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KENYA HORTICULTURE COMPETITIVENESS PROJECT (KHCP)

FINAL REPORT: HORTICULTURE RETAIL AUDIT

JUNE 2011 – MARCH 2012



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ACKNOWLEDGEMENT AND DISCLAIMER

The following assessment is a collaborative work from the United States Agency for International Development (USAID) and the Kenya Horticulture Competitiveness Project (KHCP) to provide information on the current state of Kenya's fruit and vegetable market and determine existing strengths and potential. The information gathered will guide consumption campaigns intended to stimulate production and demand for fruits and vegetables.

We would like to thank USAID-KHCP for spearheading the study and TNS-RMS for facilitating data collection and analysis.

We are especially grateful to USAID for their financial support. Every effort was made to accurately report on the information and data provided by the various respondents. The views expressed in this report do not reflect those of USAID or the US government.

1. EXECUTIVE SUMMARY

Retail overview

In the 10-month reporting period, volumes have remained relatively stable while retail values have increased as a result of inflationary effect. The rate of inflation increased by 7.7 percent in March 2012, compared to June 2011 (Source: KNBS 2012).

Traders transacted 2.72 million metric tons (MT) of fruits and vegetables worth Ksh 137.1 billion Kenyan shillings (Ksh), or \$1.5 billion. Fruits constituted 27 percent of the volume (740,625 MT) worth Ksh 40.7 billion (\$451 million), and vegetables constituted 73 percent of the volume worth Ksh 96.5 billion (\$1.1 billion).

Regionally

The Eastern region consistently transacted the highest retail volumes for fresh fruits and vegetables with 753,361 MT representing 28 percent market share, followed by the Nairobi region with 23 percent (617,556 MT). This translated to retail business worth Ksh 32.7 billion (\$362.2 million) and Ksh 31.4 billion (\$348.2 million) for the Eastern and Nairobi regions respectively.

By channels/outlets

Hawkers moved the highest retail volumes with 35 percent market share (959,124 MT), valued at Ksh 49.4 billion (\$547.4 million).

Fruits trend

- Both ripe and cooking bananas constituted 80 percent (595,973 MT) of the total fruit sales valued at Ksh 30 billion (\$380 million) with monthly consumption averages of 59,600 MT, most of which was ripe bananas (54 percent).
- Volumes of passion fruits sales at retail outlets were minimal with 2 percent of total fruit sales. The low monthly average of 1,142 MT was attributed to shortage in supply. Fifty-five percent of the retail volumes pass through hawkers, an indication most of the trades are informal.
- Regionally, Nairobi lead in fruits consumption with 30 percent of total consumption (219,667 MT) at retail outlets, whereas the Western region had the least volume at 2 percent (14,154 MT), possibly due to availability at household levels.
- Ripe bananas were leading in all provinces except in the Western region, where cooking bananas led.
- The small contribution of supermarkets (1 percent) is notable and an indication they serve only a small percentage of the population.

Vegetables trend

- Vegetable volumes were stable but all prices increased due to weather patterns that led to low supply from September to March and background inflation.
- Potatoes represented the largest share in volume (636,919 MT), whereas tomatoes had the biggest share in value at Ksh 39.4 billion (\$436.4 million) as a result of high retail prices, which nearly doubled in the last 10 months.
- Cabbage consumption represented 19 percent of retail sales, whereas *sukuma wiki* (kale) represented 16 percent (380 million MT and 317 million MT respectively). This can be attributed to easy transportation and slow perishability of cabbages compared to *sukuma wiki*.

- Like fruits, most vegetable volumes consumed pass through the local market stalls (dedicated hawkers), neighborhood kiosks, small *Dukas*, and green grocers.
- Vegetable prices increased in the last four months due to the dry season, an indication of reliance on rainfall for production.

Retailer diagnostics and challenges

Fruits and vegetable traders made high trade margins of 20 to 35 percent. This indicates that fruits and vegetables are a profitable category, especially compared to manufactured goods which yield profits less than 25 percent. It is important to note, however, that the observed increases in fruits margins could be due to low supply in the market.

Despite the recent increase of traders who claim to source fruits and vegetables directly from farms, the majority of traders source from produce markets (50 percent) and agents/middlemen/brokers (35 percent). Traders source 10 percent directly from the farm and the remaining 5 percent from self-service stores.

Retailers claim to experience numerous problems, including:

- Price fluctuations mainly due to seasonality and lack of market information among traders which allows them to demand higher prices (24 percent).
- Security issues associated with overnight storage (24 percent).
- Transportation limitations, both farm-to-market and intra-urban due to poor feeder roads (11 percent).
- Inadequate capital to invest (8 percent).
- Meeting customer demands with regard to supply consistency and product quality and freshness.

The study shows that continued collection and analysis of market data can be used to:

- Identify and inform regional opportunities.
- Identify improvements for the domestic wholesale market infrastructures.
- Develop proper planning and policy mechanisms.

2. BACKGROUND

The Kenya Horticulture Competitiveness Project (KHCP) is a Feed the Future initiative funded by the United States Agency for International Development (USAID) and implemented by Fintrac Inc., a leading US agribusiness consulting company. USAID-KHCP is designed to enhance food security and increase incomes for smallholder farmers while integrating nutrition, gender, and youth in the horticulture industry.

USAID-KHCP value chain interventions to improve domestic market potential for smallholder producers are being undertaken in collaboration with horticulture industry stakeholders. In line with the government's Agriculture Sector Development Strategy (ASDS), these smallholder producers need to develop a business approach to maintain and grow their market share. However, the domestic market faces numerous challenges such as:

- Inadequate domestic market information for smallholders, including insufficient data on domestic market flows and distribution trends for horticultural products.
- Inadequate strategies for enhancing domestic consumption.
- Lack of awareness on the use of available data by smallholder farmers.
- Inadequate institutional capacity to collate and track trends for retail, wholesale, and imports into the domestic markets.
- Unutilized business opportunities.
- Inadequate planning mechanisms for production and marketing of fresh produce.

USAID-KHCP contracted TNS-RMS, a leading research organization in Africa, to undertake a horticulture retail audit study across both urban and rural areas of Kenya. The retail audit measures the market off-take of a particular category of consumables. It also measures volume sales and value sales, regional trends by value and volumes, existing stock, retail price per unit, and distribution or penetration of a product. A sample is normally audited and extrapolated to represent the total market. This retail audit involves observation (physical stock counting) and a number of open-ended questions asked to retailers to clarify or expound upon data collated, especially regarding various challenges and constraints and possible interventions. The audit measures the market flow of the produce by volume and value, consumption trends, and constraints and strategies for enhancing domestic consumption of the following products: passion fruits, mangoes, bananas, potatoes, sweet potatoes, cabbages, tomatoes, kale, and green maize.

3. STUDY OBJECTIVES AND SCOPE OF WORK

The overall objectives of the retail audit were to:

- Estimate the market size in volume and value.
- Identify the consumption trends in the country within the region, by volume and value.
- Identify key channel outlets and monitor importance.
- Identify key constraints facing the domestic retail market and specific interventions needed.
- Monitor retail average prices per kilogram over time.

4. METHODOLOGY & APPROACH

A random sample of 1,652 retail outlets was selected using a stratified quota sampling system across the country, representing a universe of 95,600 outlets (based on a TNS-RMS 2007 retail census). The data was collected across selected channel types: supermarkets, green grocers, small and large *Dukas*, kiosks, and hawkers. All Kenyan provinces were audited except the North Eastern, because of security, sparse population, and logistic factors that could have affected the monitoring of the project in that area.

TNS-RMS field interviewers visited seven provinces and conducted interviews that were randomly allocated using their 2007 retail census data. The project sample breakdown was as follows:

Figure 1: Sample breakdown

Reporting					
Region	Channel	Density	Universe	Sample	SE
Total	All	All	95,600	1652	1.2%
Nairobi	All	All	17365	282	3.0%
Eastern	All	All	24974	303	2.9%
Rift Valley	All	All	15261	302	2.9%
Western	All	All	4869	109	4.8%
Nyanza	All	All	10408	168	3.8%
Central	All	All	14080	274	3.0%
Coast	All	All	8643	214	3.4%
All	Large Duka	All	413	42	7.4%
All	Small Duka	All	3729	125	4.4%
All	Hawker (At Dedicated Site)	All	45098	636	2.0%
All	Green Grocers	All	39773	645	2.0%
All	Normal Kiosks	All	6536	183	3.7%
All	Self Service (Supermarkets/Mini markets)	All	51	21	8.7%
All	All	Urban	47,240	1,175	1.4%
All	All	Rural	48,360	477	2.3%

The following distribution channels were identified, defined, and audited:

- **Supermarkets/self-service stores** – store where the shopper can do all his or her shopping for groceries under one roof; has more than two check-out counters.
- **Large *Duka*** – store that sells its products to consumers over the counter and has more than one attendant during the normal working hours.
- **Small *Duka*** – same as large *Duka*, but has only one attendant during the normal working hours.
- **Kiosks** – non-permanent structure that handles products over the counter; the products are either branded or non-branded.
- **Green grocers** – outlets which mainly sell fresh produce.
- **Hawker** – a dedicated or mobile vendor of merchandise; only dedicated hawkers were part of the assessment.

Figure 2: Channel types

Market stalls



Supermarkets



Green Grocers



The outlets visited during the study were randomly selected but with a focus on green grocers and hawkers at dedicated sites because they represent an important channel for the category.

