

# NATIONAL HORTICULTURE VALIDATED REPORT 2013



**REPUBLIC OF KENYA**



**MINISTRY OF AGRICULTURE**

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# 1 FOREWORD

This report has reviewed the 2011 and 2012 data which had overestimated the values of cut flowers which had been provided by the primary source. The 2012 data had an abnormal spike in total yields which was due to a typographical error in Mango production. The review is also meant to reflect and mirror the County and Sub-County re-validated data. However, it is important to note that the 2013 data collected from the flower sector was not representative as the MOALF staff were denied access to the big flower farms therefore this data has relied on the export data from Kenya National Bureau of Statistics.

The data collection exercise is spearheaded by Horticultural Crops Development Authority (HCDA) with the participation of other stakeholders within the industry. This report is meant to provide information to the industry on the performance of the fruits, vegetables and flowers grown in all the counties for the purpose of planning, research, development and investment.

The data has been outlined according to the area covered by each crop, as well as the value at the farm-gate level. The overall potential for each crop with the accompanying challenges has also been discussed, though it is prudent to mention that there has been under-reporting for some crops, particularly those grown by the large scale growers.

The performance of the sector is very important considering that it provides income, food security and foreign exchange to the economy. Therefore, this report provides the growth pattern over the years to assist in developing interventions to promote the sector. The data provided herein is obtained from the localities by the field extension staff, guaranteeing representation of all parts of the country.

The main challenge has always been the validity of the data brought about by non-standardized methodology of data collection. However, the multi-disciplinary data validation team were able to interrogate and collate the data in order to form a credible report.

There is a need to develop a standard guide on how data needs to be collected from the field and build the capacity of the extension workers to enhance the validity of the data collected.

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## 2 ACKNOWLEDGEMENT

This report is a product of wider consultations among the key industry stakeholders whose input has been invaluable.

First let us appreciate support provided by Kenya Agricultural Research Institute (KARI), Ministry of Agriculture, Livestock and Fisheries (MOALF), Kenya Plant Health Inspectorate service (KEPHIS) and Kenya National Bureau of Statistics (KNBS). The Institutions were instrumental in availing their staff throughout the whole exercise and vehicles for collecting data.

Special thanks to the State Department of Agriculture staff and County staff directly involved in the validation exercise of this report at county levels; the support of County Directors of Agriculture, County Agriculture Officers and Sub County Agriculture Officers in availing data for scrutiny and organizing fora for deliberating their respective reports was vital in completing this report with a high level of accuracy.

Special thanks goes to the following individuals for ensuring the report is compiled; Mr. Wilfred Yako, Dr. Beatrice Ng'ayu, Mr. James Kamau, Mr. Caleb Yatich and Ms. Josephine Simiyu of HCDA; Ms. Judith Oyoo, Ms. Grace Watani and Miriam Otipa of KARI; Mr. Augustus Kivi of KEPHIS; Mr. Josiah Kaara and Mr. John Mburu of KNBS; Mr. Joseph Kere of USAID-KAVES; Special thanks go to Ms. Gladys Mwai of HCDA for providing the logistical support and attending to the technical needs of the Committee during the report writing exercise.

I wish to acknowledge the support and facilitation provided by Ms. Grace Kyallo, Ag. Managing Director HCDA without which the exercise would not have been conducted.

Not to forget the horticulture stakeholders that have continued to support the industry by providing information used in preparing this report. Since it is not possible to name each one of you that significantly contributed towards this work, kindly take this acknowledgement as my humble appreciation for your invaluable input.

The work was financed by the Horticultural Crops Development Authority (HCDA).

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### 3 METHODOLOGY

Data collection exercise was preceded with development of data capturing templates. The templates were forwarded to the Sub County Agricultural Officers (SCAOs), prior to the field visits by the data validation team. The data validation team was trained, on the templates and data collection procedures prior to the field visits.

Data was validated in all Counties except for Mandera, Wajir and Marsabit due to insecurity reasons. Validation was done through county data validation fora. The fora were attended by the SCAOs of the respective counties and chaired by a member of the validation team. Using pre-filled data templates earlier submitted to the SCAOs, the county fora validated the information provided in the templates.

A workshop was convened to compile data from the counties, large producers and growers associations; and the data then subjected to analysis using excel.

The report generated from the workshop was discussed and validated by stakeholders before the validation team produced the final report.

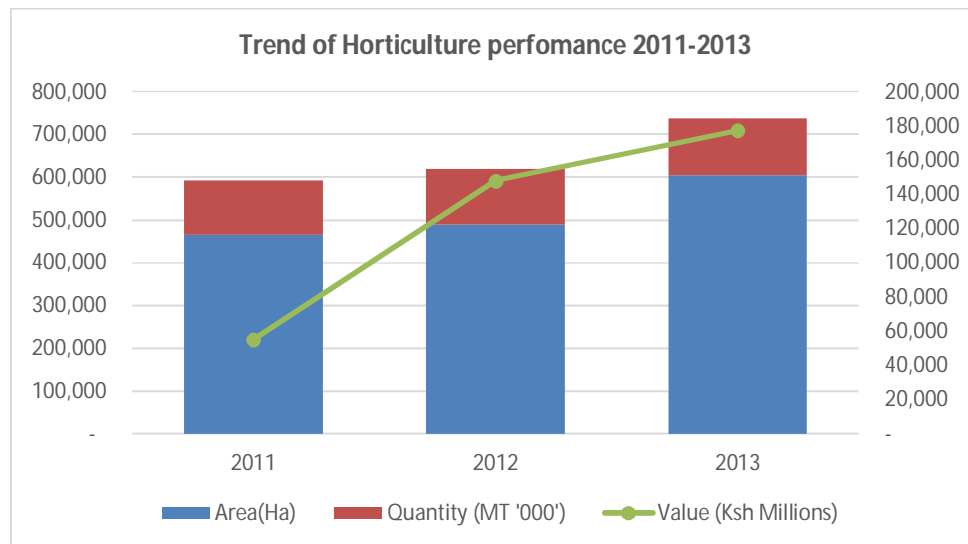
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## 4 INTRODUCTION

The agriculture sector is the mainstay in the Kenyan economy, and is the second most important subsector in the agricultural sector after Tea.

The total domestic value in the horticulture sector in 2013 amounted to Ksh177 billion occupying an area of 605,000 Ha with a total production quantity of 132 million MT. As compared to 2012, the total value and area increased by 17% and 19% respectively while productivity had a variation of only 2%. Increase in value was because of improved farm gate prices particularly for the vegetables, fruits and MAPs.

**Figure 1: Trend of Horticulture Sector, 2011-2013**

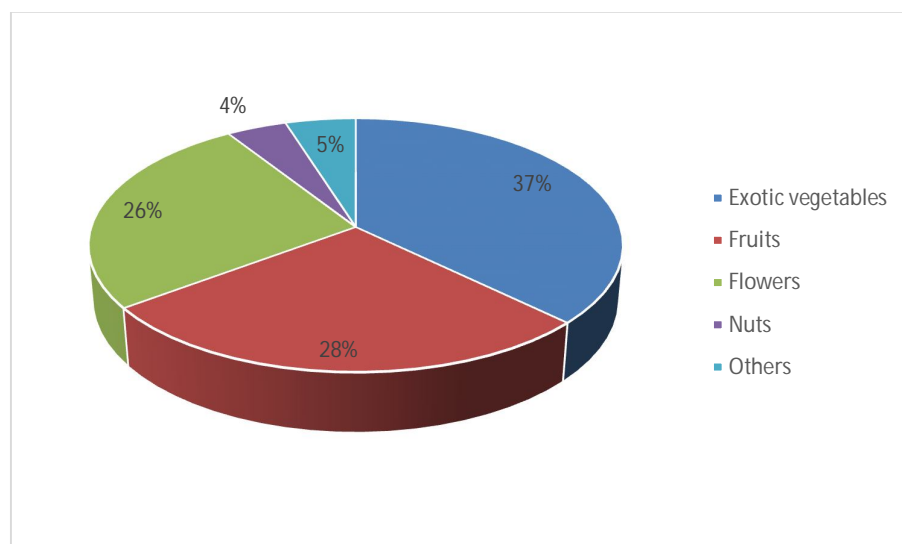


As shown in Table 1 and Figure 2, the contribution to the total value in 2013 was as follows: Exotic vegetables (43.7%), fruits (32.4%), and flowers (13.2%). The growth of Nuts, MAPS and Indigenous vegetables has not been fast enough to match the domestic demand of these products mainly the processing industries.

Table 1: Industry Performance by Category, 2011-2013

	2011			2012			2013			% share by value
	Area(Ha)	Quantity (MT)	Value (Ksh)	Area(Ha)	Quantity (MT)	Value (Ksh)	Area(Ha)	Quantity (MT)	Value (Ksh)	
Exotic vegetables	219,431	3,218,429	1,111,790,320	216,108	3,221,225	52,134,985,917	252,651	4,202,393	65,992,794,954	37
Fruits	131,467	2,266,861	773,162,198	148,295	2,405,750	40,633,144,688	159,666	2,728,273	48,913,451,055	28
Flowers	3,349	121,891,436	44,506,056,083	5,086	123,510,784	42,872,537,453	6,239	124,858,139	46,333,368,752	26
Nuts	65,177	133,544	5,776,017,714	67,597	152,224	7,349,496,827	81,568	204,338	7,415,729,104	4
MAPs	12,942	80,980	160,686,400	14,882	85,885	303,044,004	17,732	95,307	4,538,970,850	3
Indegenous Vegetables	31,354	132,614	2,437,075,543	36,133	168,153	3,538,456,172	85,550	176,736	3,579,241,367	2
Asian Vegetables	1,239	13,627	352,338,935	1,397	17,727	1,220,482,162	1,932	18,139	539,287,917	0
Totals	464,959	127,737,491	55,117,127,193	489,498	129,561,748	148,052,147,223	605,338	132,283,325	177,312,843,999	100

Figure 2: Horticulture Industry contribution by Value, 2013



<sup>1</sup> The figures for flowers are based on the export figures. Data obtained during 2013 was not reliable as some farms did not volunteer data. A comprehensive survey on floriculture is scheduled to be conducted to provide the actual production data from the farms.

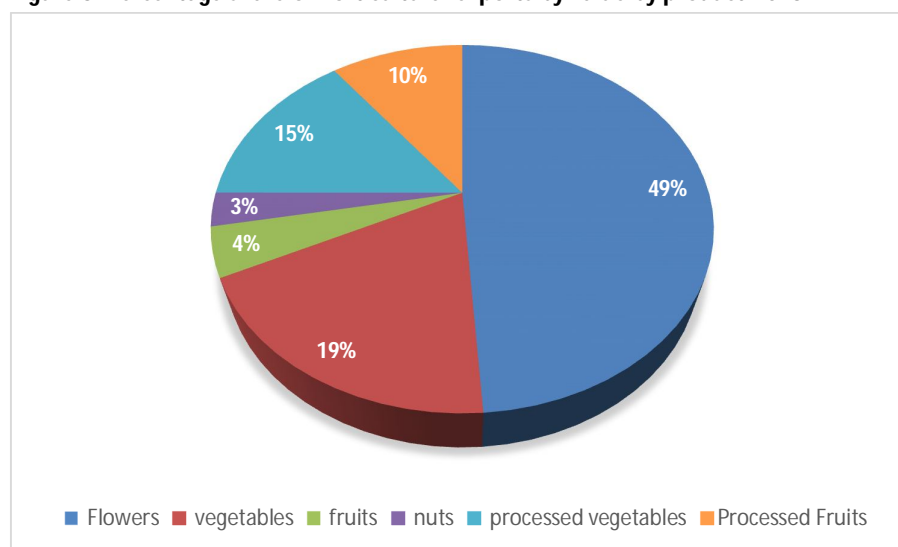
#### 4.1 HORTICULTURAL EXPORTS 2011-2013

The value of horticultural exports as of 2013 was Kshs. 94.7 Billion with flowers constituting 48.7% of the total value. The overall exports in terms of value and quantity increased by 7% and 20% respectively as compared to 2012. With the exception of vegetables, the other subsectors had positive growth. The values and quantities of vegetables dipped by 20% and 41% respectively as compared to 2012 and 2011. This is due to the EU market, which is one of the main destination for Kenyan bean and peas increasing inspection level to every consignment against exceedances to set Maximum Residue Levels. The effect has been increase in number of notification on exporters resulting to a decline in exports.

Table 2: Horticulture Exports, 2011-2013

Product	2011		2012		2013		% change	
	value	Quantity (Kgs)	value	Quantity (Kgs)	value	Quantity (Kgs)	Value	Quantity
Flowers	44,506,056,083	121,891,436	42,872,537,453	123,510,784	46,333,368,752	124,858,139	7%	1%
vegetables	21,513,237,985	92,201,537	21,490,276,838	103,356,938	17,842,756,059	73,541,742	-20%	-41%
fruits	3,626,732,716	37,068,526	4,043,059,592	45,110,395	4,093,256,565	45,638,285	1%	1%
nuts	2,660,083,562	12,999,655	2,945,364,388	12,479,881	2,802,940,552	12,652,581	-5%	1%
processed vegetables	11,636,009,448	38,305,653	9,415,032,764	30,553,573	13,939,321,533	126,677,676	32%	76%
Processed Fruits	7,827,583,444	78,382,021	6,947,505,790	65,410,205	9,729,703,527	93,608,178	29%	30%
<b>Totals</b>	<b>91,229,703,238</b>	<b>380,848,828</b>	<b>87,713,776,825</b>	<b>380,421,776</b>	<b>94,741,346,987</b>	<b>476,976,601</b>	<b>7%</b>	<b>20%</b>

Figure 3: Percentage share of horticultural exports by value by product-2013



## 5 VEGETABLES

### 5.1 OVERALL PERFORMANCE OF VEGETABLES

The vegetables discussed in this chapter consist of main vegetables commonly referred to as exotic vegetables, African leafy vegetables (ALV) and Asian vegetables. The area, production and value of these vegetables combined in 2013 was 340,000 Ha, 4.3 million MT and Kshs 70 billion respectively. The subsector continues to lead by value as compared to the other sectors because of high domestic demand, expanded area and off season production. The area, production and value increased by 25%, 23% and 19%. Previously, onion was reported under vegetables but has now been reported under aromatic plants. Main vegetables which are discussed in 5.2 had the highest value constituting of 94% of the total value of vegetables. This is because of high demand while some of the vegetables like Potatoes are staple crops.

**Table 3: Performance of Vegetables 2011-2013**

Crop	2011			2012			2013			%share by value
	Area (Ha)	Quantity (MT)	Value (Kshs)	Area (Ha)	Quantity (MT)	Value (Kshs)	Area (Ha)	Quantity (MT)	Value (Kshs)	
Main vegetable	219,431	3,218,429	1,111,790,320	216,108	3,221,225	52,134,985,917	252,651	4,202,393	65,992,794,954	94
African leafy	31,575	131,149	50,705,582	36,450	167,429	3,506,781,475	85,990	177,552	3,564,926,657	5
Asian vegetables	1,239	13,628	7,496,572	1,397	17,727	1,220,482,162	1,932	18,139	539,287,917	1
TOTAL	252,245	3,363,206	1,169,992,474	253,955	3,406,381	56,862,249,554	340,573	4,398,084	70,097,009,528	100

### 5.2 MAIN VEGETABLES

The leading vegetables in production and value were potatoes, tomatoes and cabbages as shown in the table 4 below. Initiatives by the government to expand the area under irrigation has resulted to an increase in production particularly for short cycle vegetables like cabbages, carrots and kales. However, the main challenge has always been inaccessibility to quality seeds for other vegetables, lack of value addition technologies and high post-harvest losses.

**Table 4: Performance of Selected Vegetables, 2011-2013**

CROP	2011			2012			2013			%share by value
	Area ('000'Ha)	Quantity ('000' MT)	Value (Million) Ksh	Area ('000'Ha)	Quantity ('000' MT)	Value (Million) Ksh	Area ('000'Ha)	Quantity ('000' MT)	Value (Million) Ksh	
Potato	124.27	1,593.91	474.26	116.69	1,546.00	20,423.70	139.53	2,064.54	28,249.83	43
Tomato	20.58	396.54	230.53	21.87	444.86	12,271.62	23.87	494.04	14,136.82	21
Cabbage	18.64	542.07	141.08	19.25	503.36	6,658.19	25.33	762.26	7,842.45	12
Kales	25.28	418.27	107.10	28.74	366.77	5,730.01	28.56	398.54	5,691.35	9
Carrots	3.83	83.89	52.80	3.69	169.42	2,044.75	5.05	235.05	2,798.89	4
French beans	4.24	28.85	21.10	4.23	33.52	1,272.68	4.53	38.40	1,823.53	3
Garden peas	12.72	56.71	27.94	10.70	46.11	755.72	13.78	60.86	1,582.34	2

<b>Snow pea</b>	1.58	10.52	14.26	1.98	11.57	809.06	2.47	16.54	1,167.12	2
<b>Spinach</b>	4.41	45.92	16.51	4.65	46.77	770.97	4.78	74.78	1,150.60	2
<b>Other vegetables</b>	3.87	41.75	26.21	4.31	52.85	1,398.28	4.74	57.40	1,549.86	2
<b>Total</b>	<b>219.43</b>	<b>3,218.43</b>	<b>1,111.79</b>	<b>216.11</b>	<b>3,221.23</b>	<b>52,134.99</b>	<b>252.65</b>	<b>4,202.39</b>	<b>65,992.79</b>	<b>100</b>

### 5.2.1 Potatoes (*Solanum tuberosum*)

Potato is a key food and nutritional security crop, second to Maize. The area under potatoes in 2013 was 139,532Ha yielding 2.06 million MT valued at Kshs 28.2 billion. Compared to 2012, the area increased by 19.6% while the quantity by 33.5% due to favourable weather especially in Meru County. The largest quantities were produced in Nyandarua, Elgeyo Marakwet, Nakuru, Narok and Meru among other counties representing 25.4%, 14.6%, 12.8%, 11%, 7.2%, and respectively. The importation of seed by the government could have caused the increase in acreage and production while organized marketing especially in Nyandarua County has made the value to go up. It has been proposed by the National Potato council of Kenya that Potato farmers in the 13 potato producing Counties will sell their potatoes in 50 kilograms bags. The main challenge however is duty charged on the jute bag makes it expensive.

