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 (HHs) 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.

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.

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 food loss happen post-harvest, when there is high supply and a preference for high visually appealing produce. This has a negative economic, social, and environmental impact. While cost of living is increasing, food loss reduces income by at least 15% for the smallholder farmers as well as for 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 targets 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 greater access to supplementary safe, affordable and nutritious products** for consumption.

Approach

Data collection and analysis for consumer purchasing behavior

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.

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 purchasing 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.

Implementation Overview

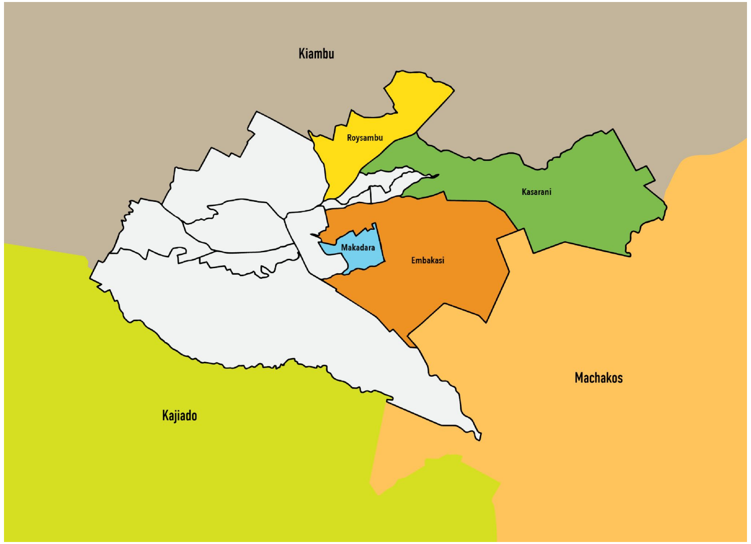
We implemented **random purposive sampling**, across the 4 target locations, to recruit eligible respondents for this study. We used a pre-designed screener questionnaire to select respondents. We focused on those who consume fruits and vegetables.

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

In Depth Interviews (IDIs) - 15 consumers + 15 Retailers

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

- Embakasi
- Kasarani
- Roysambu
- Makadara



Map of Nairobi with research locations highlighted.

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

Note: We excluded slum areas which fall within the above locations.