The key produce categories that were of importance are:

Fruits

- Cooking bananas
- Ripe bananas
- Mangoes
- Passion fruits

Vegetables

- Tomatoes
- Cabbages
- *Sukuma wiki*
- Sweet potatoes
- Irish potatoes
- Green maize (not covered in this report)

The project was divided into two phases:

1. Retailer satisfaction study, which was carried out quarterly.
2. Retail audit, which was carried out monthly.

From the retail study we were able to measure the following by category, produce, regions, and channels:

1. Volumes traded through the retail outlets
2. Market share
3. Numeric distribution
4. Stock cover days and out of stock days
5. Percentage of volume by channel

The sales volume for the retail audit was calculated as shown below:

STOCK FROM PREVIOUS AUDIT (as per *)	150
+ PURCHASES FROM TRADE	+ 600
- STOCK AT END OF AUDIT*	- 250
CONSUMER SALES FROM LAST TO CURRENT AUDIT	500

- The stocks and purchases were collected for all vendors and used to set unit and sales volumes which was then extrapolated to generate volumes sold across the market.
- Sales value projections were made using selling prices.
- Same outlets were visited every month forming a panel of outlets.
- The study was executed using pen and paper personal interviews with the retailers.

5. OVERALL MARKET FINDINGS

At the end of the 10-month audit, the country consumed 2.72 million MT of fruits and vegetables, estimated at Ksh 137.1 billion (\$1.5 billion). Of the total, 73 percent (1.98 million MT) were vegetables and 27 percent (740,625 MT) were fruits. The market has been experiencing relatively stable consumption of fruits and vegetables, but with gradual increase in value (prices) over time.

In consideration to the value, in the month of August, vegetables generated Ksh 8.4 billion (\$90.8 million) whereas fruits generated Ksh 3.7 billion (\$40.3 million). This was a drop of about 14 percent compared to June levels. Volume decline in September was due to increased inflation and the value increases illustrate inflationary effect in the country at the time.

Figure 3: Total market overview sales in MT (June 11 to March 12)

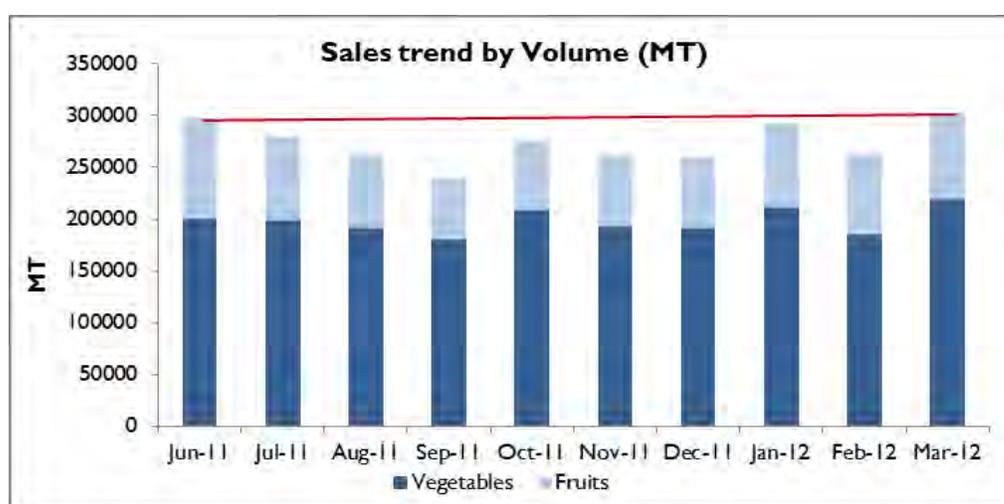
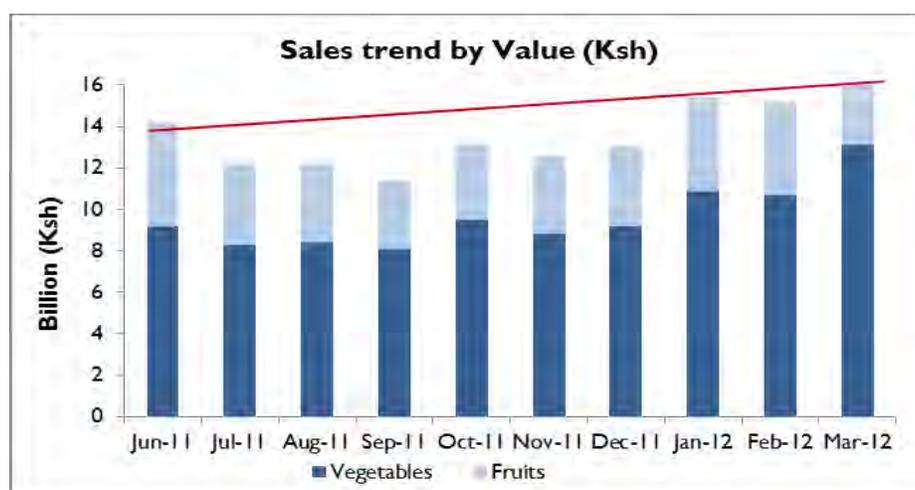


Table 1: Total market overview sales volume (MT)

Type	Jun-11	Jul-11	Aug-11	Sep-11	Oct-11	Nov-11	Dec-11	Jan-12	Feb-12	Mar-12	Total
Vegetables	200,892	199,347	191,881	180,787	209,090	192,610	191,616	212,141	185,876	219,426	1,983,667
Fruits	96,382	80,390	68,764	57,597	66,056	67,415	67,295	79,412	75,411	81,902	740,625
Total	297,275	279,737	260,646	238,384	275,146	260,026	258,911	291,553	261,287	301,328	2,724,291

Table 2: Total market overview sales value (billion Ksh)

Type	Jun-11	Jul-11	Aug-11	Sep-11	Oct-11	Nov-11	Dec-11	Jan-12	Feb-12	Mar-12	Total
Vegetables	9.2	8.3	8.4	8.1	9.5	8.8	9.2	10.9	10.7	13.2	96.4
Fruits	5.0	3.9	3.7	3.3	3.6	3.7	3.8	4.5	4.4	4.8	40.7
Total	14.2	12.2	12.2	11.4	13.1	12.5	13.0	15.4	15.2	17.9	137.1

Figure 4: Total market overview sales value (billion Ksh)**Table 3: Comparison of production and annual retail consumption**

Crop	2011		Variance	% Variance
	Production	Estimated Retail Consumption		
	Qty (MT)	Qty (MT)		
Banana	1,197,988	715,167	482,821	-40
Mangoes	636,585	159,877	476,707	-75
Passion fruit	53,929	13,705	40,224	-75
Irish potatoes	2,365,263	764,302	1,600,961	-68
Tomatoes	407,374	733,701	(326,327)	+80
Cabbages	599,625	455,894	143,732	-24
Kales	352,491	380,280	(27,789)	+8
Sweet potatoes	300,267	21,854	278,413	-93
Green maize	5,114	24,368	(19,254)	+378
Total	5,918,636	3,269,149	2,649,487	-45%

Source of production data: Horticulture validated report 2011, HCDA

Prior to this audit, the only available data related to national consumption of fresh produce were the annual production figures compiled by the MOA. Table 3 compares these production figures with the annualized estimation of retail sales. Overall, only about half of total production appears to have reached the types of retail outlet included in the survey. Although these variances must be treated cautiously since the production data is subject to many sources of error, they provide some useful indicators. Bananas, the most prevalent fruit in Kenya, are produced in abundance throughout the year and about 60 percent apparently goes through the formal retail trade. The country produces about 2.4 million MT of potatoes, but only 32 percent go through the retail channels, with much of the remaining 67 percent presumably bought directly by the food service industry (i.e. hotels, restaurants, etc.) or processed into crisps and chips. The most surprising variance is that tomato retail sales seem to exceed domestic production by 80%. Although some of this is due to imports, there is also a strong possibility that tomato production figures have been significantly underestimated. Only a small proportion, less than 10 percent, of sweet potato went through the formal retailers surveyed. These findings provide the first quantitative indications of market segregation according to specific fruits and vegetables and will be useful in future for planning marketing strategies or promoting specific products such as sweet potato.

6. FRUITS MARKET FINDINGS

In the fruits category, we measured cooking bananas, ripe bananas, mangoes, and passion fruits. The market has depicted a stable volume in the consumption of fruits from June 2011 to March 2012. Over the 10 months, ripe bananas made up the bulk of the fruit sales (397,483 MT valued at Ksh 20.5 billion or \$227 million) followed by cooking bananas (198,490 MT valued at Ksh 10 billion or \$110.9 million). Mango sales volume was 133,231 MT valued at Ksh 9.0 billion or \$100.1 million. The low sales reported in September 2011 were attributed to seasonality.