Table: Production of Potatoes in Selected Counties, 2011-2013

	2011			2012			2013			
County	Area (Ha)	Quantity (MT)	Value Kshs (million)	Area (Ha)	Quantity (MT)	Value Kshs (million)	Area (Ha)	Quantity (MT)	Value Kshs (million)	Share by Value
Nyandarua	23,385.0	342,600.0	3,869.9	22,059.0	297,482.0	2,392.0	30,508.0	525,120.0	5,050.6	17.9
Elgeyo marakwet	13,324.0	217,516.0	2,571.6	15,817.0	258,129.0	4,092.6	18,355.0	302,305.0	4,577.6	16.2
Meru	11,634.0	149,522.0	4,006.2	10,842.0	133,704.0	3,331.9	11,503.0	148,991.0	3,663.5	13.0
Narok	6,023.0	100,704.0	1,835.0	6,297.0	86,382.0	550.3	7,560.0	226,518.0	2,819.7	10.0
Nakuru	21,803.0	255,223.0	1,074.2	13,675.0	252,751.0	2,335.7	20,373.0	263,401.0	2,317.4	8.2
Kiambu	14,138.0	131,140.0	1,888.6	13,671.0	126,055.0	2,005.0	12,479.0	143,431.0	1,956.2	6.9
Nyeri	10,440.0	105,141.0	1,215.1	9,826.0	112,868.0	1,396.0	11,216.0	131,364.0	1,926.4	6.8
Bomet	3,540.0	46,040.0	2,868.4	2,847.0	43,600.0	1,019.6	3,924.0	74,504.0	1,477.3	5.2
Muranga	5,923.0	31,241.0	626.9	6,423.0	34,952.0	674.0	6,570.0	50,387.0	1,213.7	4.3
Bungoma	6,322.0	57,025.0	831.3	7,015.0	63,330.0	837.3	7,316.0	74,205.0	845.5	3.0
Baringo	1,525.0	50,813.0	420.2	1,714.0	25,909.0	513.7	1,707.0	26,803.0	611.9	2.2
Uasin gishu	986.0	11,785.0	135.6	913.0	13,531.0	199.3	1,145.0	28,025.0	541.3	1.9
Nandi	301.0	5,954.0	140.6	471.0	9,220.0	188.4	547.0	10,983.0	329.5	1.2
Others	4,925.1	89,208.9	806.5	5,116.0	88,087.2	887.8	6,329.0	58,507.4	919.2	3.3
<b>Total</b>	<b>124,269</b>	<b>1,593,913</b>	<b>22,290</b>	<b>116,686</b>	<b>1,546,000</b>	<b>20,423.7</b>	<b>139,532</b>	<b>2,064,544</b>	<b>28,249.8</b>	<b>100.0</b>





	260	1,120	89,600,000	250	1,012	80,960,000	207	840	67,200,000	6
Narok	-	-	-	-	-	-	40	252	22,680,000	2
Kiambu	120	1,080	19,440,000	124	1,092	20,400,000	124	1,012	21,260,000	2
Taita taveta	22	154	7,700,000	7	196	9,800,000	6	172	13,783,600	1
Baringo	17	109	10,880,000	25	213	21,260,000	15	129	12,926,080	1
Others	45	183	17,805,000	70	271	22,160,500	55	256	21,086,667	98
<b>National</b>	<b>1,580</b>	<b>10,516</b>	<b>670,325,000</b>	<b>1,979</b>	<b>11,566</b>	<b>809,060,700</b>	<b>2,470</b>	<b>16,538</b>	<b>1,167,123,847</b>	<b>100</b>

#### 5.2.4 French Bean (*Phaseolus sp.*)

The total production of French bean in 2013 was 38,398 valued at Kshs 1.8 billion. The area, yields and value increased by 7.1%, 14.6% and 43.3% respectively. The leading counties producing french beans were Kirinyaga, Murang'a, Taita Taveta, Meru and Machakos accounting for 39.6%, 12.3%, 9.2%, 8.7% and 6.3% of the total production respectively. French bean is primarily grown for exports with a small quantity consumed in the domestic market. Despite the interceptions and rejections by the market of French beans because of Maximum Residue Levels (MRLs) exports recovered from 22,553MT in 2012 to 31,973MT in 2013. This is attributed to integration of the traceability system in supply enabling exporters to monitor chemical use by farmers directly.

Table 6: Production of French Bean in Selected Counties

County	2011			2012			2013			% share value
	Area (Ha)	Quantity (MT)	Value Kshs (million)	Area (Ha)	Quantity (MT)	Value Kshs (Million )	Area (Ha)	Quantity (MT)	Value Kshs (million)	
Kirinyaga	1918.0	12114.0	398.5	1788.0	10583.0	450.9	1514.0	15222.0	869.4	47.7
Murang'a	803.0	3368.0	103.5	861.0	3848.0	118.5	885.0	4731.0	158.8	8.7
Taita taveta	50.0	1497.0	52.4	51.0	1227.0	43.5	134.0	3514.0	147.6	8.1
Meru	341.0	3206.0	124.7	326.0	6615.0	261.6	367.0	3328.0	130.3	7.1
Embu	74.0	562.0	29.5	56.0	765.0	39.9	176.0	2083.0	124.2	6.8
Machakos	245.8	625.2	28.7	328.6	1759.6	75.2	522.0	2415.0	106.0	5.8
Laikipia	195.0	1500.0	99.0	150.0	1080.0	76.0	185.0	1380.0	89.0	4.9
Narok	115.0	1254.0	61.8	148.0	1718.0	101.0	164.0	1046.0	60.4	3.3
Others	500.0	4726.0	93.5	518.0	5924.0	106.0	581.0	4679.0	137.8	7.6
<b>Total</b>	<b>4,241.8</b>	<b>28,852.2</b>	<b>991.5</b>	<b>4,226.6</b>	<b>33,519.6</b>	<b>1,272.7</b>	<b>4,528.0</b>	<b>38,398.0</b>	<b>1,823.5</b>	<b>100.0</b>

#### 5.2.5 Sugar snaps (*Pisum sativum var. macrocarpon*)

Sugar snaps is grown for export market and insignificant amounts consumed locally. In 2013, it was grown on an area of 2,470 Ha which yielded 16,438 MT with a value of Kshs 1.1 billion. As compared to 2012, the area, production and the yield increased by 24.8%, 43% and 44.3% respectively. This was because of new counties which have stepped up production. The counties producing the largest quantities of Sugar snaps were Nyandarua

(38.8%), Meru (34.7%), Nyeri (10.4%) and Kiambu (6.1%). The exports for this crop declined sharply from 2,022 MT in 2012 to 975.8 MT in 2013.

Table: Production of Sugar Snaps in Selected Counties, 2011-2013

County	2011			2012			2013			share value
	Area (Ha)	Quantity (MT)	Value Kshs (million)	Area (Ha)	Quantity (MT)	Value Kshs (Million)	Area (Ha)	Quantity (MT)	Value Kshs (million)	
Nyandarua	451.0	2,955.0	121.0	446.0	2,512.0	274.5	774.0	6,412.0	545.3	46.7
Meru	406.0	3,405.0	283.2	851.0	5,055.0	309.0	959.0	5,745.0	361.2	30.9
Nyeri	259.0	1,510.0	120.7	206.0	1,215.0	71.1	290.0	1,720.0	101.8	8.7
Laikipia	260.0	1,120.0	89.6	250.0	1,012.0	81.0	207.0	840.0	67.2	5.8
Narok	-	-	-	-	-	-	40.0	252.0	22.7	1.9
Kiambu	120.0	1,080.0	19.4	124.0	1,092.0	20.4	124.0	1,012.0	21.3	1.8
Taita taveta	22.0	154.0	7.7	7.0	196.0	9.8	6.0	172.0	13.8	1.2
Baringo	17.0	109.0	10.9	25.0	213.0	21.3	15.0	129.0	12.9	1.1
Others	45.0	183.0	17.8	70.0	271.0	22.2	55.0	256.0	21.1	1.8
<b>Total</b>	<b>1,580.0</b>	<b>10,516.0</b>	<b>670.3</b>	<b>1,979.0</b>	<b>11,566.0</b>	<b>809.1</b>	<b>2,470.0</b>	<b>16,538.0</b>	<b>1,167.1</b>	<b>100.0</b>

### 5.2.6 Spinach (*Spinacia oleracea*)

Spinach is produced in almost all the counties in the country. The leading producer in 2013 was Kiambu followed by Taita Taveta, Nyandarua, Tharaka, Kajiado, Makueni, Nairobi, Machakos, Narok, Nakuru and Nyeri. The national area under the crop was 4783 Ha with a total production of 74,782.3 MT with a value of Kshs 1.5 billion. There was an overall increase in the area, yield and value by 2.9%, 59.9% and 49.2% respectively as compared to 2012. The County leading in production was Kiambu (46.9%) followed by Nyandarua (10.3%). Poor post-Harvest handling by farmers and traders have contributed to high post-harvest losses in spinach.

Table 7: Production of Spinach in selected Counties 2011-2013

County	2011			2012			2013			share value
	Area (Ha)	Quantity (MT)	Value Kshs (million)	Area (Ha)	Quantity (MT)	Value Kshs (Million)	Area (Ha)	Quantity (MT)	Value Kshs (million)	
Kiambu	1,321.0	18,312.0	321.7	1,120.0	12,457.0	202.2	1,005.0	35,081.0	390.0	33.9
Taita taveta	50.0	1,244.0	28.7	113.0	4,210.0	93.9	145.0	4,589.0	227.1	19.7
Nyandarua	403.0	4,668.0	32.3	485.0	6,362.0	13.2	451.0	7,713.0	57.9	5.0
Tharaka	76.0	799.0	30.5	81.0	883.0	33.0	90.0	973.0	36.6	3.2
Kajiado	217.0	2,014.0	31.8	229.0	2,162.0	34.4	234.0	2,224.0	34.7	3.0
Makueni	71.0	1,089.0	31.9	81.0	1,139.0	27.9	95.0	1,250.0	30.7	2.7
Nairobi	88.0	1,185.2	36.2	93.2	1,176.5	35.4	99.7	1,265.0	30.7	2.7
Machakos	62.4	648.0	11.2	132.0	1,185.1	27.5	200.3	862.3	30.3	2.6
Narok	41.0	169.0	2.2	81.0	524.0	14.3	84.0	2,883.0	29.4	2.6
Nakuru	232.0	2,563.0	24.4	231.0	2,056.0	34.5	238.0	2,140.0	29.1	2.5

	2011			2012			2013			
Nyeri	237.0	2,354.0	25.9	186.0	1,849.0	22.7	248.0	2,425.0	28.6	2.5
Others	1,615.0	10,870.0	199.2	1,819.0	12,763.0	232.0	1,894.0	13,377.0	225.6	19.6
<b>Total</b>	<b>4,413.4</b>	<b>4,5915.2</b>	<b>776.0</b>	<b>4,651.2</b>	<b>46,766.6</b>	<b>771.0</b>	<b>4,784.0</b>	<b>74,782.3</b>	<b>1,150.6</b>	<b>100.0</b>

### 5.2.7 Runner Beans (*Phaseolus coccineus*)

Runner beans is grown by large scale growers in Nyandarua and Meru Counties mostly for export. Meru and Nyandarua account for 87% of the total runner bean production in the country. During the year under review, the runner bean was grown on 323 Ha giving a production of 1,412 MT with a value of Kshs 8.1million. Acreage decreased by 15% but production and value increased by 13% and 4.2% respectively in 2013.

Table 8: Production of Runner Bean in Selected Counties

	2011			2012			2013			
County	Area (Ha)	Quantity (MT)	Value Kshs	Area (Ha)	Quantity (MT)	Value Kshs	Area (Ha)	Quantity (MT)	Value Kshs	Share by Value
Nyandarua	171	222	7,100,000	180	230	7,300,000	186	192	5,820,000	72
Meru	100	1,000	0	150	1,500	1,500,000	120	1,200	1,200,000	15
Kakamega	6	7	494,000	31	31	1,900,000	7	10	1,000,000	12
Kisumu	20	20	200,000	20	20	200,000	10	10	100,000	1
Other counties	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	<b>297</b>	<b>1,249</b>	<b>7,794,000</b>	<b>381</b>	<b>1,781</b>	<b>10,900,000</b>	<b>323</b>	<b>1,412</b>	<b>8,120,000</b>	<b>100</b>

### 5.2.8 Cabbage (*Brassica oleracea var capitata*)

Cabbage is grown in the wet areas of the country and is one of the highly consumed vegetables. In 2013, the country produced 762,263MT of cabbages with a total value of Kshs 7.8 billion. The leading producer of cabbage in the country is Nyandarua County accounting for 23% of total cabbage production in the country. Other counties are Migori, Meru and Bungoma accounting for 20%, 14% and 5% respectively. As compared to 2012, there was a steady increase in area under production, quantity and value of 31.6%, 51.4% and 17.8% respectively.

Table 9: Production of Cabbage in Selected Counties

	2011			2012			2013			
County	Area (Ha)	Quantity (MT)	Value Kshs (million)	Area (Ha)	Quantity (MT)	Value Kshs (Million)	Area (Ha)	Quantity (MT)	Value Kshs (million)	share value
Nyandarua	2157	64375	746.5	2242	62950	712.8	7164	266930	1,786.7	23
Migori	2324	41256	1,429.4	2385	42882	1,486.7	2526	45086	1,570.4	20
Meru	1975	91259	933.2	2036	95831	988.8	2240	106763	1,087.1	14
Bungoma	1282	31387	313.8	1377	33167	324.8	1573	38953	354.8	5

Bomet	940	29700	394.0	1006	27619	282.9	1121	31810	343.7	4
other counties	9959.1	284093	2,813,785,109	10205	240908	2,862.2	10710.3	272721	2,699.5	34
TOTAL	18637	542070	6,630.8	19251	503357	6,658.2	25334	762263	7,842.5	100

### 5.2.9 Kale (*Brassica oleracea var. acephala*)

Kale is the most popular leafy vegetable consumed locally. This is because of its short production cycle and high productivity under good management. In 2013, the area under production of Kale was 28,564 Ha which produced 398,000 MT with a value of Kshs 5.7 billion. The leading counties in Kale production were Migori accounting for 23% followed by Kiambu (14%) and Kisii (8%).

Table 10: Production of Kale in Selected Counties 2013

County	2011			2012			2013			Share by Value
	Area (Ha)	Quantity (MT)	Value Kshs (million)	Area (Ha)	Quantity (MT)	Value Kshs (million)	Area (Ha)	Quantity (MT)	Value Kshs (million)	
Migori	4,004	55,470	1,333.7	4,480	61,078	1,411.6	4,168	57,054	1,323.0	23
Kiambu	4,82	127,743	865.5	5,772	38,963	1,128.1	5,385	31,075	781.4	14
Kisii	1,999	39,516	386.3	1,886	36,938	393.2	2,033	40,660	444.8	8
Narok	260	4,791	51.9	654	9,007	99.3	713	31,242	314.5	6
Bungoma	1,119	17,458	270.4	1,739	28,695	300.5	1,827	30,320	311.5	5
Other counties	13,112	173,290	2,125.9	14,204	192,089	2,397.3	14,438	208,184	2,516.0	44
TOTAL	25,276	418,268	5,033.8	28,735	366,770	5,730.0	28,564	398,535	5,691.4	100

### 5.2.10 Garden Pea (*Pisum sativum*)

The area under garden pea increased from 10,703 Ha in 2012 to 13,782 Ha in 2013, an increase of 28.8%. The production also increased from 46,112 tons to 60,855 tons, an increase of 32% during the same period. The major county producing garden peas was Nyandarua accounting for 61.4% of the total production and 66.2% of the total value. Other Counties producing the crop were Nakuru, Uasin Gishu, Laikipia, Nyeri, Kiambu and Meru among other counties. The crop is consumed domestically and also exported with other crops as a mixed prepack.

Table: Production of Garden Peas by Selected Counties, 2011-2013

County	2011			2012			2013			Share by Value
	Area (Ha)	Quantity (MT)	Value Kshs (million)	Area (Ha)	Quantity (MT)	Value Kshs (million)	Area (Ha)	Quantity (MT)	Value Kshs (million)	
Nyandarua	6,837	27,568	625	6,052	23,962	190	8,323	37,343	1,048	66
Nakuru	3,524	17,042	252	2,384	11,464	196	2,642	13,018	196	12

Uasin gishu	141	1,158	58	146	1,283	63	153	2,388	91	6
Laikipia	1,120	515	16	1,070	510	16	1,730	1,292	43	3
Nyeri	213	1,983	62	185	1,561	50	177	1,406	42	3
Kiambu	215	3,945	214	127	2,245	124	72	1,078	33	2
Meru	160	824	30	178	914	33	146	770	29	2
Baringo	35	280	14	54	421	24	52	405	23	1
Kericho	26	104	3	29	116	3	25	100	16	1
Elgeyo marakwet	209	2,025	10	223	2,142	22	167	1,670	16	1
Others	243	1,269	28	256	1,494	36	295	1,385	46	3
<b>Total</b>	<b>12,723</b>	<b>56,713</b>	<b>1,313</b>	<b>10,704</b>	<b>46,112</b>	<b>756</b>	<b>13,782</b>	<b>60,855</b>	<b>1,582</b>	<b>100</b>

### 5.2.11 Carrot (*Daucus carota*)

Carrot is produced for the domestic market although small quantities of baby carrots are exported. In 2013, the area under carrots was 5051.8 Ha, producing 235,045.5 MT valued at Kshs 2.8 billion. The leading producer of the crop was Kiambu county accounting for 49.6% of the total production followed by Nyandarua 11%, Nyeri 9.1% and Kisumu 8.1%. The area and production volumes increased by 36.9% and 38.7% respectively in 2013 as compared to 2012. The value increased by 36.9% due to favorable weather conditions and organized marketing especially of farmers in Nyandarua county.

