less nutritious** (with additives and chemicals) than fresh produce.

Some consumers & retailers believe **cooking ALV with porridge** loses ALVs' nutritional benefits.

How Does Our Research Fit In With The Initial Hypotheses?

Quality

Quality of fresh and semi-processed FV is a priority for respondents.

Quality was also a reason for respondents’ preference for fresh over semi-processed FV.

Respondents also determine the source of purchasing FV based on quality.

Affordability

Affordability determines where & how much FV is purchased by respondents. It’s also considered when deciding where to purchase from.

A barrier to consumption of mango juice & tomato paste was affordability.

However, this was not the case for fortified porridge.

Availability

Consumption patterns depended on the availability of FV.

Availability was a barrier to consumption for all semi-processed products in our target value chain.

Understanding barriers to availability from the supply side & knowledge and awareness can boost consumption.

How Does Our Research Fit In With The Initial Hypotheses?

Access

Access (convenience and distance from the house) were considerations when purchasing tomatoes and ALV.

However, this was not a high priority when purchasing mangoes.

This might be the case as tomatoes & ALV are consumed on a regular basis & mangoes are seasonally consumed.

Time

Respondents said that they valued the time saved in cooking/preparing meals when using tomato paste.

However, this was not a consideration for the other semi-processed products in our target value chain.

Leveraging on time efficiency will be key for marketing tomato paste.

Taste

Taste of semi-processed products is important for respondents.

Respondents reveal a preference for those products that taste like fresh & natural FV. This is especially the case for mango juice and tomato paste.

Taste is less important for consumers of fortified porridge however, according to retailers, consumers are concerned about appearance, specifically colour.

Further Insights

1. **Awareness**
    a. Awareness about semi-processed products is moderate. Though consumers are aware of mango juice and tomato paste, knowledge about what ALV fortified porridge is low. Furthermore, semi-processed products are perceived to be less nutritious than fresh produce, which influences consumption patterns.

1. **Women's involvement and empowerment**
    b. Women play a pivotal role as the primary decision-makers, purchasers and preparers of fruits and vegetables, including our target value chains. This reveals the significant importance they play in determining and maintaining household nutrition. Ensuring awareness, financial empowerment, convenience and support could improve their ability to make conscious decisions on FV purchasing and consumption at a household level.

1. **Retailers**
    c. Suppliers maintain a consistent supply of products, as dictated by consumer demand and preferences. They are key players in raising awareness and access to new semi-processed products for consumers.

Recommendations

1

Semi-processed products for LICs should be **packaged in small quantities** to match their FV expenditure budgets.

2

LICs are price sensitive, hence, products should be priced **affordably** within their budget allocation for FV.

3

Semi-processed products should be **accessible** at **minimarts, shops/dukas, juice shops, cereal shops (porridge), and kibandas/street vendors.**

4

Marketing campaigns should **target women & mothers,** with a focus on **nutritional benefits, time/ease of cooking, affordability and taste.**

Contact us for more information

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