Table 4: Fruits market sales volume (MT)

Type	Jun-11	Jul-11	Aug-11	Sep-11	Oct-11	Nov-11	Dec-11	Jan-12	Feb-12	Mar-12	Totals
Ripe Banana	45,706	41,255	37,313	34,091	38,459	36,861	37,676	43,072	37,949	45,102	397,483
Cooking Banana	26,069	20,297	19,089	17,975	20,607	20,454	17,651	19,528	17,163	19,656	198,490
Mangoes	22,839	18,214	11,294	4,464	5,913	8,607	10,423	15,629	19,539	16,310	133,231
Passion Fruit	1,768	625	1,068	1,067	1,078	1,493	1,545	1,183	760	835	11,421
Total fruit	96,382	80,390	68,764	57,597	66,056	67,415	67,295	79,412	75,411	81,902	740,625

Figure 5: Fruits market sales trend (MT)

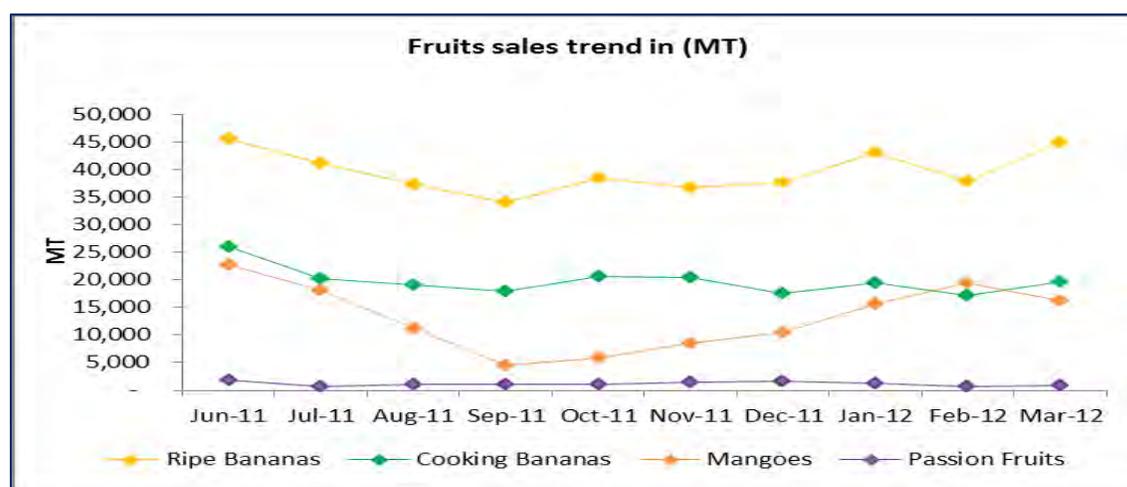


Table 5: Fruits market sales value (Ksh)

Total Products - Absolute value in millions (Ksh)											
Products	Jun-11	Jul-11	Aug-11	Sep-11	Oct-11	Nov-11	Dec-11	Jan-12	Feb-12	Mar-12	Totals
Ripe Banana	2,178	1,870	1,904	1,738	1,872	1,914	2,001	2,296	2,158	2,535	20,466
Cooking Banana	1,290	931	958	898	1,002	999	901	996	947	1,077	9,998
Mango	1,412	1,026	782	513	620	604	730	1,024	1,246	1,066	9,023
Passion Fruit	105	38	97	132	126	178	168	152	94	102	1,193
Fruits	4,986	3,865	3,740	3,280	3,620	3,695	3,800	4,468	4,445	4,781	40,679

During the period under review, ripe bananas contributed 51 percent to the fruits value, cooking bananas contributed 25 percent, mangoes contributed 22 percent, and passion fruits contributed 3

percent. On average a kg of passion fruit cost Ksh 104 at retail outlets; the price was attributed to a shortage in supply.

Table 6: Regional fruits consumption by volume (MT)

Regions	Jun-11	Jul-11	Aug-11	Sep-11	Oct-11	Nov-11	Dec-11	Jan-12	Feb-12	Mar-12	Totals	% Share
Nairobi	36,130	25,914	19,709	16,195	20,400	19,698	19,832	20,648	20,552	20,588	219,667	30%
Eastern	13,723	11,432	12,170	10,639	12,935	13,959	13,786	19,214	16,295	17,086	141,238	19%
Nyanza	10,232	10,537	9,943	8,862	10,407	9,543	10,263	13,038	11,965	12,531	107,321	14%
Central	16,307	12,642	9,903	8,347	8,490	8,624	8,124	9,543	11,050	14,352	107,380	14%
Rift valley	10,266	9,702	8,016	7,383	7,377	7,624	7,824	8,376	7,942	8,878	83,387	11%
Coast	8,073	8,703	7,926	5,264	4,812	6,278	6,426	7,104	6,040	6,853	67,478	9%
Western	1,651	1,461	1,097	907	1,637	1,690	1,040	1,490	1,567	1,614	14,154	2%
Total	96,382	80,390	68,764	57,597	66,056	67,415	67,295	79,412	75,411	81,902	740,625	100%

Regionally, Nairobi consistently consumed the highest volume of fruits through the retail trade with a 30 percent market share, followed by Eastern (19 percent), Nyanza (14 percent), Central (14 percent), Rift Valley (11 percent), and Coast (9 percent). The Western region has the least volume (2 percent), possibly due to availability at household levels.

Across the regions, ripe bananas commanded the largest volume sales with exception of the Western region where cooking bananas (green bananas) dominated. However, passion fruits sales were meager across regions. Mangoes were consumed across all regions, with fewer sales being reported in the Eastern region possibly because of availability at household levels. In the Eastern region, 60 percent of total fruits sold were ripe bananas and the Western region had the strongest market for cooking bananas.

Table 7: Regional fruits consumption by value (Ksh)

Regions	Total Products - Absolute value in millions (Ksh)											% share
	Jun-11	Jul-11	Aug-11	Sep-11	Oct-11	Nov-11	Dec-11	Jan-12	Feb-12	Mar-12	Total	
Eastern	3,066	2,855	3,007	2,595	3,216	2,802	3,103	3,583	3,772	4,656	32,656	24%
Nairobi	4,031	2,833	2,735	2,528	2,881	2,695	2,907	3,456	3,512	3,816	31,393	23%
Nyanza	2,292	2,008	2,249	2,194	2,605	2,620	2,672	3,112	2,447	2,942	25,140	18%
Central	1,625	1,336	1,191	1,135	1,136	1,059	1,111	1,542	1,683	2,280	14,099	10%
Coast	1,304	1,441	1,343	1,241	1,314	1,372	1,269	1,431	1,279	1,518	13,511	10%
Rift valley	1,159	1,143	1,018	1,060	1,109	1,127	1,296	1,402	1,374	1,521	12,209	9%
Western	697	565	619	658	851	870	654	849	1,115	1,211	8,089	6%
Total	14,173	12,181	12,163	11,410	13,112	12,544	13,012	15,375	15,182	17,944	137,096	100%

Table 8: Fruits consumption by channels (MT)

Channels	Jun-11	Jul-11	Aug-11	Sep-11	Oct-11	Nov-11	Dec-11	Jan-12	Feb-12	Mar-12	Total	% Share
Hawker	42,465	34,355	25,724	20,148	25,103	25,338	25,709	27,636	26,891	29,612	282,978	38%
Green grocer	20,132	15,355	16,007	13,366	14,946	14,591	16,997	24,078	19,881	21,753	177,106	24%
Small <i>duka</i>	15,496	14,222	12,625	11,053	12,567	13,080	11,705	13,186	13,962	15,528	133,424	18%
Kiosk	15,257	13,375	11,411	10,558	10,515	11,323	9,650	10,583	11,113	11,721	115,505	16%
Large <i>duka</i>	2,941	2,988	2,539	2,124	2,444	2,336	2,390	3,072	2,926	3,208	26,967	4%
Self service	91	95	459	348	482	748	844	858	638	80	4,644	1%
Total	96,382	80,390	68,764	57,597	66,056	67,415	67,295	79,412	75,411	81,902	740,625	100%

By channels, dedicated hawkers at open and enclosed air markets drove the biggest volumes (38 percent) followed by green grocers (24 percent). The small contribution of supermarkets (1 percent) to the category is an indication that they serve a small percentage of the population in Kenya, though there is potential for growth.

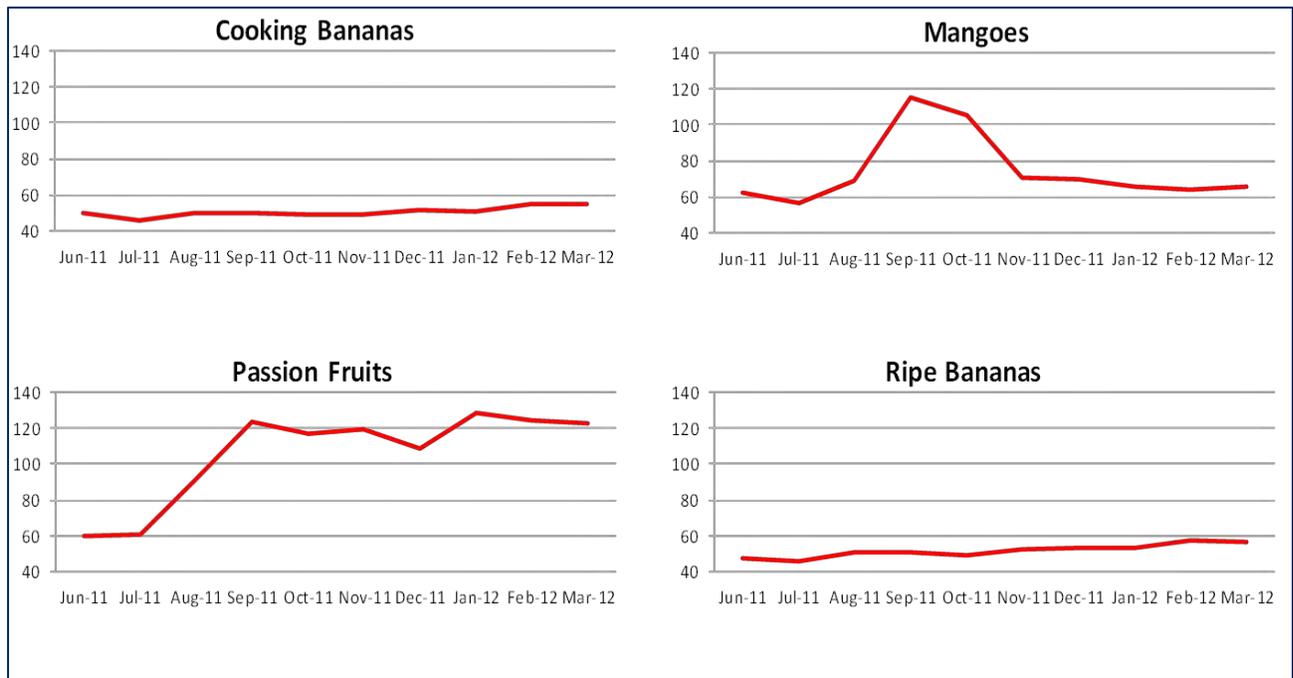
There has been a price increase across all fruits. Fruit prices vary by region and channel, but the recent increases were seen across all regions and channels. In March 2012, ripe bananas traded at Ksh 56 per kilogram, compared to Ksh 45 in July 2011, representing 4 percent increase. Cooking bananas sold for Ksh 55 in March 2012, compared to Ksh 46 in July 2011. Passion fruits were selling at Ksh 110 in March 2012, up from Ksh 61 in June 2011, a 79 percent increase. Mangoes were the exception. They sold at Ksh 115 per kg in September 2011 (low season) and were selling at Ksh 63 in March 2012 (high season).