**Table 11: Production of Carrots in selected Counties 2011-2013**

County	2011			2012			2013			Share by Value
	Area (Ha)	Quantity (MT)	Value Kshs (million)	Area (Ha)	Quantity (MT)	Value Kshs (million)	Area (Ha)	Quantity (MT)	Value Kshs (million)	
Kiambu	746.0	22701.0	1493.4	676.0	108974.0	1097.2	661.0	133469.0	1388.5	49.6
Nyandarua	726.0	13197.0	177.7	647.0	14595.0	137.0	1236.0	26238.0	310.3	11.1
Nyeri	273.0	23587.0	238.1	256.0	19953.0	202.1	297.0	25219.0	255.6	9.1
Kisumu	131.0	1763.0	46.2	101.0	1445.0	38.8	551.0	9746.0	227.7	8.1
Meru	956.0	9228.0	147.5	1037.0	10484.0	169.3	1138.0	11262.0	179.2	6.4
Embu	75.0	1463.0	134.8	76.0	2115.0	141.4	65.0	1853.0	133.3	4.8
Kisii	150.0	3594.0	82.1	138.0	3396.0	78.1	157.0	3793.0	87.8	3.1
Others	774.65	8358	162.04	759.2	8461.5	181.	946.8	23465.5	216.6	7.7
<b>Total</b>	<b>3831</b>	<b>83891.0</b>	<b>2481.8</b>	<b>3690.2</b>	<b>169424</b>	<b>2044.7</b>	<b>5051.8</b>	<b>235,046</b>	<b>2798.9</b>	<b>100</b>

### 5.2.12 Courgettes (*Cucurbita pepo*)

Courgettes are consumed in small quantities in the domestic market with majority of the quantities going to the export market in mixed pre-packs. During the year under review, Courgettes were planted on 584.3Ha and production was 6,097MT with a value of Kshs 237.1 Million. The area under production increased by 72Ha in 2013 resulting to a 16% increase in production and 84% increase in Value. The main producer of the crop was Kiambu (37.5% total value) while Taita taveta and Meru total production was valued at 41.9%. Kiambu produces large quantities for the Nairobi population which has the largest demand.

Table 12: Production of Courgettes by Selected Counties

County	2011			2012			2013			Share by Value (%)
	Area (Ha)	Quantity (MT)	Value Kshs (million)	Area (Ha)	Quantity (MT)	Value Kshs (million)	Area (Ha)	Quantity (MT)	Value Kshs (million)	
Kiambu	260	1990	77.7	279	2589	60	257	2087	89.0	37.5
Taita Taveta	12	324	8.1	27	513	13	75	1425	66.0	27.8
Meru	48	1584	42.0	36	1188	31	39	1264	33.5	14.1
Murang'a	57	155	4.2	73	248	7	96	580	22.6	9.5
Kajiado	4	140	0.7	6	176	1	10	120	7.2	3.2
Other counties	128.1	481.4	14.2	91.7	551.1	16	107.3	621	18.8	7.9
<b>All county total</b>	<b>509.1</b>	<b>4674.4</b>	<b>146.9</b>	<b>512.8</b>	<b>5265</b>	<b>129</b>	<b>584.3</b>	<b>6097</b>	<b>237.1</b>	<b>100</b>

### 5.2.13 Sweet Pepper (*Capsicum annum*)

Sweet pepper is mainly consumed by the urban population in hotels and households. They are produced both in the green house and outdoors. In 2013, a total of 1,104 Ha was planted with sweet pepper giving a production of 12,517 MT with a value of Kshs 345 Million. The main producing county was Taita taveta accounting for 30% of total production although production of the crop was valued higher in Kiambu (25%) and Tana River (13%). The main challenge facing the crop is bacterial wilt which has rendered traditional production areas to be unproductive.

Table 13: Production of Sweet Pepper in Selected Counties

County	2011			2012			2013			Share by Value (%)
	Area (Ha)	Quantity (MT)	Value Kshs (million)	Area (Ha)	Quantity (MT)	Value Kshs (million)	Area (Ha)	Quantity (MT)	Value Kshs (million)	
Kiambu	143	1308	99	236	1951	163	222	1822	86	25
Tana River	42	1128	28	39	1203	30	42	1152	45	13
Taita Taveta	88	1177	23	122	2179	35	130	3706	25	7
Nairobi	17	98.9	11	19	142.6	14	26.8	205.8	24	7
Lamu	13	133	3	61	885	22	74	1110	22	6
other counties	419	3135	94	500	3886	133	609	4521	143	42
<b>All counties total</b>	<b>722</b>	<b>6980</b>	<b>259</b>	<b>977</b>	<b>10247</b>	<b>397</b>	<b>1104</b>	<b>12517</b>	<b>345</b>	<b>100</b>

### 5.2.14 Broccoli (*Brassica oleraceae var italica*)

Broccoli is produced for the upscale market in the urban centres and hotels as well as for export. The largest production is in Meru (37%), followed by Kiambu (31%) and Kisumu (13%). As compared to 2012, there was a steady growth in area, tonnage as well as value in 2013 of 157.5%, 49.6% and 23.4% respectively. The total value of the crop was Kshs 66 Million.

Table 14: Production of Broccoli by Selected Counties

County	2011			2012			2013			Share by Value
	Area (Ha)	Quantity (MT)	Value Kshs	Area (Ha)	Quantity (MT)	Value Kshs	Area (Ha)	Quantity (MT)	Value Kshs	



										Value
Makueni	200	1,520	34,234,000	210	1,560	38,700,000	225	1,620	47,700,000	59
Laikipia	75	750	15,000,000	39	390	10,800,000	40	395	10,800,000	13
Nyeri	48	384	9,600,000	36	288	7,200,000	41	328	8,200,000	10
Kirinyaga	127	1,443	21,055,000	112	1,307	19,595,000	42	453	5,471,462	6
Meru	40	240	5,040,000	30	180	3,780,000	26	156	3,276,000	4
Other counties	63	460	7,582,000	75	515	8,438,000	73	406	6,440,000	8
<b>Total</b>	<b>553</b>	<b>4,797</b>	<b>92,511,000</b>	<b>502</b>	<b>4,240</b>	<b>88,513,000</b>	<b>447</b>	<b>3,358</b>	<b>81,887,462</b>	<b>100</b>

### 5.2.17 Lettuce (*Lactuca sativa*)

Lettuce is a speciality crop mainly used in hotels and restaurants for preparing vegetable salads. There is little consumption at household level. The total area occupied by Lettuce during the year under review was 118.5 Ha that produced 3,760.2 MT with a total value of Kshs 87.4 million. As compared to 2012, this was an increase in value of the crop due to increased production. The County that produced the largest quantities of Lettuce was Taita taveta accounting for 88% and 77% of the total production and value respectively. The challenge of producing in other parts of the country is the low domestic demand.

Table 16: Production of Lettuce by County

County	2011			2012			2013			Share by Value (%)
	Area (Ha)	Quantity (MT)	Value Kshs (million)	Area (Ha)	Quantity (MT)	Value Kshs (million)	Area (Ha)	Quantity (MT)	Value Kshs (million)	
Taita Taveta	10	150	3.8	20	706	18.1	65	3318	67.1	76.7
Kiambu	53	785	28.3	56	668	23.9	38	353	15.9	18.2
Nairobi	16.5	99	3.2	13.8	64	2.5	13.5	81.2	3.7	4.2
Kakamega	1	3	0.1	1	4	0.6	1	5	0.6	0.7
Nyeri	0	1	0.1	0	2	0.2	0	2	0.1	0.1
Other counties	1	1	0.1	1	1	0.1	1	1	0.1	0.1
<b>All counties total</b>	<b>81.5</b>	<b>1039</b>	<b>35.5</b>	<b>91.8</b>	<b>1445</b>	<b>45.3</b>	<b>118.5</b>	<b>3760.2</b>	<b>87.4</b>	<b>100</b>

### 5.2.18 Cauliflower (*Brassica oleracea var botrytis*)

The crop has low demand in the domestic market and is grown mainly for the upper class in the urban centres. In 2013, 2,042 MT of cauliflower with a value of Ks. 29.7 Million was produced on 87.2 Ha of land. The leading county in production was Taita taveta accounting for 68% of the total production and 24.1% of the value. Kiambu was the leading county leading in terms of value. This was because Kiambu is near Nairobi where the demand for Cauliflower is higher compared to other counties.

Table 17: Production of Cauliflower in Selected Counties



County	2011			2012			2013			Share by Value (%)
	Area (Ha)	Quantity (MT)	Value Kshs (million)	Area (Ha)	Quantity (MT)	Value Kshs (million)	Area (Ha)	Quantity (MT)	Value Kshs (million)	
Kiambu	57	885	30.1	63.0	3248	62.0	41	481	14.2	47.8
Taita Taveta	0	0	0.0	12.0	378	1.6	27	1381	7.2	24.1
Nairobi	17.3	81.5	4.5	18.3	74	3.8	14.2	116	6.2	20.7
Nyandarua	0	0	0.0	0.0	0	0.0	2	30	1.5	5.1
Kakamega	5	50	1.0	4.0	40	0.8	3	34	0.7	2.3
Other counties	0	0	0.0	0.0	0	0.0	0	0	0.0	0.0
<b>All counties total</b>	<b>79.3</b>	<b>1017</b>	<b>35.6</b>	<b>97.3</b>	<b>3740</b>	<b>68.2</b>	<b>87.2</b>	<b>2042</b>	<b>29.7</b>	<b>100</b>

### 5.2.19 Beetroot (*Beta vulgaris*)

The crop is regarded as medicinal though it's consumed in small quantities either in fruit or vegetable salad. The area under Beetroot in 2013 was 63 Ha that produced 657 MT with a domestic value of Kshs 22 Million. The counties that had the highest production were Nyeri (37%), Kiambu (21%) and Nairobi (18%).

Table 18: Production of Beetroot in Selected Counties

County	2011			2012			2013			Share by Value
	Area (Ha)	Quantity (MT)	Value Kshs	Area (Ha)	Quantity (MT)	Value Kshs	Area (Ha)	Quantity (MT)	Value Kshs	
Nyeri	35	421	8,475,000	30	363	7,380,000	34	411	8,403,000	37
Kiambu	8	52	3,180,000	14	108	5,400,000	11	68	4,650,000	21
Nairobi	5	46	1,730,000	7	66	2,530,000	11	106	4,130,000	18
Nandi	0	0	0	0	0	0	1	31	3,125,000	14
Nyandarua	0	0	0	0	0	0	1	20	2,000,000	9
Other counties	38	16	133000	3	32	1409000	5	21	327000	1
<b>Total</b>	<b>86</b>	<b>535</b>	<b>13,518,000</b>	<b>54</b>	<b>569</b>	<b>16,719,000</b>	<b>63</b>	<b>657</b>	<b>22,635,000</b>	<b>100</b>

### 5.2.20 Cucumbers (*Cucumis sativus*)

Cucumber is produced in small quantities in the country because of its low demand with the main market being the urban population, hotels and other institutions offering catering services. In 2013, the crop was produced on 284 Ha producing 3,764 MT with a domestic value of Kshs 95 Million. The Counties leading in production value were Kisumu (44%), Taita Taveta (25%) and Murang'a (10%). The area under production increased by 23% while production and total value increased by 38% and 36% respectively from the previous year. Other counties with urban centres such as Uasin Gishu, Kisumu and Mombasa Counties Have the potential to produce more.

Table 19: Production of Cucumber in Selected Counties

County	2011			2012			2013			Share by
	Area (Ha)	Quantity (MT)	Value Kshs	Area (Ha)	Quantity (MT)	Value Kshs	Area (Ha)	Quantity (MT)	Value Kshs	

			(million)			(million)			(million)	Value (%)
Kisumu	0	0	0	0	0	0	70	1052	42	44
Taita Taveta	35	684	13	64	1397	38	69	1476	24	25
Murang'a	56	341	7	63	531	11	62	380	9	10
Meru	17	170	4	17	170	4	16	162	3	4
Busia	20	153	6	15	121	5	10	81	3	3
Other counties	53	547	20	72	517	13	57	613	13	14
<b>National total</b>	<b>181</b>	<b>1895</b>	<b>49</b>	<b>231</b>	<b>2737</b>	<b>70</b>	<b>284</b>	<b>3764</b>	<b>95</b>	<b>100</b>

### 5.2.21 Radish

The crop does not command such a high demand in the domestic market but is consumed in international hotels in the urban centres where it is used to make nutritious soups and salads. It is also mainly consumed by the Asian community which forms their main niche market. The crop is mainly produced for the export market. In 2013 the area under production was 39 Ha, 178.6% increase from 2012. Production and value also increased from 250 MT and Kshs 4,958,000 in 2012 to 368 MT and Kshs 9,468,000 in 2013, an increase of 47.2% and 91% respectively. The leading county in both production and value was Mombasa with 45.9 and 63%.

**Table 20: Radish production in selected Counties**

Counties	2011			2012			2013			% share value
	Area(Ha)	Quantity (MT)	Value (Kshs)	Area(Ha)	Quantity (MT)	Value (Kshs)	Area(Ha)	Quantity (MT)	Value (Kshs)	
Mombasa	11	24	720,000	3	69	2,055,000	26	169	5,955,000	63
Kiambu	10	180	2,700,000	10	180	2,700,000	8	160	2,450,000	26
Taita taveta	0	0	0	0	0	0	1	20	600,000	6
Kilifi	0	0	0	0	0	0	2	8	240,000	3
Nyandarua	0	0	0	0	0	0	1	10	200,000	2
Other counties	0	0	0	1	1	203000	1	1	23000	0
<b>National Total</b>	<b>21</b>	<b>204</b>	<b>3,420,000</b>	<b>14</b>	<b>250</b>	<b>4,958,000</b>	<b>39</b>	<b>368</b>	<b>9,468,000</b>	<b>100</b>

### 5.2.22 Turnip

Turnips are not a high demand vegetables since their niche market is mainly Asian community market, hence produced for the export market with some for international hotels in urban centres. The leading county in production was Kiambu with 59.5% production share and 63% value share. A total of 84 MT valued at Ksh 1.97 million was produced in 2013, an increase of 75% and 64.2% respectively. Emerging counties in production are Nyandarua and Mombasa amongst other counties.

**Table 21: Turnip production in selected counties 2011-2013**

	2011	2012	2013
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County	Area (Ha)	Quantity (MT)	Value (Kshs)	Area (Ha)	Quantity (MT)	Value (Kshs)	Area (Ha)	Quantity (MT)	Value (Kshs)	%share by value
Kiambu	4	48	1,200,000	4	48	1,200,000	4	50	1,250,000	63
Nyandarua	0	0	0	0	0	0	1	30	600,000	30
Mombasa	0	0	0	0	0	0	0	4	120,000	6
Other counties	0	0	0	0	0	3000	0	0	3000	0
<b>National Total</b>	<b>4</b>	<b>48</b>	<b>1,200,000</b>	<b>4</b>	<b>48</b>	<b>1,203,000</b>	<b>5</b>	<b>84</b>	<b>1,973,000</b>	<b>100</b>

### 5.2.23 Mushrooms (*Agaricus bisporus*)

There was lack of data on mushroom in all the counties despite the promotion on its production by Jomo Kenyatta University of Agriculture and Technology (JKUAT) and Kenya Agricultural Research Institute (KARI).

### 5.3 AFRICAN LEAFY VEGETABLES

The area under ALVs Has been increasing over the years from 31,864 Ha in 2011 to over 40,000 Ha in 2013. Of particular importance, there has been a significant increase in the area under Cowpea which is used both as a vegetable and cereal. Potential for value addition exist for these vegetables through solar drying, however, awareness creation is required to increase consumption. The performance of the individual ALVs are discussed separately but overall performance is summarized in the table below.

Table: Performance of Leafy vegetables 2011-2013

Crop	2011			2012			2013			% Share by value
	Area (Ha)	Qty (MT)	Value (Kshs)	Area (Ha)	Qty (MT)	Value (Kshs)	Area (Ha)	Qty (MT)	Value (Kshs)	
Cow peas	22,820	60,436	682,996,566	26,301	79,516	1,226,675,228	29,761	82,125	998,220,468	28
African nightshade	2,167	14,492	335,267,843	2,569	17,351	495,058,963	2,687	19,624	609,525,633	17
Pumpkin fruit	1,046	20,588	532,452,500	1,298	24,702	783,943,650	1,342	28,150	874,966,284	25
Spider plant	1,875	12,067	363,417,850	2,256	19,428	462,050,100	2,336	21,507	539,608,112	15
Leaf Amaranth	902	9,309	183,347,263	1,054	11,145	200,343,695	1,141	11,985	229,266,306	6.5
Russian comfrey/ mafaki	37	152	1,621,000	46	207	2,599,000	45	184	2,933,001	0.08
Grain Amaranth	529	4,578	95,736,201	507	3,948	89,484,200	374	1,327	46,855,500	1.32
Malabo gourd/ kahurura	37	152	1,621,000	46	207	2,599,000	45	184	2,933,001	0.08
Pumpkin leaves	775	3,332	38,628,531	819	3,515	56,838,303	886	4,175	67,572,752	1.9
Jute mallow	911	4,139	90,561,500	1,035	4,686	104,237,250	1,002	5,325	107,904,250	3.0
Slender leaf/Rattle pod/ Mitoo	382	1,246	42,323,300	418	1,977	63,015,715	452	2,365	69,772,200	2.0
Stinging nettle	387	1,275	1,650,000	399	1,304	1,734,762	313	1,317	1,827,000	0.05
<b>ALF Total</b>	<b>31,868</b>	<b>131,766</b>	<b>2,369,623,554</b>	<b>36,748</b>	<b>167,986</b>	<b>3,488,579,866</b>	<b>40,384</b>	<b>178,268</b>	<b>3,551,384,507</b>	<b>100</b>

#### 5.3.1 Leaf Amaranth (*Amaranthus Sp*)

Leaf Amaranth also known as African Spinach is produced wholly for the domestic market by almost all the counties in the country. It is consumed in combination with other leafy vegetables and is rich in iron. The leading counties in production were Kilifi, Lamu and Migori accounting for 29%, 11% and 11% of total Leaf amaranth produced in the year under review. The major challenges in production are inadequate supply of certified seeds and lack of postharvest processing that could reduce the high losses.