Research Limitations

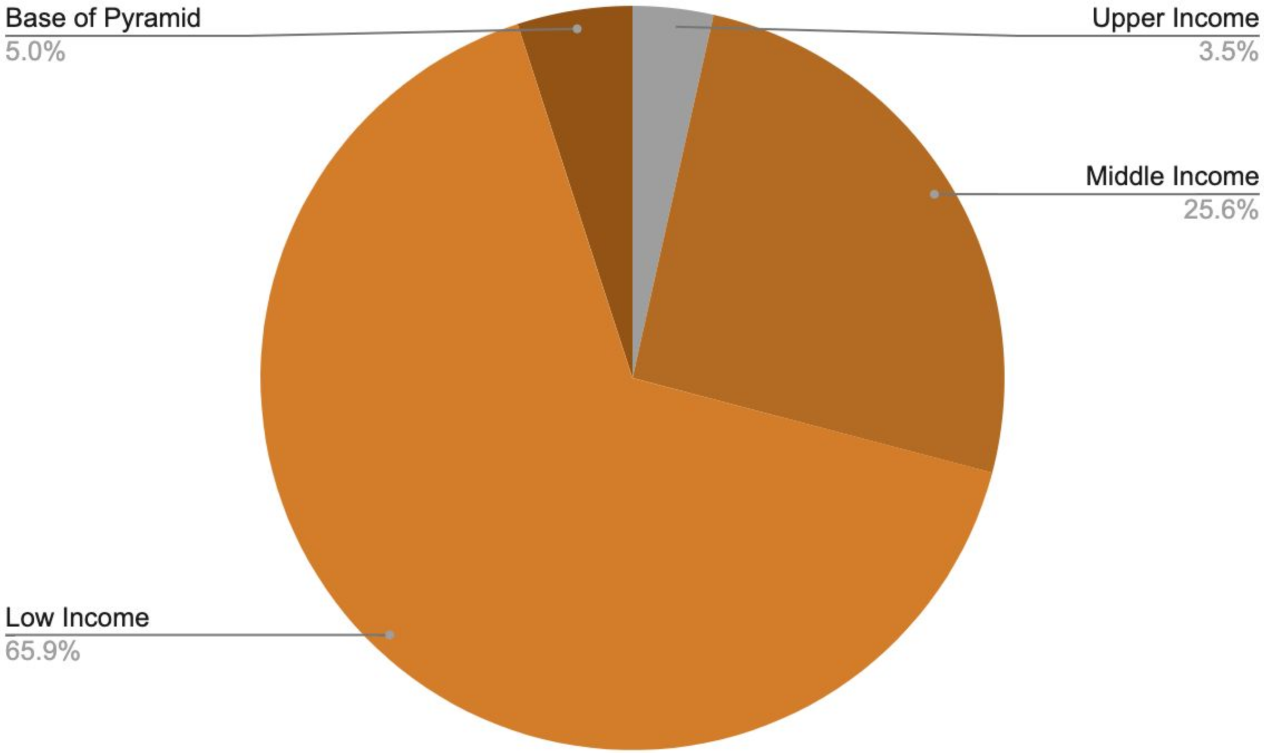
- Due to a low sample size, our findings should not be interpreted as being representative of the population of Nairobi, Kenya.
- Data is skewed towards self-employed women, as these women were more willing to participate in the study due to their flexible working hours.

Our Target Consumer

Low Income Consumers

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

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



Busara Center For

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.

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** and **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.**

Analysis

Insights from qualitative and quantitative data

Who Are The Respondents?

Surveys + IDIs

Age
Majority of the respondents are youth between the ages of 25-34.