Table 9: Fruits average retail market prices (Ksh/Kg)

Fruits	Fruits retail average prices/Kg									
	Jun-11	Jul-11	Aug-11	Sep-11	Oct-11	Nov-11	Dec-11	Jan-12	Feb-12	Mar-12
Cooking Banana	49.5	45.9	50.2	49.9	48.6	48.8	51.1	51.0	55.2	54.8
Mango	61.8	56.3	69.2	114.9	104.9	70.2	70.1	65.5	63.8	65.4
Passion Purple	55.3	59.1	95.2	133.9	122.4	121.2	108.4	136.2	133.1	132.1
Passion Yellow	67.7	64.2	79.5	97.9	90.8	114.0	110.0	89.0	89.9	87.7
Ripe Banana	47.7	45.3	51.0	51.0	48.7	51.9	53.1	53.3	56.9	56.2

Mango prices fluctuate seasonally. When in season and abundant, prices go down and when not in season and scarce, prices increase. Passion fruits prices doubled in last 10 months due to scarcity. The price of purple passion fruit, typically three times more abundant than the yellow variety, escalated quickly due to a supply shortage.

Figure 6: Fruits average retail prices (Ksh/Kg)



Market stock cover days

Despite the varying selling prices of fruits across the regions, the stock cover days (replenishment span) are minimal for most produce. The stock held at the trade will last about two days at the current rate of sale. This indicates the retailers need to replenish their stocks after every two days in order to meet the demand and also to avoid waste due to perishability.

Table 10: Fruit market stock cover days

Stock Cover (Days)	Jun -11	Jul 11	Aug 11	Sep 11	Oct 11	Nov 11	Dec 11	Jan 12	Feb 12	Mar 12	Average
Fruits											
Total Outlets	2.0	2.1	2.0	1.9	2.2	2.4	2.4	2.5	2.3	2.0	2.2
Central	1.7	2.4	2.1	2.1	2.5	2.8	2.7	2.5	2.6	2.1	2.4
Coast	1.6	1.4	1.3	1.1	1.5	2.0	1.7	1.5	1.9	1.7	1.6
Eastern	2.3	2.0	1.3	1.6	2.5	1.5	2.4	2.4	2.0	1.7	2.0
Nairobi	1.2	1.5	1.9	2.0	2.0	2.2	1.9	2.0	1.8	1.5	1.8
Nyanza	4.3	3.9	2.7	2.3	2.3	3.5	3.4	3.7	2.9	2.8	3.2
Rift Valley	2.3	2.5	2.7	2.2	2.6	2.9	3.0	3.1	3.3	2.7	2.7
Western	1.4	2.3	1.1	0.7	2.2	3.1	1.5	1.8	1.3	1.7	1.7

Nyanza was the only region where we observed stock cover days of three days.

7. VEGETABLE MARKET FINDINGS

Irish potatoes and tomatoes continually commanded the highest share during the 10 months under review with 32 percent and 31 percent of sales respectively. However by value, tomatoes had the biggest value at Ksh 39.4 billion (\$436.4 million) compared to potatoes with Ksh 27.6 billion (\$227 million).

Cabbages had slightly higher share (19 percent) than *sukuma wiki* (16 percent), and this can be attributed to easier transportation and slower perishability of cabbage. Sweet potato volume was minimal at formal retail outlets, which was attributed to non-availability and the fact that most of the sales were the local varieties. For the Irish potato, white Irish volume is slightly higher than the red Irish potatoes.

Table 11: Vegetable market overview sales volume (MT)

Type	Jun-11	Jul-11	Aug-11	Sep-11	Oct-11	Nov-11	Dec-11	Jan-12	Feb-12	Mar-12	Total
Potato	63,448	66,680	67,262	60,853	71,194	63,071	57,861	65,238	57,275	64,037	636,919
Tomato	65,781	63,400	56,336	55,627	63,125	59,798	59,936	64,202	56,502	66,711	611,417
Cabbages	37,295	36,696	35,365	33,392	37,114	35,648	38,663	42,206	37,207	46,325	379,911
Sukuma Wiki	29,605	29,320	29,035	28,009	33,535	30,726	31,864	35,624	30,991	38,193	316,900
Sweet Potato	3,530	1,896	1,624	1,172	1,649	1,669	1,293	2,108	1,399	1,871	18,211
Green Maize	1,234	1,356	2,260	1,733	2,472	1,700	1,998	2,763	2,502	2,289	20,307
Total	200,892	199,347	191,881	180,787	209,090	192,610	191,616	212,141	185,876	219,426	1,983,667

Table 12: Vegetable market overview sales value (million Ksh)

Products	Jun-11	Jul-11	Aug-11	Sep-11	Oct-11	Nov-11	Dec-11	Jan-12	Feb-12	Mar-12	Totals
Tomato	2,655	2,148	4,282	3,782	4,239	4,043	4,120	4,602	4,304	5,176	39,352
Potato	3,079	3,052	2,040	2,246	2,704	2,474	2,432	3,096	2,985	3,528	27,637
Cabbages	1,695	1,335	1,019	1,072	1,237	1,162	1,283	1,580	1,787	2,288	14,458
Kales	1,552	1,608	878	870	1,101	969	1,178	1,348	1,429	1,914	12,846
Sweet Potato	165	117	115	84	92	113	91	132	97	129	1,135
Green Maize	40	56	89	77	119	88	108	149	134	129	988
Vegetables	9,187	8,316	8,423	8,130	9,492	8,850	9,212	10,907	10,737	13,163	96,417

Table 13: Regional Vegetable consumption by volume (MT)

Regions	Jun-11	Jul-11	Aug-11	Sep-11	Oct-11	Nov-11	Dec-11	Jan-12	Feb-12	Mar-12	Total
Eastern	60,564	61,221	59,168	52,566	65,018	57,328	61,234	63,675	60,627	70,723	612,123
Nairobi	46,471	38,868	34,869	33,955	38,092	36,883	38,299	42,431	40,467	47,553	397,889
Nyanza	30,721	33,603	34,600	33,048	38,896	35,678	32,882	39,263	24,082	29,502	332,274
Central	18,796	18,274	19,186	18,000	19,048	16,743	16,348	20,954	20,105	26,962	194,415
Coast	19,035	21,487	20,103	18,998	20,532	20,315	18,062	19,973	16,457	18,033	192,995
Rift valley	13,569	15,300	15,224	14,830	15,984	14,028	15,860	16,117	14,614	15,485	151,012
Western	11,737	10,593	8,731	9,390	11,519	11,635	8,932	9,726	9,526	11,168	102,957
Total	200,892	199,347	191,881	180,787	209,090	192,610	191,616	212,140	185,876	219,426	1,983,666

Notably there was a steady increase of vegetable prices across the regions, however with relatively stable volumes. Looking at the vegetable market by region, it is quite different from the fruits market because most of the vegetables were being consumed in the Eastern region (612,123 MT) followed by Nairobi (397,889 MT) region. This is a clear indication that these regions are importers, for instance Ukambani (weather issues) areas rely on imports. The Western region had the lowest sales (102,957 MT) mainly because most of the vegetables consumed were directly from farm and household production.