Table 22: Production of Leafy Amaranth in Selected Counties

County	2011			2012			2013			% Share by Value
	Area (Ha)	Quantity (MT)	Value Kshs	Area (Ha)	Quantity (MT)	Value Kshs	Area (Ha)	Quantity (MT)	Value Kshs	
Kilifi	177	3,400	68,000,000	177	3,290	65,800,000	176	3,371	67,400,000	29

Lamu	0	0	0	63	1,260	25,200,000	57	855	25,650,000	11
Migori	90	243	10,037,500	100	410	15,414,000	129	630	24,344,000	11
Mombasa	68	1,486	29,720,000	82	1,058	18,050,000	70	969	23,160,000	10
Vihiga	39	79	1,668,000	40	69	4,180,000	44	105	13,010,000	6
Kisii	86	797	10,132,500	102	952	11,732,500	110	1,032	12,985,000	6
Other counties	442.0	3304	63789263	490	4106	59967195	555	5022.8	62717306	27
<b>National Total</b>	<b>902</b>	<b>9,309</b>	<b>183,347,263</b>	<b>1,054</b>	<b>11,145</b>	<b>200,343,695</b>	<b>1,141</b>	<b>11,985</b>	<b>229,266,306</b>	<b>100</b>

### 5.3.2 Grain Amaranth (*Amaranthus Sp*)

Grain Amaranth is largely produced for making flour and as a food additive. In 2013, the area under grain Amaranth was 374 Ha yielding 1,327 MT that was valued at Kshs 46 Million. The leading county in the production of this crop was Siaya with 32% of the total production.

Table 23: Production of Grain Amaranth in Selected Counties

	2011			2012			2013			
County	Area (Ha)	Quantity (MT)	Value Kshs	Area (Ha)	Quantity (MT)	Value Kshs	Area (Ha)	Quantity (MT)	Value Kshs	Share by Value
Siaya	49	291	8,046,000	69	335	9,455,000	102	505	14,761,000	32
Kisii	165	2,250	30,600,000	176	2,255	37,425,000	22	95	5,900,000	13
Kakamega	99	183	3,410,000	83	70	3,579,400	97	251	5,092,000	11
Busia	37	100	8,900,000	31	84	7,422,000	32	55	4,908,000	10
Homabay	32	112	6,324,000	36	110	5,112,500	33	102	4,725,000	10
Other counties	147	1,642	38,456,201	112	1,094	26,490,300	88	319	11,469,500	25
National Total	529	4,578	95,736,201	507	3,948	89,484,200	374	1,327	46,855,500	100

### 5.3.3 African Nightshade (*Solanum nigrum complexes*)

The crop is popular in Kisii and Nyamira Counties, has gradually become popular nationally hence increasing its demand in urban centres. The area under Nightshade was 2,687 Ha in 2013 with a production of 1,9624 MT of which 36% was produced in Nyamira and Kisii County. The total value was Kshs 609 million. The major challenge in production of the crop is inadequate supply of certified seeds and poor postharvest handling processes in terms of packaging, transportation and distribution.

Table 24: Production of African Nightshade in Selected Counties

	2011			2012			2013			
County	Area (Ha)	Quantity (MT)	Value Kshs	Area (Ha)	Quantity (MT)	Value Kshs	Area (Ha)	Quantity (MT)	Value Kshs	Share by

										Value
Kisii	397	3,596	80,460,000	387	3,508	124,720,000	406	3,700	120,920,000	20
Nyamira	288	2,135	60,735,000	326	2,844	81,952,500	379	3,370	99,220,000	16
Narok	30	600	30,000,000	72	1,440	72,000,000	80	1,600	80,000,000	13
Kericho	44	255	7,603,000	49	322	10,514,000	58	876	43,800,000	7
Kakamega	113	412	20,410,000	175	517	21,877,300	173	536	35,668,000	6
Other counties	1294.75	7493.8	136059843	1559.7	8720	183995163	1590.6	9542.4	229917633	38
<b>National Total</b>	<b>2,167</b>	<b>14,492</b>	<b>335,267,843</b>	<b>2,569</b>	<b>17,351</b>	<b>495,058,963</b>	<b>2,687</b>	<b>19,624</b>	<b>609,525,633</b>	<b>100</b>

### 5.3.4 Cowpea leaves (*Vigna unguiculata*)

Cowpea is produced for the domestic market. It is commonly referred to as 'Kunde'. The largest quantity of cowpeas was produced in Migori (11%) and Kilifi (10%). Other counties that produced the crop were Siaya and Makueni accounting for 9% and 8% respectively of the total production. The crop is highly susceptible to rust during the hot weather while availability of certified seeds is a major challenge.

Table 25: Production of Cowpea Leaves in Selected Counties

County	2011			2012			2013			Share by Value
	Area (Ha)	Quantity (MT)	Value Kshs	Area (Ha)	Quantity (MT)	Value Kshs	Area (Ha)	Quantity (MT)	Value Kshs	
Migori	615	3,818	84,400,750	681	3,959	89,320,000	795	4,625	108,710,000	11
Kilifi	1,821	7,206	88,420,000	3,753	6,832	80,940,000	4,129	8,667	102,440,000	10
Siaya	882	4,051	53,567,000	984	7,107	311,150,000	1,123	5,197	93,110,000	9
Makueni	3,980	16,152	84,321,036	4,037	16,673	88,321,039	3,809	15,168	81,326,454	8
Machakos	20	130	5,350,000	1,082	3,702	58,180,000	1,593	5,441	78,640,000	8
Other counties	15,501.95	29,079.25	36,693,7780	15,763.62	41,243.1	5,987,64189	18,311.7	43,026.5	5,339,94014	53
<b>National Total</b>	<b>22,820</b>	<b>60,436</b>	<b>682,996,566</b>	<b>26,301</b>	<b>79,516</b>	<b>1,226,675,228</b>	<b>29,761</b>	<b>82,125</b>	<b>998,220,468</b>	<b>100</b>

### 5.3.5 Jute mallow (*Corchorus olitorius*)

It is commonly referred to as Mrenda and is prepared together with other vegetables. In 2013, the area under jute production was 1,002 Ha, yielding 5,325 MT valued at 107 million. The Counties leading in Jute mallow production were Kisumu (34%), Mombasa (23%) and Nyamira (13%). The traditional growers have been Vihiga, Kisumu, and Kakamega among other counties in Western.

**Table 26: Production of Jute mallow in selected Counties**

County	2011			2012			2013			Share by Value
	Area (Ha)	Quantity (MT)	Value Kshs	Area (Ha)	Quantity (MT)	Value Kshs	Area (Ha)	Quantity (MT)	Value Kshs	
Kisumu	521	2,603	59,150,000	587	2,958	67,375,000	342	1,710	36,500,000	34
Mombasa	2	2	17,000	3	3	30,000	164	1,640	24,600,000	23
Nyamira	101	606	12,500,000	101	607	12,500,000	103	607	14,500,000	13
Siaya	25	224	4,400,000	28	279	7,820,000	30	339	8,290,000	8
Kakamega	40	61	5,510,000	53	41	4,400,000	53	76	4,892,000	5
Other counties	222	643	8984500	263	798	12112250	310	953	19122250	18
<b>National Total</b>	<b>911</b>	<b>4,139</b>	<b>90,561,500</b>	<b>1,035</b>	<b>4,686</b>	<b>104,237,250</b>	<b>1,002</b>	<b>5,325</b>	<b>107,904,250</b>	<b>100</b>

### 5.3.6 Pumpkin Leaves (*Cucurbita maxima*)

Pumpkin can be grown for its fruit or leaves in homesteads. The leaves are a delicacy for some communities therefore grown specifically for the leaves which affect the production of the pumpkin fruit. In 2013, the area planted was 886 Ha producing 4,175 MT with a value of Kshs67 Million. There was a steady increase in the area under production, tonnage and value. The leading counties in pumpkin leaves production were Bungoma (31%), Kakamega (21%), Kisii (12%) and Machakos (7%).

**Table 27: Production of Pumpkin Leaves in Selected Counties**

County	2011			2012			2013			Share by Value
	Area (Ha)	Quantity (MT)	Value Kshs	Area (Ha)	Quantity (MT)	Value Kshs	Area (Ha)	Quantity (MT)	Value Kshs	
Bungoma	409	2,076	10,170,001	409	2,076	20,770,000	459	2,327	20,820,000	31
Kakamega	90	277	8,790,000	91	265	10,400,000	99	294	13,913,000	21
Kisii	68	414	6,920,000	62	401	7,140,000	68	432	7,940,000	12
Machakos	14	48	2,575,000	16	48	2,604,000	25	74	4,731,200	7
Kericho	0	0	0	0	0	0	5	125	3,125,000	5
Other counties	194.2	517.4	10173530	241.2	725.4	15924303	230.2	923.4	17043552	25
<b>National Total</b>	<b>775</b>	<b>3,332</b>	<b>38,628,531</b>	<b>819</b>	<b>3,515</b>	<b>56,838,303</b>	<b>886</b>	<b>4,175</b>	<b>67,572,752</b>	<b>100</b>

### 5.3.7 Pumpkin fruit (*Cucurbita maxima*)

The fruit is mainly used for baby foods as well as being a food security crop though the production is still low. During the year under review, 1,342 Ha was planted with the crop producing 2,8150 MT with a value of Kshs 874 Million. Bungoma, Lamu and Kericho are the leading producers of the fruit accounting for 63%,9% and 5% respectively of the total production.

Table 28: Production of Pumpkin Fruit in Selected Counties

County	2011			2012			2013			Share by Value
	Area (Ha)	Quantity (MT)	Value Kshs	Area (Ha)	Quantity (MT)	Value Kshs	Area (Ha)	Quantity (MT)	Value Kshs	
Bungoma	367	10,634	303,944,000	419	12,129	504,726,000	430	12,441	555,190,000	63
Lamu	87	1,275	44,985,000	110	1,875	63,000,000	182	4,375	75,000,000	9
Kericho	65	1,285	32,460,000	67	1,341	31,500,000	51	1,275	41,000,000	5
Kakamega	78	1,406	31,400,000	88	1,488	33,700,000	94	1,583	34,643,000	4
Siaya	25	220	8,300,000	35	470	20,802,000	39	519	23,001,000	3
Other counties	424	5768	111363500	579.2	7399	130215650	546.2	7957	146132284	17
<b>National Total</b>	<b>1,046</b>	<b>20,588</b>	<b>532,452,500</b>	<b>1,298</b>	<b>24,702</b>	<b>783,943,650</b>	<b>1,342</b>	<b>28,150</b>	<b>874,966,284</b>	<b>100</b>

### 5.3.8 Rattle pod (*Crotalaria brevidens*)

Rattle pod is locally referred to as Mitoo and is produced for the domestic market. It has also been said to have health benefits particularly to the sick. In 2013, the area under production was 452 Ha compared to 418 Ha in 2012. The yield was 2,365 MT valued at 69 million. However, the crop is faced with inadequate supply of certified seed. More so it is grown under minimal inputs reducing its productivity. The leading counties in production were Siaya (36%), Kakamega (25%), and Trans Nzoia (14%).

Table 29: Production of Rattle Pod in Selected Counties

County	2010	2011			2012			Share by Value		
	Area (Ha)	Quantity (MT)	Value Kshs (	Area (Ha)	Quantity (MT)	Value Kshs	Area (Ha)		Quantity (MT)	Value Kshs
Siaya	63	380	12,300,000	80	490	19,990,000	117	547	25,050,000	36
Kakamega	65	160	18,420,000	81	158	16,515,000	64	172	17,729,000	25
Trans nzoia	20	55	1,700,000	28	644	11,920,000	32	960	9,600,000	14
Homa bay	49	156	2,077,500	56	191	4,486,290	63	209	5,176,250	7
Migori	61	147	2,155,000	52	156	2,015,620	44	117	3,047,750	4
other counties	124	348	5670800	121	338	8088805	132	360	9169200	13
<b>National Total</b>	<b>382</b>	<b>1,246</b>	<b>42,323,300</b>	<b>418</b>	<b>1,977</b>	<b>63,015,715</b>	<b>452</b>	<b>2,365</b>	<b>69,772,200</b>	<b>100</b>

### 5.3.9 Spider plant (*Cleome gynandra*)

Spider plant is locally known as Sagaa and is grown for the domestic market. In 2013 there was a steady increase in production area, yield and value compared to 2012. Kisii and Nyamira were the largest producers in 2013. Other producing counties were Kericho, Migori and Siaya.



Table 30: Production of Spider Plant in Selected Counties

County	2011	2012	2013			Share by Value				
	Area (Ha)	Quantity (MT)	Value Kshs	Area (Ha)	Quantity (MT)		Value Kshs			
Kisii	326	3,933	142,082,500	309	3,812	151,975,000	340	4,139	161,450,000	30
Nyamira	554	3,286	70,860,000	620	9,640	121,500,000	599	10,153	131,510,000	24
Kericho	33	204	5,778,000	40	242	7,409,500	45	675	40,500,000	8
Migori	123	422	27,339,000	167	555	29,165,000	156	553	29,499,500	5
Siaya	126	878	16,910,050	155	1,089	25,205,100	163	1,173	28,760,000	6
Other counties	713.3	3344.3	100448300	964.7	4089.5	126795500	1033.25	4814.4	147888612	27
<b>National Total</b>	<b>1,875</b>	<b>12,067</b>	<b>363,417,850</b>	<b>2,256</b>	<b>19,428</b>	<b>462,050,100</b>	<b>2,336</b>	<b>21,507</b>	<b>539,608,112</b>	<b>101</b>

### 5.3.10 Other African Leafy Vegetables

#### 5.3.10.1 Malabor gourd / Kahurura

Malabor gourd is an indigenous vegetables which is highly consumed in Central Kenya but now production and consumption is gradually spreading to other counties. Nyandarua County is the leading producer with 55% followed by Kiambu with 27%. Total production in 2013 was 184 MT in an acreage of 45 Ha valued at Kshs 2.9 Million.

Table 31: Production of Malabor Gourd in selected Counties 2013

County	2011			2012			2013			% share by value
	Area (Ha)	Quantity (MT)	Value (Kshs)	Area (Ha)	Quantity (MT)	Value (Kshs)	Area (Ha)	Quantity (MT)	Value (Kshs)	
Nyandarua	28	123	840,000	28	126	949,000	28	123	1,600,000	55
Kiambu	3	12	360,000	12	64	1,245,000	9	41	795,000	27
Nakuru	3	3	210,000	3	5	255,000	3	5	240,001	8
Murang'a	3	9	180,000	2	5	112,000	3	8	240,000	8
Nyeri	0	3	25,000	1	5	30,000	1	5	48,000	2
Other counties	0.3	2	6000	0.4	2	8000	0.5	2	10000	0
<b>National Total</b>	<b>37</b>	<b>152</b>	<b>1,621,000</b>	<b>46</b>	<b>207</b>	<b>2,599,000</b>	<b>45</b>	<b>184</b>	<b>2,933,001</b>	<b>100</b>

#### 5.3.10.2 Stinging Nettle

Stinging nettle is a common vegetable mainly in the highlands of Kenya where it can also be seen growing along the roads and highways. Its demand rose significantly when its health benefits were discovered hence increasing its supply. It can be used as a pot herb, food

additive or herbal teas. In 2013 production was 1317 MT from 313 Ha valued at 1.827 million. The leading county in production was Nyandarua with 69% of production by value share followed by Nyeri with 23%. Despite the acreage decreasing by 21.6% from 2012 the production increased by 1% while the value by 5%.

**Table 32: Production of Stinging Nettle in selected Counties**

County	2011			2012			2013			% share by value
	Area(Ha)	Quantity (MT)	Value (Kshs)	Area(Ha)	Quantity (MT)	Value (Kshs)	Area(Ha)	Quantity (MT)	Value (Kshs)	
Nyandarua	384	1,266	1,195,000	396	1,293	1,097,762	310	1,307	1,252,000	69
Nyeri	1	1	300,000	1	2	462,000	1	2	420,000	23
Murang'a	1	4	80,000	1	5	100,000	1	4	80,000	4
Kirinyaga	1	4	75,000	1	4	75,000	1	4	75,000	4
<b>National</b>	<b>387</b>	<b>1,275</b>	<b>1,650,000</b>	<b>399</b>	<b>1,304</b>	<b>1,734,762</b>	<b>313</b>	<b>1,317</b>	<b>1,827,000</b>	<b>100</b>

### 5.3.10.3 Methi

**Table 33: Production of Methi in Kenya 2013**

	2011			2012			2013			% share by value
	Area(Ha)	Quantity (MT)	Value (Kshs)	Area(Ha)	Quantity (MT)	Value (Kshs)	Area(Ha)	Quantity (MT)	Value (Kshs)	
Mombasa	0	0	0	0	0	0	4	29	1.716	100
<b>NATIONAL</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>29</b>	<b>1.716</b>	<b>100</b>

## 5.4 ASIAN VEGETABLES

This cluster of vegetables owes its name to the market segment for which it's targeted predominantly Asians. However, the consumption in the local market of some Asian vegetables like Aubergines and Okra has increased among the other communities. Aubergines was the leading in terms of production contributing to 54% of the total Asian Vegetable production. Valore (*Lablab purpureus* L.) was produced abundantly in Meru and Machakos County in the year under review while Turia (*Lufta acotangula*) and Tindori (*Coccinia cordifolia*) main production area was Mombasa and Murang'a Counties respectively. Other main Asian vegetables produced included Okra and Karella contributing 24% and 12% in total value respectively. In the year under review, production of these vegetables increased by 6% although the value went down.