Gender
Majority (over 50%) are female

Location
Majority live in Embakasi, followed by Makadara, Kasarani, Roysambu

Education
Most are secondary school educated, followed by TVET/Diploma

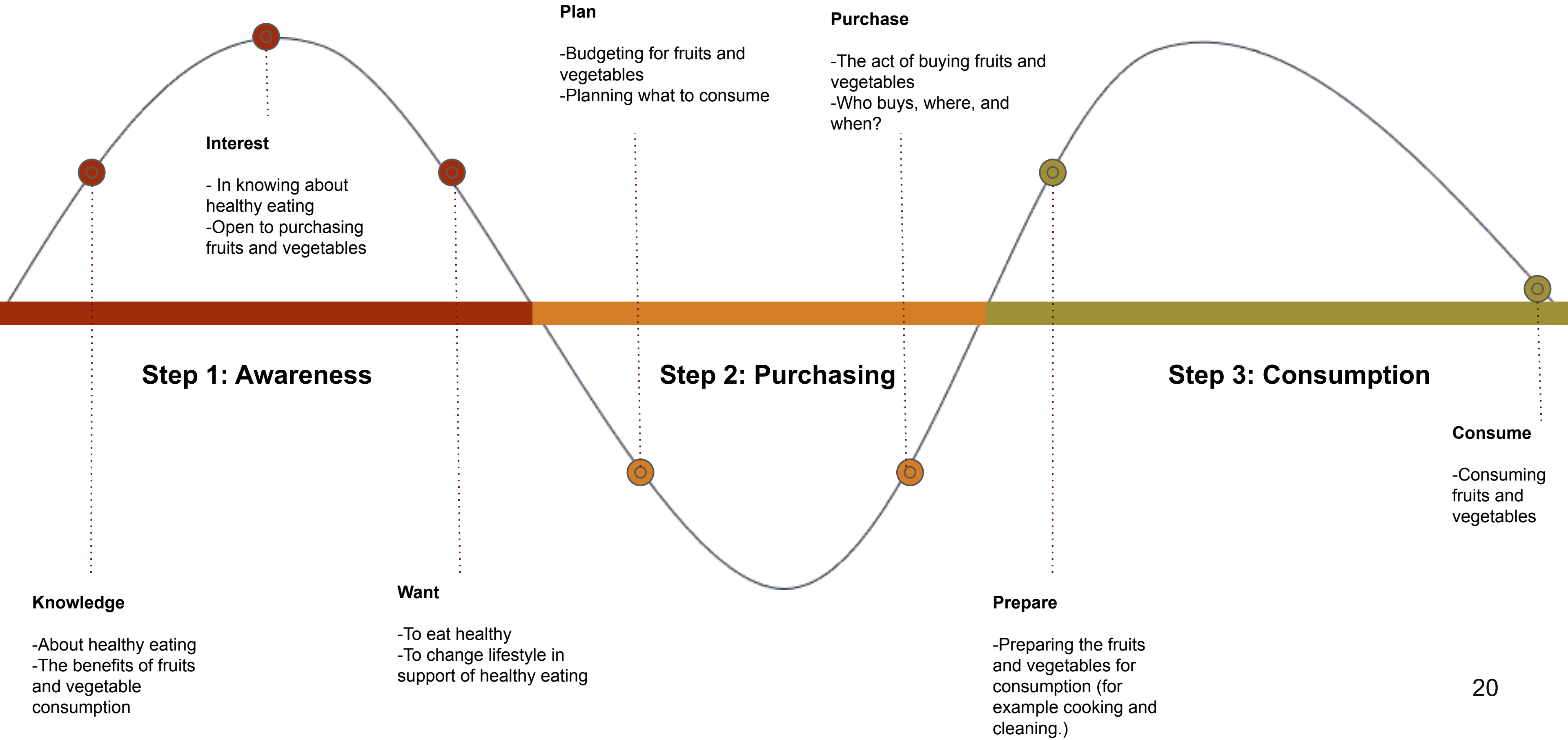
Income
Majority of the respondents have an income between KES 20,000-50,000 (USD 130-325)

Marital status & children
Majority of the respondents are married and have an average of 2 children.

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

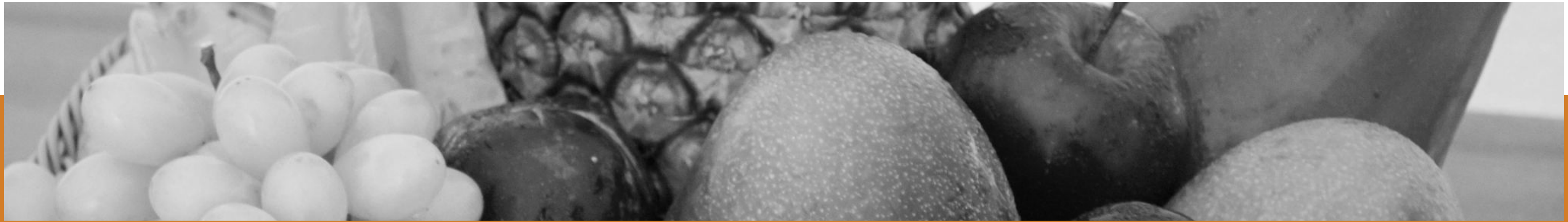
Employment
Majority are self-employed. 80% are in trade.

Consumer Journey Map



General Purchasing And Consumption Behaviors

How do consumers budget, purchase and consume FV?



Who Is The Principal Decision-Maker For Purchasing FV in HHs?

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 what FV to purchase 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

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.