Figure 7: Vegetables market overview sales volume (MT) by region

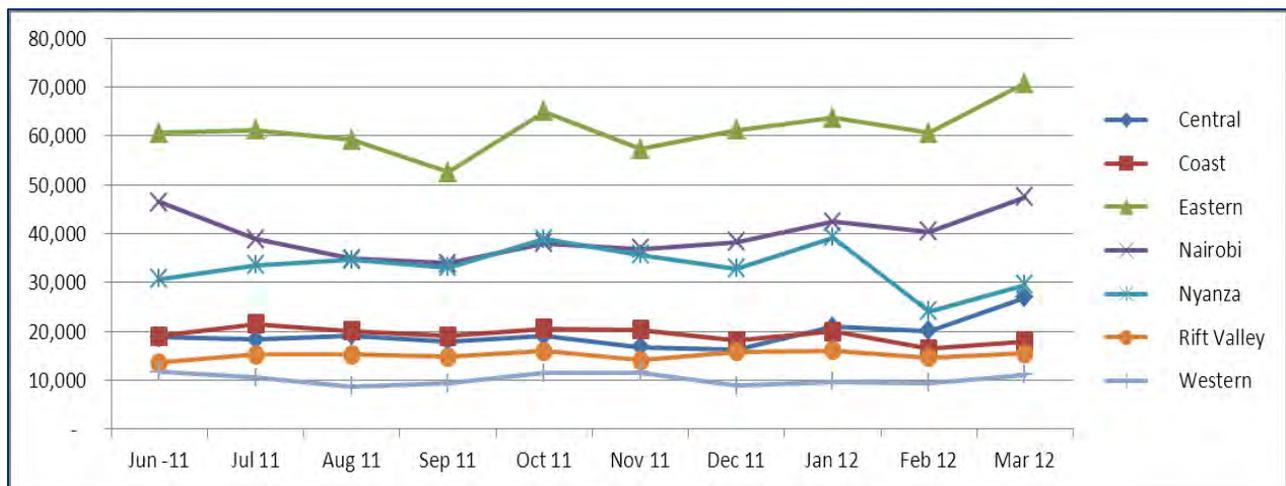


Table 4: Vegetables market overview sales value by region (million Ksh)

Regions	Jun-11	Jul-11	Aug-11	Sep-11	Oct-11	Nov-11	Dec-11	Jan-12	Feb-12	Mar-12	Total
Eastern	2,570	2,420	2,432	2,142	2,677	2,220	2,524	2,738	2,984	3,848	26,554
Nyanza	1,808	1,553	1,767	1,718	2,093	2,107	2,145	2,513	1,881	2,323	19,909
Nairobi	1,898	1,537	1,527	1,414	1,560	1,493	1,652	2,083	2,132	2,459	17,755
Coast	949	1,027	951	965	1,051	1,011	875	1,027	925	1,129	9,910
Central	764	667	651	703	706	602	657	989	1,004	1,433	8,176
Rift valley	581	609	549	591	653	648	774	807	818	897	6,927
Western	617	503	546	597	753	768	585	750	992	1,075	7,186
Total	9,187	8,316	8,423	8,130	9,492	8,850	9,212	10,907	10,737	13,163	96,417

The Eastern region was the biggest consumer for vegetables by both volume and value, with the increase in value an indication of increasing prices. Vegetable prices had the highest percentage gain in price per kilogram in the last 10 months.

The Nyanza region was rated second in vegetable sales with Ksh 19.9 billion (\$220.8 million), a clear indication of high unit prices. Nairobi was third with vegetable sales worth Ksh 17.8 billion (\$196.9 million).

Figure 8: Vegetables market overview sales value (Million Ksh)

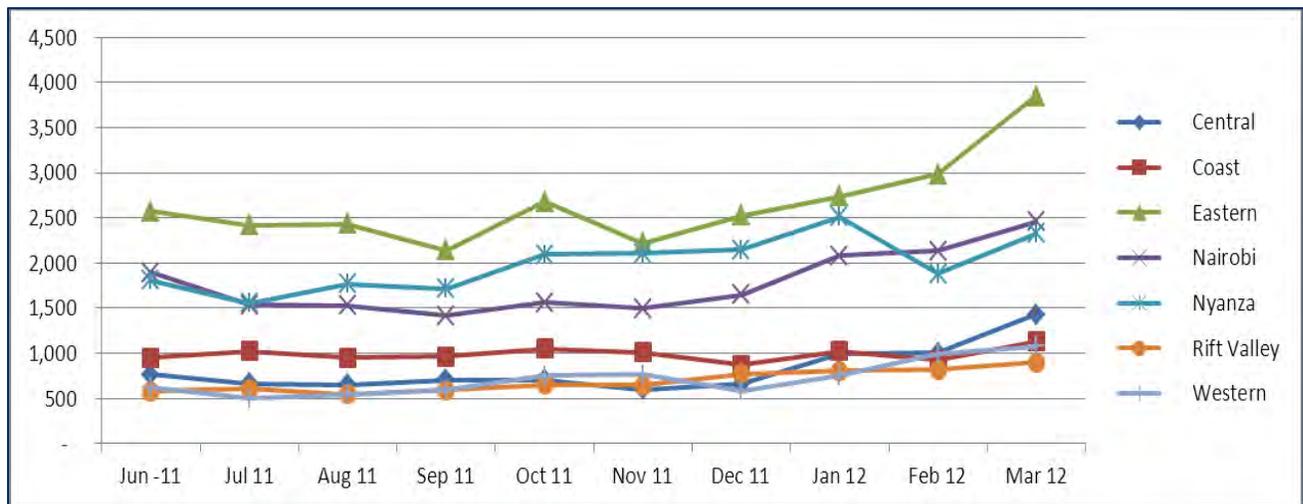
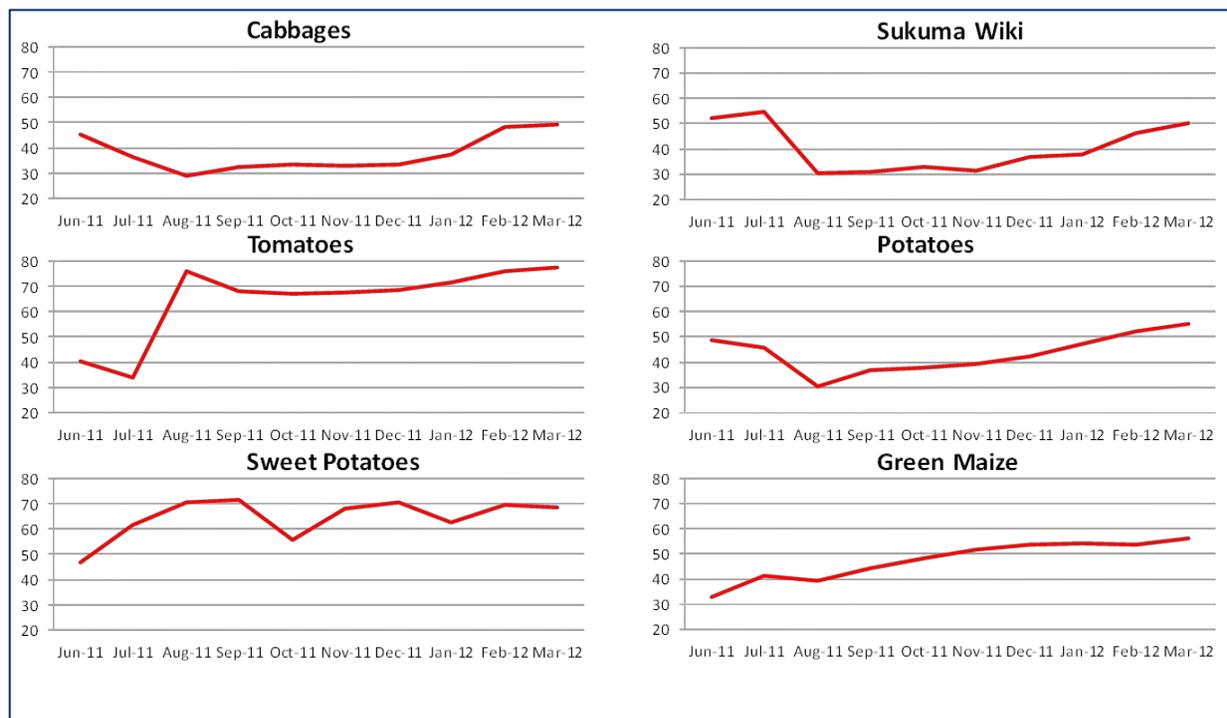


Figure 9: Vegetables average retail prices (Ksh/Kg)

In the vegetable category, sukuma wiki tended to be slightly more expensive than cabbages per kilogram (average of Ksh 40 and Ksh 38 respectively). This can be attributed to the bulkiness of sukuma wiki and the amount needed to total a kilogram.

From July 2011 to March 2012, when vegetable prices were at the lowest, average tomato retail prices more than doubled (129 percent). Average cabbage prices hiked by 36 percent whereas sukuma wiki dropped by 9 percent. On average, retail prices for sweet potato increased by 34 percent which was attributed to a supply shortage at retail outlets.

At the regional level, tomatoes were very expensive in the Western region with a 10-month average of Ksh 92 per kilogram compared to Ksh 54 in the Central and Eastern regions. Across regions different vegetables retailed at different prices. The only common trend was the price increase with highest average prices in March 2012, attributable to drought.

Table 15: Vegetable market price per kilogram (Ksh)

Type	Retail average prices (Ksh/Kg)										Average
	Jun-11	Jul-11	Aug-11	Sep-11	Oct-11	Nov-11	Dec-11	Jan-12	Feb-12	Mar-12	
Cabbage	45.5	36.4	28.8	32.1	33.3	32.6	33.2	37.4	48.0	49.4	37.7
Sukuma wiki	52.4	54.8	30.2	31.0	32.8	31.5	37.0	37.8	46.1	50.1	40.4
Tomato	40.4	33.9	76.0	68.0	67.2	67.6	68.7	71.7	76.2	77.6	64.7
Potato	48.5	45.5	30.4	37.1	38.0	39.2	41.8	47.6	52.2	55.1	43.6
Sweet potato	54.0	48.8	71.7	69.3	61.2	65.6	74.6	66.3	70.1	65.2	64.7
Green maize	32.8	41.5	39.3	44.2	48.1	51.6	53.8	54.0	53.5	56.3	47.5
Average	45.6	43.5	46.1	47.0	46.8	48.0	51.5	52.5	57.7	59.0	49.8

On stock replenishments, the stock cover days were very low for vegetables, with most lasting an average of two days at the current stock levels. Retailers in the Coast region took an average of one day to replenish their stock compared to the Central and Eastern regions that took an average of three days.