Table 34: Performance of Asian Vegetables, 2011-2013

Crop	2011			2012			2013			% Share by value
	Area (Ha)	Qty (MT)	Value (Million Kshs)	Area (Ha)	Qty (MT)	Value (Million Kshs)	Area (Ha)	Qty (MT)	Value (Million Kshs)	
Aubergines	608	7,827	221	640	8,536	236	983.355	12052.7	324.8	51.6
Okra	393	3,339	93.3	484	5,799	163.5	437.45	5528.2	151.9	24
Karella	242	2,281	91	250	2,467	113.8	193.81	1989.3	77.6	12
Dudhi	54	821	30.1	151	1,344	43.9	107.6	728.55	21.0	3
Valore	51	363	21.7	33	242	19.9	30	272	12.3	2
Turia	10	21	0.5	8	16	0.5	32	208	9.3	2
Tunguja	122	1,838	36.8	117	1,624	32.5	16	189	8.0	1
Tindori	45	879	10.1	155	760	10.4	66.01	99.05	4.5	1
Palak	12	83	3.3	3	20	0.8	0.5	1	0.0	0
<b>Other crops</b>	<b>103</b>	<b>276</b>	<b>144.1</b>	<b>157</b>	<b>120</b>	<b>598.7</b>	<b>65</b>	<b>1071.2</b>	<b>19.6</b>	<b>3.4</b>
<b>Total Asian vege</b>	<b>1,639</b>	<b>17,727</b>	<b>652</b>	<b>1,997</b>	<b>20,927</b>	<b>1220</b>	<b>1932</b>	<b>22,139</b>	<b>629</b>	<b>100%</b>

### 5.4.1 Aubergines (*Solanum melongena*)

Aubergines are also known as Eggplant, Brinjals or Ravaya are the most important of all Asian vegetables accounting for 51% of the total value of Asian vegetables produced in 2013. They are harvested at different stages depending on market requirement. As compared to 2012, the area and quantities produced for Aubergines were 9,447 MT valued at Kshs 230 million. The leading counties producing Aubergines were Makueni, Taita Taveta and Kilifi counties contributing 21.8%, 16.2% and 14.2% each.

Table: Production of Aubergines in Selected Counties, 2011-2013

County	2011			2012			2013			% share by value
	Area (Ha)	Quantity (MT)	Value (million) Kshs	Area (Ha)	Quantity (MT)	Value (million) Kshs	Area (Ha)	Quantity (MT)	Value (million) Kshs	
Makueni	67.0	833.0	21.2	78.0	942.0	32.7	123.0	1,258.0	50.4	21.8
Taita taveta	72.0	1,250.0	5.7	135.0	2,469.0	81.3	84.0	1,478.0	37.4	16.2
Kilifi	66.0	1,176.0	29.4	64.0	1,206.0	30.2	82.0	1,310.0	32.8	14.2
Lamu	10.0	135.0	3.4	41.0	615.0	15.4	41.0	820.0	16.4	7.1
Kwale	-	-	-	13.0	207.0	5.2	42.0	627.0	12.5	5.4
Meru	131.0	1,456.0	30.9	70.0	765.0	20.0	54.0	594.0	12.5	5.4
Others	226.8	1,695.6	41.6	232.2	1,919.4	755.6	752.2	3,360.6	68.9	29.8
<b>National Total</b>	<b>572.8</b>	<b>6,545.6</b>	<b>132.1</b>	<b>633.2</b>	<b>8,123.4</b>	<b>940.3</b>	<b>1,178.2</b>	<b>9,447.6</b>	<b>230.9</b>	<b>100.0</b>

#### 5.4.2 Okra (*Hibiscus esculentus*)

Okra though an export crop and classified as an Asian vegetable, is preferred locally by the coastal people and the Asian Community. During the year under review, the crop was cultivated on an area of 449 Ha with a total production of 5,780 MT. This was a 16% reduction in volume as compared to 2012. Kilifi was the leading county in Okra production accounting for 45% of the total value of the crop produced in the country in 2013.

Table 35: Production of Okra in Selected Counties.

County	2011			2012			2013			% share by value
	Area (Ha)	Quantity (MT)	Value (million) Kshs	Area (Ha)	Quantity (MT)	Value (million) Kshs	Area (Ha)	Quantity (MT)	Value (million) Kshs	
Kilifi	159	2535	80	170	2731	99	176	2608	95	45
Taita taveta	55	651	32	72	933	47	69	887	44	21
Mombasa	38	478	7	54	807	10	33	706	29	14
Makueni	62	416	12	64	442	15	56	416	17	8
Lamu	0	0	0	63	1260	25	16	320	13	6
Others	87	639.8	12	72	694	8	99	843	13	6
<b>National Total</b>	<b>401</b>	<b>4720</b>	<b>143</b>	<b>495</b>	<b>6867</b>	<b>205</b>	<b>449</b>	<b>5780</b>	<b>211</b>	<b>100</b>

#### 5.4.3 Karella (*Momordica charantia*)

Karella is a favorite vegetable for the Asian community though local communities also have started utilizing them in their diets. On the same note, some are also exported to earn Kenya the much needed foreign exchange. The area increased by 0.7%, production decreased by 10.9% and the value by 16.6% as compared to 2012. The County with the highest production of Karella in terms of value were Murang'a followed by Meru, Makueni and Tharakaas shown in the table below.

Table: Production of Karella in Selected Counties, 2011-2013

	2010	2011	2012
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County	Area (Ha)	Quantity (MT)	Value (million) Kshs	Area (Ha)	Quantity (MT)	Value (million) Kshs	Area (Ha)	Quantity (MT)	Value (million) Kshs	% share by value
Muranga	25.0	225.0	5.6	29.0	263.0	6.4	31.0	279.0	8.4	17.4
Meru	13.0	136.0	6.4	14.0	150.0	7.2	14.0	151.0	7.3	15.3
Makueni	23.0	152.0	5.9	25.0	170.0	7.3	26.0	170.0	7.3	15.2
Tharaka	20.0	240.0	9.6	20.0	240.0	9.6	15.0	180.0	7.2	15.0
Mombasa	1.0	10.0	0.2	3.0	30.0	0.3	14.0	220.0	5.7	11.8
Kisumu	0.0	0.0	0.0	0.0	0.0	0.0	10.0	150.0	4.5	9.3
Nakuru	0.0	0.0	0.0	0.0	0.0	0.0	8.0	80.0	3.2	6.6
Kajiado	20.0	140.0	3.0	26.0	202.0	4.1	16.0	182.0	3.1	6.4
Others	16.0	168.0	3.5	25.0	571.0	6.4	9.0	36.0	1.4	2.9
<b>National Total</b>	<b>118.0</b>	<b>1071.0</b>	<b>34.2</b>	<b>142.0</b>	<b>1626.0</b>	<b>41.3</b>	<b>143.0</b>	<b>1448.0</b>	<b>48.2</b>	<b>100.0</b>

#### 5.4.4 Dudhi (*Lagenaria siceraria*)

Also known as bottle gourd is grown for export market as well as small high end market. As compared to 2012, the area, quantity and value declined by 20.2%, 8.9% and 25.8% respectively. The leading counties by value was Tharaka, Meru and Murang'a. As with other Asian vegetables, the consumption of Dudhi locally has not increased to stimulate its production.

Table: Production of Dudhi in Selected Counties, 2011-2013

County	2011			2012			2013			% share by value
	Area (Ha)	Quantity (MT)	Value (million) Kshs	Area (Ha)	Quantity (MT)	Value (million) Kshs	Area (Ha)	Quantity (MT)	Value (million) Kshs	
Tharaka	12.0	420.0	16.8	10.0	350.0	14.0	10.0	350.0	14.0	35.9
Meru	59.0	534.0	16.0	36.0	327.0	9.8	41.0	372.0	11.3	28.9
Muranga	32.0	192.0	5.4	34.0	194.0	6.2	35.0	210.0	7.4	18.8
Nakuru	0.0	0.0	0.0	0.0	0.0	0.0	9.0	90.0	4.8	12.3
Mombasa	2.0	20.0	1.0	2.0	24.0	0.4	6.0	52.0	1.3	3.3
Others	6.0	15.0	0.5	7.0	102.0	0.6	6.0	12.0	0.3	0.8
<b>National Total</b>	<b>111.0</b>	<b>1181.0</b>	<b>39.7</b>	<b>89.0</b>	<b>997.0</b>	<b>31.0</b>	<b>107.0</b>	<b>1086.0</b>	<b>39.0</b>	<b>100.0</b>

#### 5.4.5 Valore (*Lablab purpureus* L.), Asparagus, Tindori (*Coccinia cordifolia*) and Turia (*Luffa acutangula*)

Valore was produced abundantly in Meru and Machakos County in the year under review while Turia and Tindori main production area was Mombasa and Murang'a counties respectively. Asparagus was produced in very small quantities in Bungoma. They are produced both for domestic and export market. The area under production increased by 45% as shown in the table below.

Table 36: Production of Valore, Asparagus, Tindori and Turia, 2011-2013

Crop	2011			2012			2013		
	Area (Ha)	Quantity (MT)	Value (million) Kshs	Area (Ha)	Quantity (MT)	Value (million) Kshs	Area (Ha)	Quantity (MT)	Value (million) Kshs
Valore	24	62	1.8	24	62	1.6	23	58	1.5

Turia	0	0	0	0	0	0	15	225	5.6
Tindori	12	48	2	14	52	1.5	17	87	3
Asparagus	0	0	0	0.1	0.1	0.003	0.1	0.1	0.003
All county total	36	110	3.8	38.1	114.1	3.103	55.1	370.1	7.403

## 5.5 MEDICINAL AND AROMATIC PLANTS

Herbs and spices have been included in MAPs because they have similar properties with crops in that category. Cultivation of herbs and spices is dominated by smallholder farmers. Over the years, the earnings from this sub sector have been mainly from the domestic market. In 2013, the sub sector contributed Kshs 4.5 billion in 2013. The area under spices was 17,332 Ha with a production of 95,307 MT. Bulb onion was the largest contributor spices in 2013 by value with 51% followed by spring onion, Bixa and Garlic. Onions and chillies remain unexploited in Kenya because demand still is beyond supply. Processing companies still have to rely on imports from India, Zanzibar among other countries because of poor post-harvesthandling of spices locally. The challenges facing the sub-sector include; the unavailability of quality planting materials, limited value added products, and limited postharvest knowledge in order to prevent loss of quality and essential oils. In addition there is favourable climate for growing a wide range of herbs and spices across the country.

Table: Production of Spices, 2011-2013

Crop	2011			2012			2013			% share by value
	Area (Ha)	Quantity (MT)	Value (KShs "000,000")	Area (Ha)	Quantity (MT)	Value (KShs "000,000")	Area (Ha)	Quantity (MT)	Value (KShs "000,000")	
Bulb onion	6,903	1,280,998	1,871	7,043	1,285,922	2,065	7,730	1,295,331	2,296	51
Spring onion	3,178	53,408	754	3,404	57,174	769	4,198	64,931	1,216	27
Bixa	2,020	6,227	124.53	3,400	7,445	222.18	4,453	7,269	291.315	6
Garlic	119	1,138	39	123	1,100	110	131	1,253	132.4	3
Corriander	116	840	26.53	247	2,582	80.36	250	2,596	85.29	2
Long cayenne chillies	269	1,412	36	351	2,061	51	432	2,406	271	6
Tunguja	35	482	9.6	2	28	0.5	183	3,198	64.066	1
African birds eye chillies	178	338	18	149	514	30	218	1,733	83	2
Leeks	55	944	24	55	913	48	61	2,491	81.9	2
Bullet chillies	69	630	8	108	682	31	76	439	18	0
<b>National Total</b>	<b>12,942</b>	<b>80,980</b>	<b>160.68</b>	<b>14,882</b>	<b>85,885</b>	<b>303.04</b>	<b>17,732</b>	<b>95,307</b>	<b>4,538.97</b>	<b>100</b>

### 5.5.1 Green bunching onions (*Allium fistulosum*)

The green bunching onion also commonly referred to as shallot or spring onion is becoming a popular commercial crop among smallholder farmers. The major counties with high value green bunching onion were Kericho (26%), Bungoma (25%), and Kisii (18%). However, in terms of productivity, Kisii and Bungoma are the leading. Other counties producing the crop are outlined in the table below. The major challenges hindering increased production of green bunching onion is unavailability of quality planting material besides severe susceptibility to purple blotch. However, the crop has great potential as a substitute for the bulb onion.

Table 37: Production of Green Bunching Onions in Selected Counties

County	2011			2012			2013			% share by value
	Area (Ha)	Quantity (MT)	Value (KShs) million	Area (Ha)	Quantity (MT)	Value (KShs) million	Area (Ha)	Quantity (MT)	Value (KShs) million	

Kericho	53	586	9	58	723	17	120	754	319	26
Bungoma	708	28,046	261	762	30,239	270	809	32,021	300	25
Kisii	732	1,0850	225	662	9822	206	708	10525	222	18
Elgeyo Marakwet	305	3031	45	420	3960	58	458	4580	69	6
Nyandarua	210	2,740	26	233	3561	18	252	3633	38	3
Other counties	1,170	8155	187	1269	8869	199	1851	13418	268	22
<b>National</b>	<b>3,178</b>	<b>53,408</b>	<b>754</b>	<b>3,404</b>	<b>57174</b>	<b>769</b>	<b>4198</b>	<b>64931</b>	<b>1216</b>	<b>100</b>

### 5.5.2 Bulb Onions (*Allium cepa*)

The domestic demand for bulb onion outstrips the local supply resulting to imports from India, Egypt and Tanzania. The major bulb onion producing counties by value were Bungoma (23%), Meru (11%), and Taita Taveta (7%). The potential for increasing productivity depend on expanding area under irrigable agriculture and adopting appropriate pre and post harvesthandling practices to reduce post harvest losses.

Table 38: Production of Bulb Onions in Selected Counties

County	2011			2012			2013			% share by value
	Area (Ha)	Quantity (MT)	Value (KShs) millions	Area (Ha)	Quantity (MT)	Value (KShs) millions	Area (Ha)	Quantity (MT)	Value (KShs) millions	
Bungoma	3654	42527	493	3303	40675	500	3750	46771	524	23
Meru	327	6253	229	346	6543	239	370	6900	253	11
Taita taveta	315	5386	162	443	7806	234	366	6112	165	7
Isiolo	327	4308	107	360	4938	161	338	4519	147	6
Siaya	80	407	20	79	639	37	178	2211	136	6
Narok	426	4210	80	445	4132	85	454	4487	93	4
Other counties	1774	1217907	781	2067	1221189	809	2274	1224331	978	43
<b>National</b>	<b>6903</b>	<b>1280998</b>	<b>1871</b>	<b>7043</b>	<b>1285922</b>	<b>2065</b>	<b>7730</b>	<b>1295331</b>	<b>2296</b>	<b>100</b>

### 5.5.3 African Bird Eye (ABE) Chili – *Capsicum frutescens*

The African Bird Eye (ABE) chili is produced for both the domestic and export market and consumed either fresh or processed. In 2013, the total area, production and value increased considerably. The leading Counties in production of ABE chili are as follows: Lamu (76%), Kwale (9%) and Homabay (5%). The major challenges to production of ABE Chilies include inadequate knowledge on post-harvesthandling and prevalence of diseases. However, the crop has a ready market and can grow in marginal areas with minimum rainfall.

Table 39: Production of ABE Chili in Selected Counties

County	2010			2011			2012			% share by value
	Area (Ha)	Quantity (MT)	Value (KShs) million	Area (Ha)	Quantity (MT)	Value (KShs) million	Area (Ha)	Quantity (MT)	Value (KShs) million	
Lamu	106	135	3	65	260	13	115	1150	63	76
Kwale	6	46	2	7	50	3	23	370	7	9
Homabay	14	15	6	22	43	7	27	46	4	5
Makueni	4	20	1	4	20	1	7	35	2	3
Other counties	48	122	6	51	141	7	46	132	6	8
<b>National</b>	<b>178</b>	<b>338</b>	<b>18</b>	<b>149</b>	<b>514</b>	<b>30</b>	<b>218</b>	<b>1733</b>	<b>83</b>	<b>100</b>

#### 5.5.4 Long Cayenne (*Capsicum frutescens*)

This is the hot type of pepper produced for domestic and export markets. The leading counties in production of long cayenne are as follows; Murang'a (77%), Lamu (4%) and Makueni (3%). The major challenges to production of long cayenne include inaccessibility of quality seeds and prevalence of pest and diseases.

Table 40: Production of Long Cayenne in Selected Counties

County	2011			2012			2013			% share by value
	Area (Ha)	Quantity (MT)	Value (KShs) million	Area (Ha)	Quantity (MT)	Value (KShs) million	Area (Ha)	Quantity (MT)	Value (KShs) million	
Murang'a	5	20	1	8	30	1	15	60	210	77
Lamu	20	121	2	26	195	4	48	480	10	4
Makueni	6	116	5	11	206	8	12	220	9	3
Bungoma	66	288	7	70	304	7	73	320	8	3
Taita taveta	26	260	5	40	544	8	35	350	7	3
Garissa	10	22	1	23	61	3	28	63	4	1
Narok	4	14	1	10	14	1	7	54	3	1
Kwale	12	89	2	5	33	1	19	161	3	1
Other counties	120	482	12	158	674	18	195	698	17	6
<b>National</b>	<b>269</b>	<b>1412</b>	<b>36</b>	<b>351</b>	<b>2061</b>	<b>51</b>	<b>432</b>	<b>2406</b>	<b>271</b>	<b>100</b>



### 5.5.5 Bullet Chillies (*Capsicum frutescens*)

In 2013, the area, production and value of Bullet chillies were 76Ha, 439MT and Kshs18 Million respectively. The counties leading in production were: Taita Taveta (50%), Kirinyaga (12%) and Mombasa (10%). Bullet chillies are exported along other Asian vegetables as well as consumed domestically in the urban areas. The main challenge in production is inaccessibility to quality planting material.