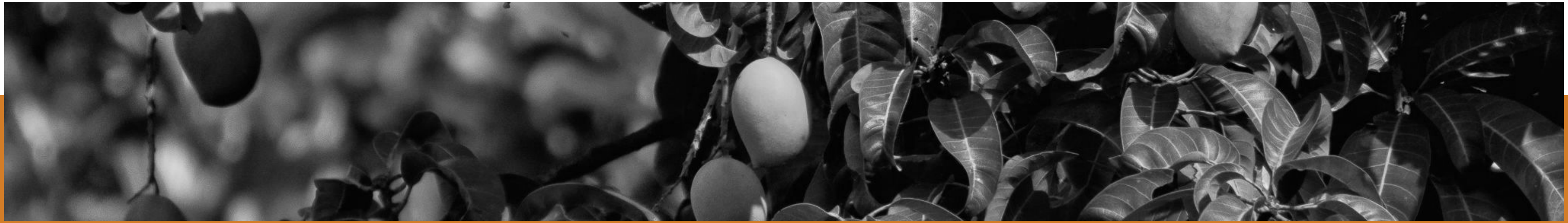
- **Budgeting increases with increased income categories:** All respondents with income ranges between KES. 50,000-70,000 said they budget. The highest income bracket for those who do not budget is KES. 40,000-50,000.

"For fruits, I give them like KES. 300. Vegetables, I give them like KES. 500 per week -

Female, 30 years old, Embakasi

Specific Value Chains

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



Mango Juice Summary

Women are the principal purchaser of mango juice, however children and the primary consumers.

Mango juice is predominantly bought from:

- Informal street markets/roadside sellers (31%)
- Juice parlours (26%)
- Mini mart (22%)

82% of respondents **consume mango juice**. **Majority** of respondents spend KES. 71-300(USD 0.5-2) on mango juice in a week. They prefer to purchase mango juice in **1 liter packs**. These cost approximately **KES. 120-250 (USD 0.8-1.6)**depending on the brand.

Myths about mango consumption:

Despite high consumption rates, misconceptions still exist about mango consumption, especially that mangoes cause sickness in children if consumed in colder months.

Barriers To Consumption

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 To Consumption

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.**

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. **Enhance 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.

Tomato Paste Summary

Tomatoes are a staple in Kenyan cooking. **Women** are the principal purchaser of tomato paste, since they are primarily in charge of cooking and preparing meals in the household. .

Tomato paste is predominantly bought from:

- Mini mart (59%)
- Micro retail shop (28%)
- Informal street markets/roadside sellers (8%)

63% of respondents **consume tomato paste**. Consumers prefer purchasing tomato paste in small quantities as they report tomato paste to spoil soon after opening. These are 50 grams for KES. 30-50 (USD 0.2-0.3) or 100 grams KES. 70-75 (USD 0.5). Hence, majority spending **KES. 200 (USD 1.3) buy an average of 4 sachets or 2 tins of 100 grams per week.**

Knowledge about tomatoes & paste: Majority of respondents were unaware of the benefits/risks of consuming tomatoes. Many also assumed that tomato paste lacked essential nutrients and was detrimental for health due to lack of freshness.

Barriers To Consumption

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 To Consumption

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.**

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. **Broaden Market Reach through Diversified Distribution:** Increase distribution across consumers preferred place of purchase for tomato paste: mini marts and micro retail shops to meet the demand created. 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.

Self-Formulated Porridge Summary

Porridge is widely consumed in households by children and elderly. Women, elderly and those recommended by healthcare professionals are the primary target purchaser. However, ALV fortified porridge is uncommon.

Porridge is predominantly bought from:

- Cereal shops (59%)
- Mini mart (21%)
- Kiosk/kibanda (11%)

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

Limited knowledge about ALV fortified porridge: Retailers believe that ALV should not be used in uncooked porridge as it loses nutritional content when boiled with porridge powder. They believe that ALV should only be added after porridge is cooked to retain nutrition.

Barriers To Consumption

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

Enablers To Consumption

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.**

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.

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.

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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