Table 16: Vegetable market, stock cover days by region

Vegetables	Stock Cover (Days)										Average
Total Outlets	2.3	2.3	2.9	2.2	2.2	2.4	2.4	2.3	2.3	2.3	2.4
Central	2.9	3.3	2.8	2.8	3.0	2.7	3.2	3.0	2.5	2.5	2.9
Coast	1.4	1.2	1.1	1.1	1.1	1.1	1.2	1.1	1.2	1.2	1.2
Eastern	2.4	2.1	4.1	2.5	2.7	2.2	2.9	2.8	2.9	2.8	2.7
Nairobi	1.7	2.0	2.9	2.0	2.3	2.7	2.2	2.1	1.9	1.9	2.2
Nyanza	2.7	3.0	2.5	2.4	1.7	2.6	2.4	2.2	2.7	2.6	2.5
Rift Valley	2.6	2.6	2.5	2.4	2.0	2.6	2.0	2.2	2.1	2.0	2.3
Western	2.4	2.2	2.4	1.6	1.9	2.7	1.9	1.8	1.4	1.6	2.0

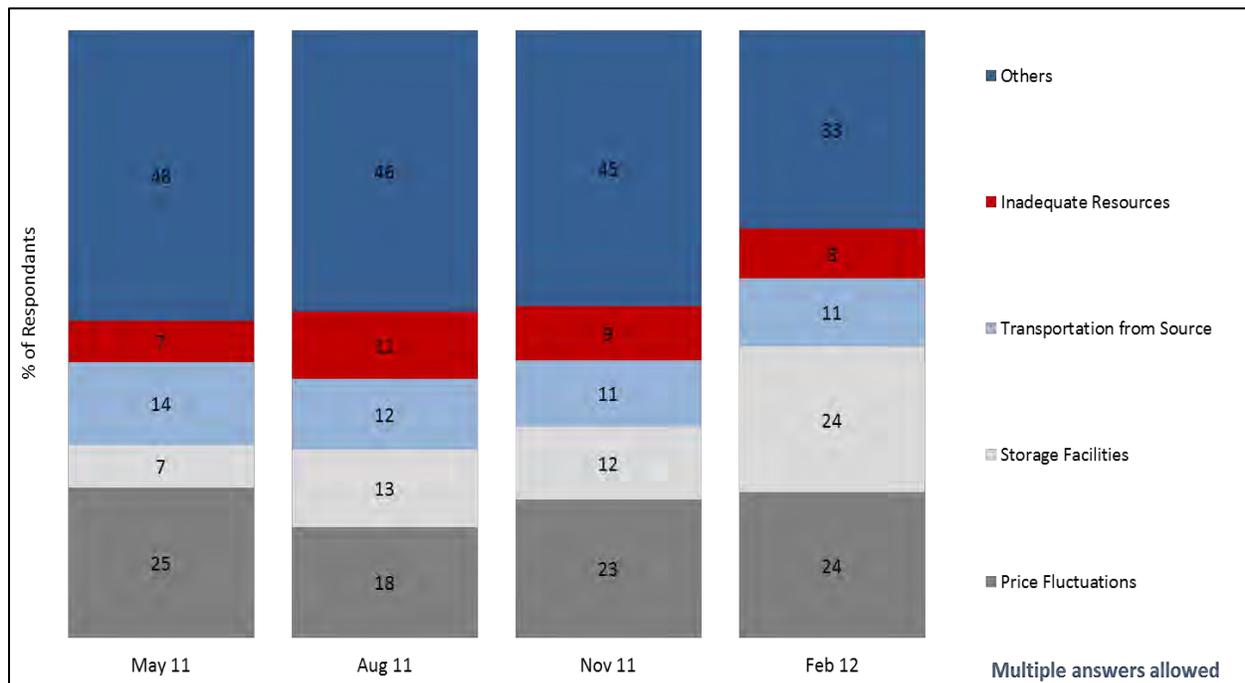
8. CHALLENGES FACING RETAILERS

Lack of funds, inflation, and seasonality are the key issues affecting retailers, however in last quarter of 2011 through March 2012, more respondents mentioned poor quality produce and lack of freshness as constraints in the purchase patterns.

Other key challenges that respondents reported include:

- Price fluctuations mainly due to seasonality and lack of market information which allows traders to demand higher prices (24 percent)
- Security issues related to overnight storage (24 percent)
- Transportation from farm to market and intra-urban lack of transport due to poor feeder roads (11 percent)
- Inadequate capital to invest (8 percent)
- Meeting customer needs in terms of consistency of supply and quality/freshness of produce

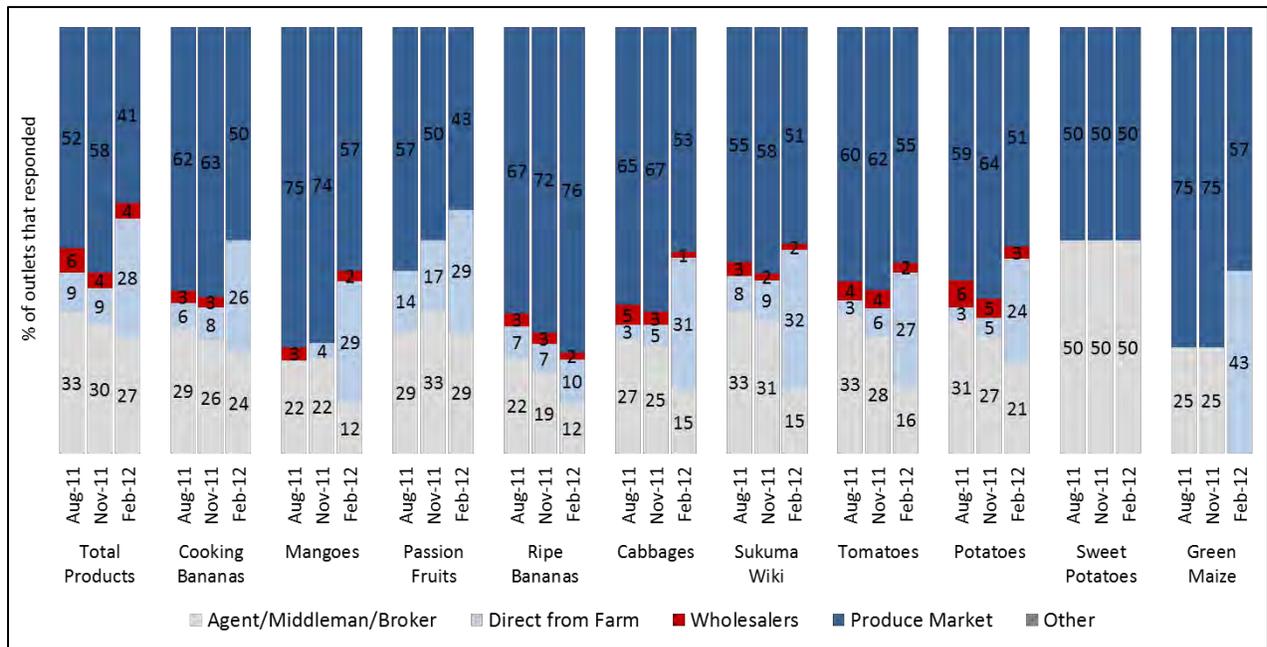
Figure 10: Challenges facing retailers



9. PRODUCE SOURCES

Nationally, over 50 percent of retailers source their products from a produce market, followed by 30 percent who source from agents/middlemen. However in March 2012, more retailers sourced directly from the farm because of the scarcity of the produce at the time and to mitigate the escalating prices.

Figure 11: Source of produce by category

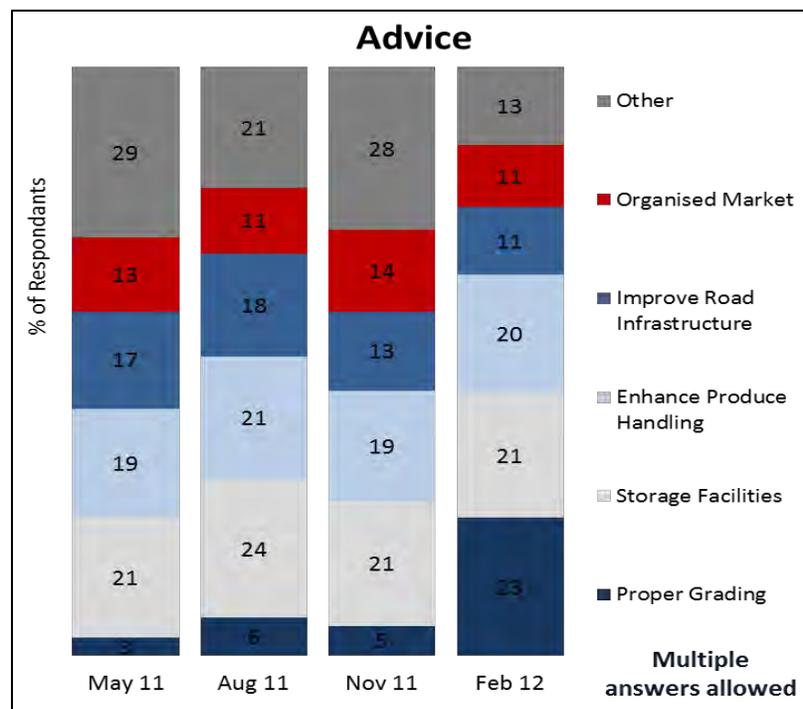


10. RETAILER INTERVENTIONS NEEDED

As part of the audit, we asked retailers what is needed to increase sales volume and stock at their outlets. After listening to their responses, it was apparent that the following would be most helpful:

- Produce related
 - Proper grading of produce would increase demand by enabling price differentiation based on quality (23 percent) Bulk purchase hides good and bad at same price and sorting is the duty of the trader.
 - Training for workers in the value chain who handle perishable or fragile or delicate fruits and vegetables (20 percent)
- Market infrastructure
 - Improved/increased storage facilities (21 percent)
 - Organized market/security of tenure (8 percent)
- Road infrastructure
 - Improved/increased feeder roads (11 percent)

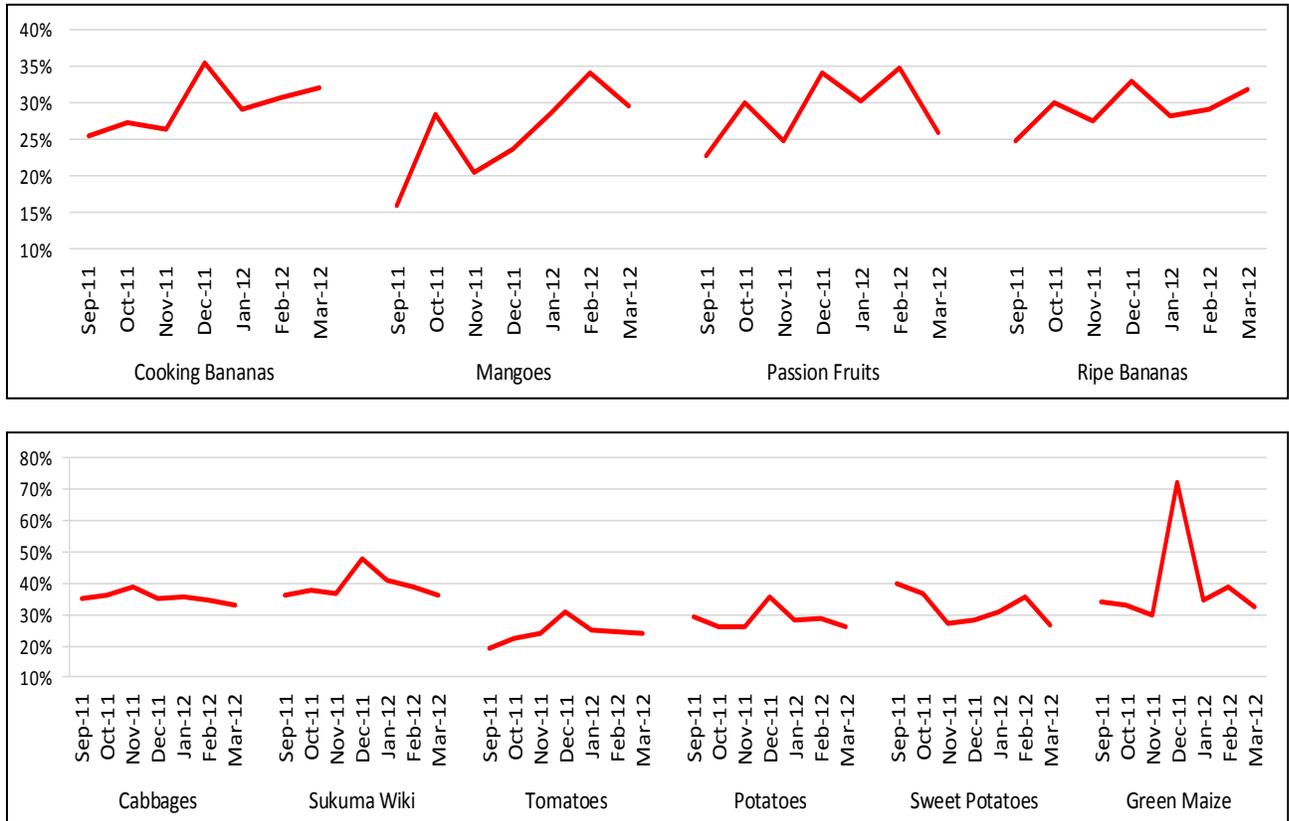
Figure 12: Help for Retailers



11. BUSINESS PROFITABILITY

Fruit and vegetable traders make trade margins of 20 – 35 percent, compared to manufactured goods with margins of less than 25 percent. In recent months we have seen margins increase, especially for those trading in the fruits category. The observed increases could be due to low supply in the market coupled with rising demand and growing awareness of the fruit’s health benefits.

Figure 13: Profitability of the produce



12. BENEFITS OF RETAIL AUDIT

- To indicate and inform on identified regional (provincial) opportunities.
- To improve on the domestic wholesale market infrastructure.
- To assist in proper planning and policy development.

13. MARKET OPPORTUNITIES

- There is huge opportunity to grow the passion fruits market.
- Potential to grow local market tomato business lies in cannibalizing the imported tomatoes as what is currently produced is far less than what is traded/demand within the country.
- There is opportunity to develop quality produce handling containers/bags to enhance freshness of produce at the trade level.

14. RECOMMENDATIONS & CONCLUSIONS

- **Seasonality and price fluctuation**
 - There is a need for farmer and trader training support, mainly on ways to improve productivity and implement irrigation systems to reduce the current over reliance on rainfall.
 - New innovations are needed to disseminate reliable market information to the farmers and traders; this will enhance the embracing of horticulture as a viable business to attract more players in the sector.
 - Encourage the farm's input on pricing as part of the strategy to avoid the huge price fluctuations in this sector.
- **Handling & Grading:** There is great opportunity for all players to change the current market mapping for handling and grading. For example, training farmers to grade before selling will benefit them because retailers would be able to buy or sell specific grades.
- **Trader business expertise:** Traders need training in basic business management and recordkeeping.
- **Road network:** More government involvement is required in developing rural access roads to farms and wholesale markets.
- **Market infrastructure:** Growth efforts should focus on developing formal markets, especially with basic sanitary facilities, at designated trading areas.

15. REFERENCES

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ANNEX 1

THE STOCK FORM

USAID KENYA HORTICULTURE COMPETITIVENESS PROJECT - RETAIL AUDIT																
Outlet Name:			Outlet Type:		Auditor's Name											
Outlet Serial Number:			Urban[1] Rural[2]		Date: _____											
Region:					Comment 											
District:											TIME IN: _____					
Division:											TIME OUT: _____					
Location:																
Sub-Location:																
Gender Male[1] Female[2]			Age:													
Product Code	Product Name	Stock (Kg)	Purchases WK1	Purchases WK2	Purchases WK3	Purchases WK4	Purchases WK5	Purchases WK6	Buying Price (Ksh)	Selling Price (Ksh)						
	Fruits-															
	Cooking Bananas															
	Ripe Bananas															
	Mangoes															
	Passion Purple															
	Passion Yellow															
	Vegetables															
	White Irish Potatoes															
	Red Irish Potatoes															
	Cabbages															
	Tomatoes															
	Sukuma Wiki (Kale)															
	White Fresh Sweet Potatoes															
	Orange Fresh Sweet Potatoes															
	Local Variety Sweet Potatoes															
	Green Maize															

ANNEX 2

SURVEY TOOL (QUESTIONNAIRE)

USAID KENYA HORTICULTURE COMPETITIVENESS PROJECT - RETAIL AUDIT											
Q1 How do you source your produce?											
<i>ASK ALL (MULTIPLE ANSWERS)</i>											
	Potatoes	Cabbages	Tomatoes	Wiki (Kale)	Bananas		Mangoes	Passion fruits	Sweet potatoe	Green Maize	
					Cookin	Ripe					
Agents/ Middlemen/Brokers	1	1	1	1	1	1	1	1	1	1	ASK Q2
Direct from the farm	2	2	2	2	2	2	2	2	2	2	
Wholesalers	3	3	3	3	3	3	3	3	3	3	
Produce market	4	4	4	4	4	4	4	4	4	4	ASK Q3a
Others(Specify).....											
<i>SHOW CARD Q2</i>											
Q2 On a scale of 1 to 5 where 1 is very trust worthy and 5 not very trust worthy, How do you rate your agents/middlemen/ brokers											
<i>(ASK ONLY IF CODED 1 IN QUESTION 1 (SINGLE ANSWER)</i>											
Very trust worthy	1										
Trust worthy	2										
Neither trust worthy nor untrustworthy	3										
Untrust worthy	4										
Very untrustworthy	5										
Q3a Which market do you source your products from?											
<i>(MULTIPLE ANSWERS)</i>											
NAIROBI REGION			CENTRAL REGION			EASTERN REGION			REFT VALLEY		
Wakulima	1	Kanyua Market	44	Gakoromane Market	18	Bahati Market	26				
Gikomba	3	Karatina Market	45	Machakos Market	19	Bomet Market	27				
Githurai	4	Kiambu Market	11	Makogeni Market	20	Eldama Ravine Market	28				
Kangemi	6	Kinari Market	12	Makutano Market	21	Kabarnet Market	29				
Muthurwa	8	Magumu Market	13	Marikiti Market (Embu)	22	Kajiado Market	30				
Korogocho	9	Makongeni Market Thika	14	Matuu	23	Kapsabet Market	31				
Kawangware	46	Mukuyu Market	15	Mwingi Municipal Marke	24	Kitale Market	32				
Wangige	47	Nyahururu Market	16	Nkubu Market	25	Naivasha	33				
Others	10	Soko Mjinga	17	Others	10	Nakuru Market	34				
		Others	10			Nyahuru market	35				
						Others	10				
NYANZA REGION			COAST REGION			WESTERN REGION					
Daraja Mbili Kisii	36		Kongowea	2							
Homa Bay Market	37		Malindi Old Mark	41							
Kapkatet Market	38		Ibiza	42							
Rodi Kobany	39		Others	10							
Others	10										
<i>ASK FOR ONLY THOSE STOCKED IN SECTION A</i>											
Q3b What is the origin of(Ask for product in section A)											
	Potatoes	Cabbages	Tomatoes	Wiki (Kale)	Bananas		Mangoes	Passion fruits	potatoe	Green Maize	
					g	Ripe					
Imported	1	1	1	1	1	1	1	1	1	1	
Domestic/Local	2	2	2	2	2	2	2	2	2	2	
Both	3	3	3	3	3	3	3	3	3	3	

AUDITOR, ASK FOR ONLY THOSE STOCKED IN SECTION A (Probe fully)

Q4 What challenges/problems do you experience with.....(mention product in Section A) at the moment?