Table 41: Production of Bullet Chillies in Selected Counties

County	2011			2012			2013			% share by value
	Area (Ha)	Quantity (MT)	Value (KShs) million	Area (Ha)	Quantity (MT)	Value (KShs) million	Area (Ha)	Quantity (MT)	Value (KShs) million	
Taita taveta	33	465	0	34	467	21	15	207	9	50
Kirinyaga	5	49	3	7	54	3	15	75	2	12
Mombasa	0	0	0	0	0	0	5	45	2	10
Makueni	4	21	1	5	22	1	5	21	1	7
Kakamega	4	26	1	2	8	0	4	21	1	5
Siaya	6	18	1	7	21	1	6	17	1	5
Other counties	17	51	2	53	110	4	26	53	2	10
<b>National</b>	<b>69</b>	<b>630</b>	<b>8</b>	<b>108</b>	<b>682</b>	<b>31</b>	<b>76</b>	<b>439</b>	<b>18</b>	<b>100</b>

### 5.5.6 Coriander (*Coriandrum sativum*)

Coriander is a popular herb for its pungent leaves and is grown for domestic market. The total area under coriander production was 250 Ha, which yielded 2,596 MT valued at 85 million. The leading counties in production by value of coriander were as follows; Kiambu (69%), Nairobi (7%), and Murang'a (3%). The major challenge to production of coriander is inaccessibility to quality seeds and poor post-harvest handling.

Table 42: Production of Coriander by County, 2011-2013

County	2011			2012			2013			% share by value
	Area (Ha)	Quantity (MT)	Value (KShs)	Area (Ha)	Quantity (MT)	Value (KShs)	Area (Ha)	Quantity (MT)	Value (KShs)	
Kiambu	41	558	15,830,600	119	2,134	65,594,000	95	1,837	59,165,000	69
Nairobi	14	67	1,781,000	17	95	2,595,600	15	82	5,992,000	7
Murang'a	10	50	2,600,000	8	43	2,650,000	10	45	2,940,000	3
Mombasa	0	0	0	0	0	0	17	158	2,692,000	3
Taita taveta	5	36	1,533,000	10	92	2,761,000	11	72	2,422,750	3

Other counties	46	129	4,809,050	93	217.5	6,758,300	102	402	12,078,100	14
<b>TOTAL</b>	<b>116</b>	<b>840</b>	<b>26,553,650</b>	<b>247</b>	<b>2,582</b>	<b>80,358,900</b>	<b>250</b>	<b>2,596</b>	<b>85,289,850</b>	<b>100</b>

### 5.5.7 Garlic (*Allium sativum*)

Garlic is a leading source of income among herbs and spices. However, the issue of quality seed is a challenge since farmers have to save seed from the previous crop which is in most cases inferior and makes the product uncompetitive as compared to imported garlic. The leading counties in production of garlic are as follows; Meru (62%), Bomet (21%) and Narok (14%). The major challenges to production of garlic are unavailability of quality planting material and uncompetitive produce. The crop potential is informed by high dependence on imported garlic and considerably high prices.

Table 43: Production of Garlic by County

County	2011			2012			2013			% share by value
	Area (Ha)	Quantity (MT)	Value (KShs) million	Area (Ha)	Quantity (MT)	Value (KShs) million	Area (Ha)	Quantity (MT)	Value (KShs) million	
Meru	50.0	750.0	7.5	52.0	780.0	78.0	55.0	825.0	82.5	62.3
Bomet	12.0	204.0	20.4	6.0	100.0	10.2	8.0	180.0	27.1	20.5
Narok	41.0	144.0	6.3	49.0	177.0	16.7	52.0	202.0	17.8	13.5
Other counties	16.0	40.0	5.1	16.0	43.0	5.2	16.0	46.0	5.0	3.8
<b>National</b>	<b>119.0</b>	<b>1138.0</b>	<b>39.3</b>	<b>123.0</b>	<b>1100.0</b>	<b>110.1</b>	<b>131.0</b>	<b>1253.0</b>	<b>132.4</b>	<b>100.0</b>

### 5.5.8 Leeks (*Allium ampeloprasum*)

Leeks are grown for both the domestic and export markets. The baby leeks are ideal for use in assorted pre-packs for both local and export markets. The value of Leeks in 2013 was Kshs 81.9 million produced on 60.5 Hatha that yielded 2,491MT. The leading counties in production by value of leeks were Kiambu (54.3%), Taita Taveta (40.1%) and Nairobi (2.7%). The major challenge to production of leeks is limited domestic market. High prices for export market offers opportunity for growth and expansion.

Table 44: Production of Leeks by County, 2011-2013

County	2011			2012			2013		
	Area (Ha)	Quantity (MT)	Value (KShs) million	Area (Ha)	Quantity (MT)	Value (KShs) million	Area (Ha)	Quantity (MT)	Value (KShs) million
Kiambu	11.0	185.0	4.9	11.0	206.0	5.0	10.0	1,876.0	15.2
Taita Taveta	30.0	630.0	15.8	21.0	554.0	38.9	29.0	465.0	56.1
Nairobi	8.8	115.0	2.9	11.3	113.0	2.8	9.5	95.0	3.4
Other counties	5.0	14.0	0.3	12.0	40.0	1.5	12.0	55.0	0.6
<b>National Total</b>	<b>54.8</b>	<b>944.0</b>	<b>23.9</b>	<b>55.3</b>	<b>913.0</b>	<b>48.2</b>	<b>60.5</b>	<b>2,491.0</b>	<b>81.9</b>

## 5.6 HERBS

Herbs have been grown over the years in Kenya and their production has been on the rise. Previously they were categorized with spices and medicinal plants. In 2013 the leading herbs in the production was Stevia under an acreage of 283 Ha, 763 MT valued at Kshs 29 million. It was followed by Rosemary (6%), Celery (3%), and Mint, Cucri and Parsley (2% each) and Lemon grass at 1%.

Table: Production of Selected Herbs, 2011-2013

	2011			2012			2013			
Crop	Area (Ha)	Quantity (MT)	Value (KShs)	Area (Ha)	Quantity (MT)	Value (KShs)	Area (Ha)	Quantity (MT)	Value (KShs)	% share by value
Stevia	35	124	7,881,000	44	138	8,478,636	283	763	29,745,000	83
Rosemary	11	40	1,570,000	14	43	1,880,000	15	43	1,988,000	6
Celery	1	12	465,000	2	18	700,000	3	15	1,200,000	3
Mint	5	7	570,000	5	7	562,500	3	13	800,000	2
Cucri	3	8	202,500	6	18	450,000	7	23	738,001	2
Parsley	0	1	63,000	0	2	115,000	2	16	635,000	2
Lemon grass	3	16	225,000	5	13	350,000	5	15	280,000	1
Turmeric	1	6	180,000	1	4	80,000	2	8	160,000	0
Ginger	1	1	12,500	1	1	12,500	2	7	111,250	0
Palak	-	-	-	-	-	-	1	1	6,000	0
<b>Totals</b>	<b>60</b>	<b>215</b>	<b>11,169,000</b>	<b>78</b>	<b>244</b>	<b>12,628,636</b>	<b>323</b>	<b>904</b>	<b>35,663,251</b>	<b>100</b>

### 5.6.1 Lemon grass (*Cymbopogon spp*)

Lemon grass is an indigenous spice which has been utilized by communities over the years but was not commercialized. Over the years, lemon grass has been produced and its value grown exponentially. In 2013 lemon grass was grown on 5 Ha producing 15 MT valued at Kshs 280,000. The leading county in the production of lemon grass by value was Tharaka with 43%. The value was lower than 2012 which was Kshs 350,000. Main challenge is lack of post-harvest technology for processing

Table 45: Production of Lemon grass in selected counties 2011-2013

	2011			2012			2013			
County	Area (Ha)	Quantity (MT)	Value (Kshs)	Area (Ha)	Quantity (MT)	Value (Kshs)	Area (Ha)	Quantity (MT)	Value (Kshs)	% share value

Tharaka	2	14	140,000	3	10	100,000	3	12	120,000	43
Kakamega	0	-	-	1	1	140,000	1	1	60,000	21
Kisumu	0	1	25,000	-	1	50,000	-	1	50,000	18
Busia	1	1	60,000	1	1	60,000	1	1	50,000	18
Other counties	0	-	-	-	-	-	-	-	-	-
<b>National</b>	<b>3</b>	<b>16</b>	<b>225,000</b>	<b>5</b>	<b>13</b>	<b>350,000</b>	<b>5</b>	<b>15</b>	<b>280,000</b>	<b>100</b>

## 5.6.2 Stevia

Stevia is a spice which is utilized as a sweetener. Its production has been on the increase over the years. In 2013 it was grown on 283 Ha producing 763 MT valued at Kshs 29 million. The leading county in the production of stevia by value was Kericho with 78%.

**Table 46: Production of Stevia in selected Counties 2011-2013**

	2011			2012			2013			
County	Area(Ha)	Quantity (MT)	Value (Kshs)	Area(Ha)	Quantity (MT)	Value (Kshs)	Area(Ha)	Quantity (MT)	Value (Kshs)	% share value
Kericho	32	91	7,280,000	37	89	6,670,000	60	292	23,320,000	78
Bungoma	-	-	-	1	-	-	211	416	3,900,000	13
Nandi	2	8	576,000	4	17	1,224,000	10	25	2,000,000	7
Bomet	-	-	-	1	7	559,636	1	5	500,000	2
Nakuru	1	25	25,000	1	25	25,000	1	25	25,000	0
<b>National</b>	<b>35</b>	<b>124</b>	<b>7,881,000</b>	<b>44</b>	<b>138</b>	<b>8,478,636</b>	<b>283</b>	<b>763</b>	<b>29,745,000</b>	<b>100</b>

## 5.7 MEDICINAL PLANTS

### 5.7.1 Aloe

Aloe is a crop that does well in marginal area and has been exploited as medicinal plant to cure many diseases in human and birds. In 2013 Aloe was planted on 44 Ha with a production of 133 MT valued at Kshs 3 million. The leading county in production by value was Baringo followed by Kakamega and Taita Taveta counties respectively.

**Table 47: Production of Aloe in selected Counties 2011-2013**

	2011			2012			2013			
County	Area(Ha)	Quantity (MT)	Value (Kshs) million	Area(Ha)	Quantity (MT)	Value (Kshs) million	Area(Ha)	Quantity (MT)	Value (Kshs) million	% share by value

Baringo	11	28	3	14	29	3	8	24	1	42
Kakamega	1	6	0	1	6	1	1	6	1	18
Taita taveta	12	62	3	10	32	1	10	34	1	16
Kisumu	0	1	0	0	2	0	0	3	0	11
Turkana	1	60	0	1	60	0	1	60	0	7
Meru	0	0	0	0	1	0	0	1	0	4
Other counties	13	0	0	20	3	0	24	5	0	2
<b>National</b>	<b>38</b>	<b>157</b>	<b>6</b>	<b>46</b>	<b>133</b>	<b>5</b>	<b>44</b>	<b>133</b>	<b>3</b>	<b>100</b>

### 5.7.2 Moringa (*Moringa oleifera*)

Moringa, commonly known as Drumstick, is mainly grown for the local Asian community and the export market. The crop contributed Kshs. 3 million to the domestic value of horticulture and occupied an area of 89 Ha in 2013. The leading counties by value were Kakamega (69%), Kisumu (16%), and Machakos (9%). The crop is adapted to drought hence potential for expansion to ASAL. In addition, the seed has multiple uses including oil extraction, domestic water purification, therapeutic values, and high nutritious leaves.

Table 48: Production of Moringa by County, 2011-2013

County	2011			2012			2013			% share by value
	Area (Ha)	Quantity (MT)	Value (KShs)	Area (Ha)	Quantity (MT)	Value (KShs)	Area (Ha)	Quantity (MT)	Value (KShs)	
Kakamega	30	4	1000000	33	6	1560000	37	7	2175000	69
Kisumu	2	2	400000	2	2	400000	3	3	500000	16
Machakos	2	2	200000	3	3	250000	3	5	300000	9
Homabay	1	0	120000	1	0	120000	1	0	120000	4
Makueni	0	0	0	0	0	0	1	5	50000	2
Other counties	26	16	0	42	22	205000	44	4	30000	1
National	61	24	1875000	81	33	2535000	89	24	3175000	100

### 5.7.3 Other Herbs and Spices

Cucuri, Ginger, Jatropha and Rosemary are among herbs and spices grown on small scale for processing with potential to grow in the ASAL areas. New introductions were Tea tree and Rosella with the area under Jatropha and Cucuri increasing particularly in Tharaka Nithi where most herbs are produced. The total area under cultivation was 1,678 Ha with a total production of 11,690 MT having a value of Ksh 408 million. The major constraints to

increased production are unavailability of quality planting material, inadequate knowledge among extension staff and growers, and limited domestic market.

Table 49: Production of Selected MAPs, 2011-2013

Crop	Producing County (s)	2011			2012			2013		
		Area (Ha)	Quantity (MT)	Value (KShs)	Area (Ha)	Quantity (MT)	Value (KShs)	Area (Ha)	Quantity (MT)	Value (KShs)
Bixa	Lamu, Kwale	2,020	6,227	124,530,000	3,400	7,445	222,182,000	4,453	7,269	291,315,000
Tunguja	Mombasa, Kwale	35	482	9,600,000	2	28	500,000	183	3,198	64,066,000

## 6 FRUIT

### 6.1 OVERALL PERFORMANCE OF FRUITS

In 2013, fruit contributed Kshs. 48 billion accounting for 32% of the domestic value of horticultural produce. The area under fruit was 160,000 Ha with a production of 2.3 million MT. The area and value of fruits increased by 7% and 17% respectively as compared to the previous year. The increase in area and quantity was positive for most fruits due to rehabilitation of irrigation schemes which has extended irrigation to fruit crops. The main fruit categories grown in Kenya are the tropical and temperate fruits. The major fruit grown in order of importance are; Banana (37.6%), Mangoes (19.6%), pineapples (12.1%), Avocado (9.8%), pawpaw (5.4%), oranges (4.6%), water melon (4.2%) and Passion fruit (3.7%).

The potential of most fruits remain unexploited particularly indigenous/emerging fruits such as Jack fruit, loquats, Guavas etc. Data that would be used to inform policy makers and marketers also is lacking since focus is only in the major consumed fruits yet these underutilized fruits also are consumed and marketed not just locally but also regionally. These emerging fruits have both nutritional and medicinal value with high potential of ensuring food security in the rural areas or areas of production. However, the concentration for both the export and local market is on the fresh market. The processing market has not fully exploited local raw material with most processors importing concentrates. Challenges in fruit cultivation include low adoption of modern technologies, inadequate quality planting materials, high post-harvest loses and prevalence of pests and diseases.

Table 50: Production of Various Fruit, 2011-2013

Fruit Type	2011			2012			2013			%share by value
	Area (Ha)	Quantity ('000' MT)	Value (Million) Kshs	Area (Ha)	Quantity ('000' MT)	Value (Million) Kshs	Area (Ha)	Quantity ('000' MT)	Value (Million) Kshs	
Banana	50,486	1,226.17	325.69	58,003	1,207.84	16,188.95	60,153	1,374.52	18,881.36	38.60
Mango	39,367	452.94	112.72	43,777	520.43	6,176.93	46,980	581.29	7,458.56	15.25
Watermelon	3,935	79.53	92.19	4,742	106.66	4,986.54	5,338	108.63	4,050.03	8.28
Oranges	5,416	65.51	34.76	5,941	61.03	1,460.09	7,494	99.43	3,981.74	8.14
Pawpaw	7,501	101.35	49.32	8,504	133.52	3,347.00	9,336	132.61	3,843.64	7.86
Avocado	9,960	149.24	63.54	11,021	166.95	3,167.60	11,439	177.80	3,748.77	7.66
Pineapple	5,691	111.24	46.36	6,290	120.97	2,710.70	6,290	120.88	3,185.96	6.51
Passion fruit	3,166	34.93	26.69	3,743	39.57	1,386.19	4,377	62.21	2,254.69	4.61
Tangerine	960	12.71	5.25	844	11.08	289.84	1,200	20.94	354.57	0.72
Lemon	783	7.81	3.26	956	9.13	170.39	1,135	16.38	315.97	0.65
Tree Tomato	546	3.34	2.28	775	5.22	211.95	789	4.88	165.38	0.34
Lime	477	4.41	1.44	524	4.71	72.64	645	9.19	141.08	0.29

Pears	304	4.88	2.51	297	4.34	102.11	295	4.19	110.99	0.23
Guavas	2,177	7.30	3.44	2,113	7.70	160.88	3,306	7.63	104.09	0.21
Loquats	146	0.73	0.36	171	1.10	23.11	195	1.10	99.89	0.20
Plums	201	2.45	1.01	205	2.45	37.70	210	2.30	53.26	0.11
S berry	40	0.21	0.77	45	0.48	47.15	53	0.41	50.04	0.10
Grape fruit	64	0.86	0.26	72	0.92	12.87	175	2.48	49.53	0.10
Peaches	58	0.35	0.50	55	0.45	26.63	58	0.45	28.20	0.06
Apples	44	0.30	0.28	52	0.34	17.13	70	0.40	19.56	0.04
White sapote	33	0.17	0.13	46	0.38	12.66	54	0.26	8.70	0.02
Custard Apple	66	0.30	0.14	69	0.32	7.52	68	0.31	7.42	0.02
Grapes	46	0.13	0.27	50	0.18	16.56	6	0.00	0.03	0.0001
<b>Fruits Total</b>	<b>131,467</b>	<b>2,266.86</b>	<b>773.16</b>	<b>148,295</b>	<b>2,405.75</b>	<b>40,633.14</b>	<b>159,666</b>	<b>2,728.27</b>	<b>48,913.45</b>	<b>100</b>

## 6.2 BANANA (MUSA SP)

Banana is an important food and nutritional security crop among the rural and urban farmers. The main varieties grown included dessert Banana cultivars (Grand Nain, Gross Mitchel, Chinese Cavendish, Giant Cavendish, Dwarf Cavendish etc). Cooking cultivars include Grandi Shisikame, MutaHato, Uganda Green and Ng'ombe while multipurpose cultivars are Muraru and Gold finger. In 2013, the area under Banana was 60,152.9 Ha with a total production of 1.37 million MT valued at Kshs. 18.9 billion. There was an increase in Banana hectareage from 58,003 Ha to 60,153 Ha representing an increase of 3.7% from 2012 to 2013 respectively. The production for Bananas increased by 13.8%, from 1.21 million MT to 1.37 million MT while the value increased by 16.6% from Kshs 16.19 billion to Kshs 18.88 billion. Increase in production and value could be attributed to more land under irrigation (approximately 128 Ha) in Migori County, adoption of superior varieties, availability of clean planting materials from Tissue Culture technology, exposure of farmers to modern agronomic practices, packaging and standardization (kg as unit weight instead of bunch size). Post harvest handling practices such as controlled bulk ripening and processing is still low in the Country. In 2013, Banana production constituted 37% of the total value of fruits produced in the country. The leading counties in Banana production were: Meru (18.1%), Migori (10.7%) and Kirinyaga 8.7%) among others.

Table: Production of Bananas by Selected Counties for 2011-2013

County	2011			2012			2013			% share by value
	Area (Ha)	Quantity (MT)	Value (Kshs-million)	Area (Ha)	Quantity (MT)	Value (Kshs-million)	Area (Ha)	Quantity (MT)	Value (Kshs million)	
Meru	6,112	272,844	2,827	6,194	288,803	2,676	6,493	307,013	3,422	18
Migori	2,898	54,010	1,288	3,868	69,642	1,544	4,927	91,360	2,029	11
Kirinyaga	4,033	176,576	1,936	4,136	169,835	1,562	4,297	172,775	1,652	9
Taita Taveta	2,431	66,267	1,298	2,450	66,337	1,299	2,531	66,051	1,604	9



Bungoma	2,794	55,030	692	3,129	50,730	979	3,727	61,383	1,290	7
Murang'a	5,539	93,815	877	5,696	97,614	956	5,820	101,847	1,133	6
Kisii	3,118	69,460	935	3,436	77,300	1,070	3,335	75,822	1,078	6
Kiambu	1,798	23,876	910	1,828	19,931	790	1,831	23,639	989	5
MacHakos	876	12,560	147	1,114	19,154	274	1,219	48,402	717	4
Kakamega	4,026	117,669	523	5,061	25,235	653	4,681	46,219	682	4
Nyamira	1,288	24,128	820	1,356	26,162	561	1,431	28,066	630	3
others	15,573	259,937	3,055	19,735	297,097	3,825	19,861	351,939	3,656	19
<b>National Total</b>	<b>50,486</b>	<b>1,226,172</b>	<b>15,308</b>	<b>58,003</b>	<b>1,207,841</b>	<b>16,189</b>	<b>60,153</b>	<b>1,374,516</b>	<b>18,881</b>	<b>100</b>

The challenges in Banana production include pests such as *Fusarium oxysporum* f. sp. *cabense* causing the Panama disease and the Bacteria Wilt and high post Harvest losses. Other major challenges include poor marketing channels and market structure. However, counties like Kirinyaga and Murang'a that sell by weight had higher farm gate prices.

### 6.3 MANGO (MANGIFERA INDICA)

Mango production has been on the increase due to increased demand for fruits for fresh market, processing and good example is Kilifi County which is leading in quantity produced. The leading counties in Mango production were as follows in ascending order by value were; Kwale (18.3%), Kilifi (14.7%), Migori (9.9%), Machakos (8.4%) and Meru (6.5%). Acreage increased by 7.3% from 43,776 Ha in 2012 to 46,9680 Ha in 2013. Production and value showed an upward trend of 11.69% and 20.7% increase from 2012 to 2013 respectively. This steady increase can be attributed to marketing systems with various government organizations such as Kenya Agricultural Research Institute (KARI) and private sector initiatives across the value chain, increased consumption of Mango juice and Mango salads.

Table: Production of Mangoes in Selected Counties, 2011-2013

County	2011			2012			2013			% share by value
	Area (Ha)	Quantity (MT)	Value (Kshs-million)	Area (Ha)	Quantity (MT)	Value (Kshs-million)	Area (Ha)	Quantity (MT)	Value (Kshs-million)	
Kwale	2,136	43,196	431	2,636	52,574	525	4,135	91,390	1,365	18.3
Kilifi	5,727	98,309	983	5,729	101,655	1,017	5,793	106,269	1,093	14.7
Migori	1,722	23,888	532	1,874	26,055	645	2,061	28,898	741	9.9
MacHakos	4,520	41,532	520	4,825	54,329	630	5,133	51,546	624	8.4
Meru	4,097	45,371	459	4,176	46,010	460	4,135	48,432	484	6.5
Makueni	9,224	40,038	361	10,237	44,482	398	10,632	48,494	473	6.3
Bungoma	919	17,813	229	1,155	22,370	319	1,258	24,391	410	5.5
Embu	1,857	9,171	75	3,290	27,388	202	3,605	39,588	357	4.8
Tana river	1,133	18,540	185	1,211	22,054	242	1,276	23,204	256	3.4
Lamu	2,158	31,778	318	2,187	32,466	325	2,189	24,440	245	3.3
Others	5,874	83,308	1,205	6,457	91,049	1,414	6,764	94,638	1,409	18.9
<b>National Total</b>	<b>39,367</b>	<b>452,944</b>	<b>5,298</b>	<b>43,777</b>	<b>520,432</b>	<b>6,177</b>	<b>46,980</b>	<b>581,290</b>	<b>7,459</b>	<b>100</b>

Various varieties have been developed, are grown by farmers and they include both local and improved varieties (Tommy Atkins, Kent, Van Dyke, Sensation, Haden, Apple, Ngowe, Boribo, Batawi, Pears, Sabro, Dodo and Sabine). Challenges in the Mango value chain are post harvest losses, pests such as fruit fly and Mango weevil, diseases such as Mango anthracnose and access to true to type planting material.

#### 6.4 PURPLE PASSION FRUIT (PASSIFLORA EDULIS)

Passion fruit is an important fruit with great commercial potential since demand for both fresh fruit and processed juice is on the increase. In the previous reports, all the Passion fruit varieties data was segregated into purple, sweet and sour Passion fruit. In 2013 the data was been lumped together therefore segregated statistics on the performance of purple Passion fruit or even the sweet and sour varieties of Passion fruits will not be available. In 2013, Passion fruit contributed Kshs 2.25 billion under an area of 4,377.2 Ha and production of 62,207 MT. The area and production of Passion fruit increased by 16.9% and 57.2% respectively. Production of Passion fruit in Kenya is faced with many challenges among them increased disease incidences (fusarium wilt, dieback and woodiness virus disease), poor agronomic practices and lack of certified disease free planting material. The increase that has been recorded could be due to collaborative work between the government and USAID-KHCP where more than 100,000 smallholder farmers accessed clean planting materials from certified commercial nurseries which reduced pests and disease incidences while improving yields. Research also needs to be supported by increasing funds to be able to develop disease tolerant, high yielding varieties even with a longer economic life. The leading counties in 2013 were Kwale (22.7%), Embu (20.9%), and Migori (16.8%)

Table 51: Production of Purple Fruit in Selected Counties, 2011-2013

County	2011			2012			2013			% share by value
	Area (Ha)	Quantity (MT)	Value (Kshs-million)	Area (Ha)	Quantity (MT)	Value (Kshs-million)	Area (Ha)	Quantity (MT)	Value (Kshs-million)	
Embu	102	1,661	109.58	127	1,539	95.9	89	12,981	757.64	34
Kwale	115	1,309	39.28	306	3,441	103.2	886	14,108	282.34	13
Migori	1,073	10,037	238.75	1,103	10,309	253.27	1,121	10,462	222.18	10
Meru	207	6,658	216.38	208	4,155	152.73	205	5,569	191.48	8
Elgeyo marakwet	220	2,899	113.99	270	3,248	129.82	346	4,565	180.26	8
Uasin gishu	230	2,000	120.7	351	5,779	209.14	222	3,190	119.6	5
Others	1,219	10,368	415.65	1,378	11,096	442.13	1,508	11,332	501.2	22
<b>National Total</b>	<b>3,166</b>	<b>34,932</b>	<b>1,254.33</b>	<b>3,743</b>	<b>39,567</b>	<b>1,386.19</b>	<b>4,377</b>	<b>62,207</b>	<b>2,254.69</b>	<b>100</b>

High production output from Kwale could be attributed to the introduction of high yielding yellow Passion fruits that do well in low altitudes and warm areas by KARI. In addition the coca-cola company processing soft drinks has opened up the markets alongside neighbouring countries such as Uganda. These offer opportunity for the processing industry to grow and create employment in the fruit industry.

## 6.5 AVOCADO (PERSEA AMERICANA)

Avocado is one of the oily fruit grown in Kenya both for the fresh market and oil production. In 2013, Avocado contributed Ksh. 3.7 billion which was a contribution of 8% to the total value of Fruits. Production and acreage increased by 6.5 and 3.8% respectively in 2013. The leading counties that account for up to 78% of the volume of Avocado produced in the country were Bungoma (22.1%), Murang'a (19.8%) and Migori (11.5%). However, Avocados produced in Bungoma and Migori are fibrous and not of the export quality.

Table: Production of Avocados in Selected Counties, 2011-2013

County	2011			2012			2013			% share by value
	Area (Ha)	Quantity (MT)	Value (Kshs-million)	Area (Ha)	Quantity (MT)	Value (Kshs-million)	Area (Ha)	Quantity (MT)	Value (Kshs-million)	
Bungoma	1,352	32,629.0	1,164.0	1,626.0	39,210.0	1,262.9	1,633.0	39,333.0	1,278.2	34
Migori	1,476	14,648.0	409.7	1,832.0	18,228.0	525.1	2,058.0	20,476.0	669.9	18
Muranga	1,744	29,146.0	196.6	1,758.0	30,085.0	208.1	1,774.0	35,289.0	322.2	9
Nyamira	492	10,270.0	263.0	441.0	9,846.0	85.3	460.0	10,172.0	262.8	7
Kisii	902	14,333.0	214.0	912.0	15,451.0	228.1	924.0	15,766.0	240.1	6
Kiambu	619	13,826.0	173.9	637.0	14,401.0	180.4	639.0	13,706.0	156.2	4
Others	3,375	34,389.4	565.2	3,814.6	39,727.0	677.7	3,950.6	43,057.3	819.4	22
<b>National Total</b>	<b>9,960</b>	<b>149,241</b>	<b>2,986.3</b>	<b>11,020</b>	<b>16,6948</b>	<b>3,167.6</b>	<b>11,439</b>	<b>177,799.3</b>	<b>3,748.8</b>	<b>100</b>

Avocado value chain bears great potential for the processing industry but the greatest setback is high postharvest losses, limited availability of varieties required by the processor, poor harvesting procedures where immature fruits are harvested hence impacting negatively on the global competitiveness of Avocado fruits from Kenya. Other major challenges of economic importance are insect pests and diseases such as fruit fly, Phytophthora and Anthracnose. Increased demand in fresh market, and pharmaceuticals and cosmetic industries provide are opportunities for growth and expansion of Avocado value chain.

## 6.6 PAW PAW (CARICA PAPAYA)

In year 2013, pawpaw contributed Kshs. 3.8 billion. The area under production was **9,336Ha**. Both the cropped area and volume increased mainly due to promotion by Small Holder Horticulture Empowerment Programme Promotion Unit Project (SHEP-UP) in Bungoma and Kakamega as shown in the table below (Table 60). The main varieties grown include Mountain, Solo, Sunrise, Honey dew and Hawaii. The following varieties, Sunrise hybrid, Sunrise Pekerra, Solo Sunset, Malaysian 5, 7, 10, and 12, are under trial in various KARI centres. The leading counties in terms of value were Bungoma (26%), Kakamega (13%), Migori (12%), Meru (9%) and Makueni (6%).

The major challenges to production of pawpaw are inadequate supply of quality planting material arising from genetic erosion due to open pollination during production; (since we do not have established seed producers for pawpaw seed, basic seed is usually imported) , low productivity, insect pests and diseases; especially spider mites and powdery mildew.

Table 52: Production of Pawpaw in Selected Counties, 2011-2013

County	2011			2012			2013			% share by value
	Area (Ha)	Quantity (MT)	Value (Kshs)	Area (Ha)	Quantity (MT)	Value (Kshs)	Area (Ha)	Quantity (MT)	Value (Kshs)	
Bungoma	832	20,024	305,240,001	929	22,808	449,110,000	978	23,980	1,006,280,000	26
Kakamega	44	296	98,360,000	58	367	349,947,800	65	267	489,593,000	13
Migori	1,314	11,834	441,844,400	1,352	12,017	431,760,200	1,398	13,158	476,986,825	12
Meru	391	7,140	203,140,000	592	21,897	563,075,000	486	15,260	347,300,000	9
Makueni	360	10,840	198,278,000	393	11,728	212,409,800	430	12,050	223,378,100	6
Others counties	4,560	51,211	1,071,058,195	5,180	64,698	1,340,697,506	5,979	67,895	1,300,101,816	34
<b>National total</b>	<b>7,501</b>	<b>101,345</b>	<b>2,317,920,596</b>	<b>8,504</b>	<b>133,515</b>	<b>3,347,000,306</b>	<b>9,336</b>	<b>132,610</b>	<b>3,843,639,741</b>	<b>100</b>

## 6.7 CITRUS (*CITRUS SP*)

Citrus is an important fruit in Kenya because of its nutritional and commercial value. In 2013, the total area of all citrus varieties was 10,648.8 Ha with a production volume of 148,426 MT, up from 8,336 Ha with a production of 86,869.6 MT in 2012. The main citrus varieties produced in the country are oranges, lemon, Tangerines, lime and Grape fruit

Kwale county was the leading county producing highest quantities of all citrus categories (Oranges, lemon, Grape fruit, Tangerines and lime). The leading counties accounting for the highest volumes of oranges produced in Kenya were Kwale, Makueni, Kilifi and Lamu with 41.6%, 16.6% and 10.6% respectively with a total value of Ksh 3.98 billion, an increase of 172% increase as compared with the value in 2012. The leading counties accounting for Lemon production in 2013 were Kwale (21.7%), Embu (20.1%) and Kilifi (14.2%) with a total value of Ksh 316 Million (Table 48). The leading counties in production of the lime were Kwale, Lamu and Kilifi, counties producing 32.1%, 30.6% and 16.3% (Table 49) valued at Ksh 141 Million. The leading counties in the production of grape fruit were Kwale (82.7%) and Kilifi (13.8%) with a value of Ksh 49.5 million while the leading counties by value in tangerine production were Kwale, Lamu, Makueni and Kilifi with 43%, 19%, 17% and 16.1% valued at Ksh 354 Million in total (Table 50).

Table 53: Production of Oranges in selected Counties 2011-2013

County	2011			2012			2013			% share by value
	Area (Ha)	Quantity (MT)	Value (Kshs Million)	Area (Ha)	Quantity (MT)	Value (Kshs Million)	Area (Ha)	Quantity (MT)	Value (Kshs Million)	
MacHakos	621	3,942	90	1,583	6,580	78	1,543	6,145	1,852	46.5
Kwale	1,200	20,157	403	500	8,398	168	2,070	41,400	828	20.8
Makueni	862	15,164	572	911	16,306	614	925	16,525	623	15.6
Kilifi	794	10,438	189	792	10,425	189	806	10,547	191	4.8
Lamu	527	2,791	55.8	617	4,114	82	562	10,535	105	2.6
Taita taveta	275	4,073	82	286	3,976	80	282	4,288	84	2.1
Muranga	336	2,162	52	342	2,243	52	345	2,764	63	1.6

Trans nzoia	15	222	13	102	2,048	6	119	26	45	1.1
Other Counties	786	6,563	177	809	6,940	191	842	7,202	190	4.8
<b>National Total</b>	<b>5,416</b>	<b>65,511</b>	<b>1,634</b>	<b>5,941</b>	<b>61,030</b>	<b>1,460</b>	<b>7,494</b>	<b>99,432</b>	<b>3,982</b>	<b>100</b>

**Table 54: Production of Lemon in selected Counties 2011-2013**

County	2011			2012			2013			% share by value
	Area (Ha)	Quantity (MT)	Value (Kshs million)	Area (Ha)	Quantity (MT)	Value (Kshs million)	Area (Ha)	Quantity (MT)	Value (Kshs million)	
Embu	8	64	2	5	250	3	11	3,300	99	31
Kwale	60	998	15	65	1,075	16	230	3,550	36	11
Kilifi	157	2,306	35	157	2,302	35	156	2,324	35	11
Makueni	80	664	18	93	837	23	97	896	25	8
Lamu	68	370	5.5	93	462	7	56	1,451	22	7
Migori	40	360	12	45	450	12	49	619	19	6
Elgeyo marakwet	55	772	15	65	914	18	65	924	18	6
Others			66	498	3,756	75	536	4,241	81	26
<b>National Total</b>	<b>783</b>	<b>7,814</b>	<b>153</b>	<b>956</b>	<b>9,132</b>	<b>170</b>	<b>1,135</b>	<b>16,381</b>	<b>316</b>	<b>100</b>

**Table 55: Production of Lime in selected Counties**

County	2011			2012			2013			% share by value
	Area (Ha)	Quantity (MT)	Value (Kshs million)	Area (Ha)	Quantity (MT)	Value (Kshs million)	Area (Ha)	Quantity (MT)	Value (Kshs million)	
Kwale	40.0	704.0	10.6	41.0	722.0	10.8	165.0	2950.0	59.0	41.82
Lamu	175.0	647.0	9.7	203.0	704.0	10.6	175.0	2815.0	28.2	19.97
Kilifi	101.0	1548.0	23.2	103.0	1648.0	24.7	104.0	1495.0	22.4	15.89
Tana river	112.0	999.0	15.0	125.0	1145.0	17.2	149.0	1377.0	20.7	14.64
Makueni	21.0	123.0	3.8	25.0	152.0	4.4	29.0	214.0	6.1	4.36
Taita taveta	17.0	270.0	4.1	18.0	287.0	4.4	18.0	289.0	4.2	2.99
Others	11.0	119.0	1.2	9.0	56.0	0.6	5.0	51.0	0.5	0.33
<b>National Total</b>	<b>477.0</b>	<b>4410.0</b>	<b>67.7</b>	<b>524.0</b>	<b>4714.0</b>	<b>72.6</b>	<b>645.0</b>	<b>9191.0</b>	<b>141.1</b>	<b>100.0</b>