	Potatoes	Cabbages	Tomatoes	Wiki (Kale)	Bananas		Mangoes	Passion fruits	Sweet potatoe	Green Maize
					Cookin	Ripe				
Storage facilities	1	1	1	1	1	1	1	1	1	1
Mixer with traders of different variety of produce	2	2	2	2	2	2	2	2	2	2
Mixer of retail and wholesale traders	3	3	3	3	3	3	3	3	3	3
In accessibility of wholesale market	4	4	4	4	4	4	4	4	4	4
Outlet Space	5	5	5	5	5	5	5	5	5	5
Transportation from source	6	6	6	6	6	6	6	6	6	6
Disposal of wastes	7	7	7	7	7	7	7	7	7	7
Price fluctuations	8	8	8	8	8	8	8	8	8	8
Competition from other traders	9	9	9	9	9	9	9	9	9	9
Local government levies, charges and	10	10	10	10	10	10	10	10	10	10
In adequate resources eg capital, Labour etc	11	11	11	11	11	11	11	11	11	11
Perishability of the produce	12	12	12	12	12	12	12	12	12	12
Harassment	13	13	13	13	13	13	13	13	13	13
Inadequate supply of produce	14	14	14	14	14	14	14	14	14	14
Insecurity	15	15	15	15	15	15	15	15	15	15
None	16	16	16	16	16	16	16	16	16	16
Others....(specify)										

SHOW CARD Q5a

AUDITOR, ASK FOR ONLY THOSE STOCKED IN SECTION A

Q5a On a scale of 1 to 3 where 1 is profitable and 3 loss making, how would you rate the profitability of(mention product in section

	Profitable	Neither profitable nor loss making	Loss making
Potatoes	1	2	3
Cabbages	1	2	3
Tomatoes	1	2	3
Sukuma Wiki (Kale)	1	2	3
Sweet potatoes	1	2	3
Bananas	1	2	3
Mangoes	1	2	3
Passion Fruits	1	2	3
Green Maize	1	2	3

AUDITOR, ASK IF CODED 1 IN MORE THAN ONE FRUIT TYPE IN Q5A OTHERWISE ASK Q6 (Write in Space provided)

Q5b On a rank of 1 to 3 where 1 is most profitable and 3 least profitable rank the fruits below in terms of profitability

Bananas	
Mangoes	
Passion Fruits	

AUDITOR, ASK IF CODED 1 IN MORE THAN ONE VEGETABLE TYPE IN Q5A OTHERWISE ASK Q6 (Write in Space provided)

Q5c On a rank of 1 to 5 where 1 is most profitable and 5 least profitable rank the fruits below in terms of profitability

Potatoes	
Cabbages	
Tomatoes	
Sukuma Wiki (Kale)	
Sweet potatoes	
Green Maize	

AUDITOR, ASK FOR ONLY THOSE STOCKED IN SECTION A (Probe fully)

Q6 What are the constraints your customers face when buying.....(mention product in section A) from you?

	Potatoes	Cabbages	Tomatoes	Sukuma Wiki (Kale)	Bananas		Mangoes	Passion fruits	Sweet potatoes	Green Maize
					Cooking	Ripe				
Seasonality and availability	1	1	1	1	1	1	1	1	1	1
Poor/bad quality of the produce	2	2	2	2	2	2	2	2	2	2
Not available in an outlet near me	3	3	3	3	3	3	3	3	3	3
Lack of variety	4	4	4	4	4	4	4	4	4	4
Poor drainage & sewerage system	5	5	5	5	5	5	5	5	5	5
Not sold in a clean and hygienic environment	6	6	6	6	6	6	6	6	6	6
poor waste disposal	7	7	7	7	7	7	7	7	7	7
Not fresh	8	8	8	8	8	8	8	8	8	8
Poor packaging	9	9	9	9	9	9	9	9	9	9
Availability of processed produce	10	10	10	10	10	10	10	10	10	10
Lack of storage facilities at home	11	11	11	11	11	11	11	11	11	11
Cultural backgrounds	12	12	12	12	12	12	12	12	12	12
Source of the produce	13	13	13	13	13	13	13	13	13	13
Mixing of fruit & vegetables trade with selling of other products	14	14	14	14	14	14	14	14	14	14
Selling both fruits & vegetables in	15	15	15	15	15	15	15	15	15	15
In accessibility of market	16	16	16	16	16	16	16	16	16	16
Competition of other fruits & Vegetables.	17	17	17	17	17	17	17	17	17	17
Less money to spend due to inflation	18	18	18	18	18	18	18	18	18	18
None	19	19	19	19	19	19	19	19	19	19
Others....(specify)										

MULTIPLE ANSWERS, AUDITOR PROBE FULLY

Q7 What assistance could you need as a trader/ group of traders in minimizing post harvest wastage and disposal

Improvements of roads infrastructure	1
Waste disposal facilities	2
Storage facilities	3
Training on produce handling	4
None	5
Others....(specify)	

MULTIPLE ANSWERS, AUDITOR PROBE FULLY

Q8 In your opinion what recommendations/interventions would you give to address the fluctuation in supply and marketing of the

Proper grading of the produce	1
Storage facilities	2
Enhance produce handling	3
Improved transport infrastructure	4
Organised and coordinated markets	5
Improved market infrastructure	6
Market hygiene and waste disposal	7
Defined produce section in the market	8
Use of market intelligence system	9
None	10
Others....(specify)	

Q9 What are your reasons for not stocking.....(AUDITOR, ASK FOR PRODUCTS NOT STOCKED BY THE RESPONDENT)											
Reasons	Potatoes	Cabbages	Tomatoes	Sukuma Wiki (Kale)	Bananas		Mangoes	Passion fruits	Sweet potatoes	Green Maize	
					Cooking	Ripe					
Bulky To Transport	1	1	1	1	1	1	1	1	1	1	
Business Location Not Favourable	2	2	2	2	2	2	2	2	2	2	
Cannot Handle Many Products	3	3	3	3	3	3	3	3	3	3	
Children Will Eat For Free	4	4	4	4	4	4	4	4	4	4	
Comfortable With What She Is Selling	5	5	5	5	5	5	5	5	5	5	
Competition	6	6	6	6	6	6	6	6	6	6	
Customer Preferences	7	7	7	7	7	7	7	7	7	7	
Demands A Lot Of Work & Care	8	8	8	8	8	8	8	8	8	8	
Doesn't Produce From Her Farm	9	9	9	9	9	9	9	9	9	9	
Expensive	10	10	10	10	10	10	10	10	10	10	
Financial Constraints	11	11	11	11	11	11	11	11	11	11	
Harrassment By Council	12	12	12	12	12	12	12	12	12	12	
High Cost Of Transportation	13	13	13	13	13	13	13	13	13	13	
High Inflation	14	14	14	14	14	14	14	14	14	14	
High Wastage Level	15	15	15	15	15	15	15	15	15	15	
Hygiene	16	16	16	16	16	16	16	16	16	16	
Lack Of Enough Storage Space	17	17	17	17	17	17	17	17	17	17	
Low Demand	18	18	18	18	18	18	18	18	18	18	
Low Profit Margin	19	19	19	19	19	19	19	19	19	19	
No Assistance	20	20	20	20	20	20	20	20	20	20	
Not Allowed By Council	21	21	21	21	21	21	21	21	21	21	
Not Easily Available	22	22	22	22	22	22	22	22	22	22	
Not Fresh	23	23	23	23	23	23	23	23	23	23	
Not Interested	24	24	24	24	24	24	24	24	24	24	
Not Well Established	25	25	25	25	25	25	25	25	25	25	
Perishability	26	26	26	26	26	26	26	26	26	26	
Poor Business Condition	27	27	27	27	27	27	27	27	27	27	
Poor Quality Of The Produce	28	28	28	28	28	28	28	28	28	28	
Seasonal	29	29	29	29	29	29	29	29	29	29	
Specialization	30	30	30	30	30	30	30	30	30	30	
Unfavourable Business Condition	31	31	31	31	31	31	31	31	31	31	
Other (Specify)	32	32	32	32	32	32	32	32	32	32	

(AUDITOR ASK ONLY FOR PRODUCTS STOCKED IN SECTION A) Write in space provided

Q10 Estimating the last 4 weeks, what amount of..... have you lost due to bad/Stale/not fresh or lack of proper storage?

PRODUCE	VOLUME (KG)
Potatoes	
Cabbages	
Tomatoes	
Sukuma Wiki (Kale)	
Bananas	
Mangoes	
Passion fruits	
Sweet potatoes	
Green Maize	

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