**Table 56: Production of Grapefruit in selected Counties 2011-2013**

County	2011			2012			2013			% share by value
	Area (Ha)	Quantity (MT)	Value (Kshs million)	Area (Ha)	Quantity (MT)	Value (Kshs million)	Area (Ha)	Quantity (MT)	Value (Kshs million)	
Kwale	30.0	525.0	5.2	32.0	560.0	5.6	130.0	2050.0	41.0	82.8
Kilifi	32.0	295.0	4.4	32.0	307.0	4.7	37.0	342.0	5.3	10.7
Elgeyo marakwet	2.0	31.0	2.5	2.0	31.0	2.5	2.0	31.0	2.5	5.0

Other counties	0.0	7.0	0.1	6.0	17.0	0.1	6.0	56.0	0.8	1.6
<b>National Total</b>	<b>64.0</b>	<b>858.0</b>	<b>12.2</b>	<b>72.0</b>	<b>915.0</b>	<b>12.9</b>	<b>175.0</b>	<b>2479.0</b>	<b>49.5</b>	<b>100.0</b>

**Table 57: Production of Tangerines in selected Counties 2011-2013**

County	2010			2011			2012			% share by value
	Area (Ha)	Quantity (MT)	Value (Kshs million)	Area (Ha)	Quantity (MT)	Value (Kshs million)	Area (Ha)	Quantity (MT)	Value (Kshs million)	
Makueni	212.0	3427.0	131.1	224.0	3553.0	135.6	231.0	3558.0	135.6	38.2
Kwale	250.0	4547.0	20.0	100.0	1819.0	36.4	454.0	9080.0	90.8	25.6
Kilifi	261.0	3088.0	61.8	260.0	3120.0	62.4	262.0	3376.0	67.5	19.0
Lamu	167.0	904.0	18.1	176.0	1728.0	34.6	167.0	4072.0	40.7	11.5
Mombasa	8.0	175.0	0.6	9.0	191.0	3.8	14.0	242.0	4.8	1.4
Taita taveta	7.0	91.0	1.9	7.0	167.0	3.4	8.0	180.0	3.7	1.0
Other counties	55.5	476.0	13.3	67.5	502.0	13.6	64.3	435.0	11.4	3.2
<b>National Total</b>	<b>960.5</b>	<b>12708</b>	<b>246.7</b>	<b>843.5</b>	<b>11080.0</b>	<b>289.8</b>	<b>1200.3</b>	<b>20943</b>	<b>354.6</b>	<b>100.0</b>

The major challenges facing citrus production include inadequate quality planting materials, poor orchard management, insect pests and prevalence of greening and gummosis diseases. Opportunities available include growth and expansion in the soft drinks and beverage industry where lime and lemon are blended in the processing of these drinks.

## 6.8 PEACHES (PRUNUS PERSICA)

Peaches are grown for the domestic market. There has been an increase for demand of peaches in the domestic market. The major counties in production of peaches were Kiambu and Nyandarua accounting for 89% and 6% in value respectively. Other counties are Baringo, Uasin Gishu and Narok. The major constraint to increased production of peaches is inadequate quality planting material. In addition, there is limited knowledge on appropriate agronomic practices among growers.

**Table 58: Production of Peaches in Selected Counties, 2011-2013**

County	2011			2012			2013			% share by value
	Area (Ha)	Quantity (MT)	Value (Kshs)	Area (Ha)	Quantity (MT)	Value (Kshs)	Area (Ha)	Quantity (MT)	Value (Kshs)	
Kiambu	21.00	207.00	21,225,000.00	21.00	264.00	24,240,000.00	22.00	262.00	25,200,000.00	89.4
Nyandarua	6.00	104.00	977,600.00	7.00	112.00	1,332,800.00	10.00	134.00	1,600,000.00	5.67
Baringo	18.00	24.00	700,000.00	18.00	24.00	710,200.00	18.00	24.00	720,000.00	2.55
Narok	3.00	13.00	65,942.00	3.00	41.00	210,000.00	3.00	15.00	300,000.00	1.06
Uasin gishu	2.00	4.00	400,000.00	2.00	4.00	40,000.00	2.00	10.00	300,000.00	1.06
Others	8.00	2.00	91,000.00	4.00	2.00	96,000.00	3.00	1.00	80,000.00	0.28
<b>All counties total</b>	<b>58.00</b>	<b>354.00</b>	<b>23,459,542.00</b>	<b>55.00</b>	<b>447.00</b>	<b>26,629,000.00</b>	<b>58.00</b>	<b>446.00</b>	<b>28,200,000.00</b>	<b>100</b>

## 6.9 STRAWBERRIES (*FRAGARIA SP*)

Straw berry is grown for the domestic market. The main varieties grown include chandler, Douglas, Cambridge favourite and Aiko among others. The crop can be grown by both the small scale and the large scale farmers. The demand for strawberry has been on the increase in the recent years. In 2013, the area under production was 53 Ha, producing 410 MT with a value of Kshs. 50 million. The major strawberry producing county was Kiambu accounting for 97% of the total value of strawberries produced in the country. The potential for increased production of strawberry is immense due to ready market in the food processing industry. The major constraints to increased production of strawberry are lack of suitable day-neutral varieties, inadequate quality planting materials, pests especially birds and limited knowledge on appropriate agronomic practices among growers.

Table 59: Production of Strawberries in Selected Counties, 2011-2013

County	2011			2012			2013			% share by value
	Area (Ha)	Quantity (MT)	Value (Kshs)	Area (Ha)	Quantity (MT)	Value (Kshs)	Area (Ha)	Quantity (MT)	Value (Kshs)	
Kiambu	11	203	35,000,000	24	460	45,535,264	26	392	48,608,480	97.1
Nairobi	1	10	704,000	2	16	1,411,000	2	14	1,057,000	2.1
Nyeri	12	1	400,000	18	1	124,000	22	2	178,000	0.4
Muranga	0	0	40,000	1	0	80,000	1	1	120,000	0.2
Nyandarua	0	0	0	0	0	0	0	1	60,000	0.1
Other counties	16	0	0	0	0	0	2	0	20,000	0.0
<b>National Total</b>	<b>40</b>	<b>214</b>	<b>36,144,000</b>	<b>45</b>	<b>477</b>	<b>47,150,264</b>	<b>53</b>	<b>410</b>	<b>50,043,480</b>	<b>100</b>

## 6.10 TREE TOMATOES (*SOLANUM BETACEUM*, SYN. *CYPHOMANDRA BETACEA*)

The fruit is also referred to Tamarrilo. During the year under review, the area, production and value of tree tomato was 789 Ha, 4,879 MT and 165 Million respectively. There was an increase in both production area and value of the crop in the year 2013 as compared to 2012. This could be attributed to increase in area of production in the year 2013. The counties with major production of Tree tomato were Nyeri, Nakuru, Nyandarua, Kiambu and Meru. accounting for 77% of the total value of the fruit produced in the country. The potential for increased production is immense due to increasing awareness of the nutritional value of tree tomato. The major constraints to increased production of Tree tomato lack of suitable varieties, insect pests and diseases, unavailability of quality planting material and limited knowledge on appropriate agronomic and postharvest practices.

Table 60: Production of Tree Tomato by Selected Counties, 2011-2013

County	2011			2012			2013			% shared by value
	Area (Ha)	Quantity (MT)	Value (Ksh)	Area (Ha)	Quantity (MT)	Value (Ksh)	Area (Ha)	Quantity (MT)	Value (Ksh)	
Nyeri	51	453	23,500,000	55	475	22,455,890	79	851	40,231,500	24
Nakuru	118	910	25,070,000	124	941	26,690,000	135	957	28,120,016	17
Nyandarua	150	820	16,028,000	178	889	19,564,000	219	1,034	23,854,400	14

Kiambu	29	194	11,600,000	30	200	10,837,241	52	364	19,656,000	12
Meru	45	255	9,600,000	82	379	14,440,000	82	515	16,120,000	10
Other counties	153.2	710	21,466,300	170.2	862	26,155,800	222	1,177	38,317,520	23
<b>National total</b>	<b>546.2</b>	<b>3342</b>	<b>107,264,300</b>	<b>639.2</b>	<b>3746</b>	<b>120,142,931</b>	<b>789</b>	<b>4,898</b>	<b>166,299,436</b>	<b>100</b>

### 1.1 WHITE SAPOTE (*Casimiroa edulis*)

White sapote has immense potential for increased production due to its use as source of sugar in the confectionery industry. However, this potential has not been fully exploited as the area the total area in the country under the crop was 54 Ha giving a production of 26 MT. During the year under review, area increased but the production dropped by 31%. The major counties in production of white sapote were Kakamega, Trans Nzoia and Kitui. The major constraint to increased production of white sapote is limited knowledge on agronomic practices.

Table 61: Production of White Sapote in Selected Counties, 2011-2013

County	2011			2012			2013			% share by value
	Area (Ha)	Quantity (MT)	Value (Kshs)	Area (Ha)	Quantity (MT)	Value (Kshs)	Area (Ha)	Quantity (MT)	Value (Kshs)	
Kakamega	5	23	1,190,000	4	25	1,515,000	6	33	1,840,000	21
Trans nzoia	5	50	1,000,000	8	80	1,600,000	10	50	1,600,000	18
Kitui	7	30	1,730,000	9	32	1,000,000	10	32	1,480,000	17
Meru	1	2	42,000	3	32	1,545,000	2	18	840,000	10
Machakos	-	-	-	5	90	1,800,000	8	40	800,000	9
Elgeyo marakwet	3	16	790,000	3	16	790,000	3	16	790,000	9
Nakuru	-	8	400,000	-	8	400,000	1	16	780,000	9
Narok	4	28	675,000	4	54	3,500,000	4	15	300,000	3
Other counties	8	10	152,000	10	39	514,000	10	41	265,000	3
<b>National total</b>	<b>33</b>	<b>167</b>	<b>5,979,000</b>	<b>46</b>	<b>376</b>	<b>12,664,000</b>	<b>54</b>	<b>261</b>	<b>8,695,000</b>	<b>100</b>

### 1.2 GUAVAS (*Psidium guajava*)

Guava is undomesticated whose seeds are propagated through animal dispersion. During the year under review, the area under guava was 3,306 Ha which produced 7,625 MT with a value of Ksh 104 Million in 2013. As compared to 2012, the production remained the same though the area increased. There exist disparities in prices with counties like Machakos reporting a price of Ksh. 2 as compared to Ksh 200 in Meru County. However, the fruit remains undervalued across counties due to the little attention paid in domesticating and managing it. The leading counties in guava production were Nyamira, Kakamega and Kisii. The major constraints neglect of the crop hence the farm gate prices are low and sometimes valueless.

Table 62: Production of Guavas in Selected Counties, 2011-2013



County	2011			2012			2013			% share by value
	Area (Ha)	Quantity (MT)	Value (Kshs Million)	Area (Ha)	Quantity (MT)	Value (Kshs Million)	Area (Ha)	Quantity (MT)	Value (Kshs Million)	
Nyamira	87	2,417	53.98	83	2,024	50.10	73	1,774	43.85	42
Kakamega	1,033	68	80.15	1,036	72	70.35	2,234	107	14.69	14
Kisii	68	546	9.65	70	589	10.14	77	704	11.57	11
Homa bay	227	340	4.25	147	700	7.4	142	704	7.76	7
Mandera	-	-	-	21	302	8.2	17	267	7.64	7
Meru	2	14	0.5	2	14	0.58	3	20	4	4
Siaya	512	2,620	2.4	515	2,628	2.56	516	2,631	2.62	3
Migori	31	154	1.1	33	163	1.68	35	171	2.2	2
Other counties	217	1,142	9.48	206	1,208	9.87	209	1,247	9.77	9
<b>National totals</b>	<b>2,177</b>	<b>7,301</b>	<b>161.51</b>	<b>2,113</b>	<b>7,700</b>	<b>160.88</b>	<b>3,306</b>	<b>7,625</b>	<b>104.09</b>	<b>100</b>

### 6.11 PINEAPPLES (ANANAS COMOSUS)

Pineapple is grown for both fresh market and processing market. The main variety grown is smooth cayenne. During 2013, the area and production reduced by 0.1Ha and 96.1 MT respectively. Acreage and Production stood at 6,290 Ha and 120,876 MT valued at Ksh 3.19 billion, 17.5% increase from 2012. The major counties accounting for 91.1% of total pineapple production were Kericho, Migori, Bungoma, and Busia among others. The main opportunity for pineapple production is high demand for pineapple concentrates. Moreover, smallholder farmers produce pineapple under organic conditions which can lead to high marketability of local produce with appropriate branding. The main constraints to pineapple production are unavailability of quality planting material and insect pests (especially mealy bugs and nematodes) and poor agronomic practices among smallholders. In addition, there is limited cottage industry to process pineapple fruit in diverse range of products.

Table 63: Production of Pineapples in Selected Counties, 2011-2013

County	2011			2012			2013			% share by value
	Area (Ha)	Quantity (MT)	Value (Kshs million)	Area (Ha)	Quantity (MT)	Value (Kshs million)	Area (Ha)	Quantity (MT)	Value (Kshs million)	
Kericho	1,958	58,356.0	723.2	2,023.0	59,806.0	742.6	2,030.0	60,580.0	920.2	28.9
Migori	2,081	25,731.0	540.2	2,190.0	26,429.0	697.4	2,247.0	26,209.0	738.1	23.2
Bungoma	238	4,715.0	262.8	305.0	7,002.0	354.3	315.0	6,241.0	433.9	13.6
Kiambu	452	12,280.0	346.8	465.0	8,675.0	308.8	378.0	8,070.0	433.2	13.6
Busia	23	256.0	11.6	186.0	6,332.0	185.7	192.0	6,702.0	194.0	6.1
Other counties	639	9,083.0	267.5	771.0	11,528.0	322.0	778.0	11,574.0	316.5	9.9
<b>National Total</b>	<b>5,691</b>	<b>111,241</b>	<b>2,178.8</b>	<b>6,290.1</b>	<b>120,972.1</b>	<b>2,710.7</b>	<b>6,290.0</b>	<b>120,876.0</b>	<b>3,186.0</b>	<b>100.0</b>

## 6.12 MELON (CUCUMIS MELO SP)

The area under Melon was 2,006 Ha producing 35,082 MT with a value of Ksh 1.8 billion during 2013. The leading county in melon production was Migori (46%). Others were Lamu, Makueni and Machakos Counties. The main varieties grown are Charleston-grey and Sugar baby under rainfed condition. The jump in production in Migori County was attributed to increased use of Irrigation in Suba East Subcounty which had a total hectareage of 1,613 under water melon. However, the price per kilo dropped from Ksh 46 in 2012 to Ksh 37 in 2013 resulting to a slump in total value.

Table 64: Production of Melons in Selected Counties, 2011-2013

County	2011			2012			2013			% share by value
	Area (Ha)	Quantity (MT)	Value (Kshs Million)	Area (Ha)	Quantity (MT)	Value (Kshs Million)	Area (Ha)	Quantity (MT)	Value (Kshs Million)	
Migori	1,986	34,822	2,934.50	2,121	36,075	2,996.52	2,006	35,082	1,847.52	46
Lamu	149	3,247	97.41	303	12,120	363.6	303	12,120	363.6	9
Makueni	157	11,341	222.78	206	14,893	295.09	243	16,051	340.49	8
Machakos	82	842	29.55	258	2,481	160.02	476	4,774	320.83	8
Tana river	156	5,080	152.4	160	5,334	160.02	243	7,487	224.61	6
Kilifi	101	2,828	84.83	88	3,103	93.08	114	3,918	117.53	3
Meru	66	2,880	74.88	88	3,740	90.88	86	3,944	83.13	2
Kisumu	77	1,270	44.85	87	1,535	60.25	115	2,225	82.8	2
Other counties	1,161	17,224	691.86	1,431	27,376	767.08	1,752	23,030	669.51	17
<b>National</b>	<b>1,986</b>	<b>34,822</b>	<b>2,934.50</b>	<b>2,121</b>	<b>36,075</b>	<b>2,996.52</b>	<b>2,006</b>	<b>35,082</b>	<b>1,847.52</b>	<b>100</b>

## 6.13 PEARS (PYRUS COMMUNIS)

Pears are grown for the domestic market majorly in two Counties; namely; Kiambu and Nyandarua each accounting for 65% and 24% of the total value of pears in the Country respectively. The production during the reporting year was 4,193 MT with a value of Ksh 111 million. The crop is grown by small scale farmers however, no improvement has been done on the crop since it was introduced in the colonial era.

Table 65: Production of Pears in Selected Counties 2011-2013

County	2011			2012			2013			% share by value
	Area (Ha)	Quantity (MT)	Value (Kshs)	Area (Ha)	Quantity (MT)	Value (Kshs)	Area (Ha)	Quantity (MT)	Value (Kshs)	
Kiambu	131	2,615	83,400,000	126	2,155	63,107,000	125	2,034	72,304,000	65
Nyandarua	70	1,461	21,082,000	71	1,507	26,817,000	74	1,535	26,344,000	24
Nakuru	26	256	5,260,000	27	306	6,270,000	26	252	5,030,000	5
Uasin gishu	14	205	4,090,000	12	35	1,155,000	12	52	1,760,000	2
Other counties	63	343	4,164,940	61	335	4,757,000	58	320	5,552,000	5
<b>National</b>	<b>304</b>	<b>4,880</b>	<b>117,996,940</b>	<b>297</b>	<b>4,338</b>	<b>102,106,000</b>	<b>295</b>	<b>4,193</b>	<b>110,990,000</b>	<b>100</b>

## 6.14 APPLES (MALUS DOMESTICA)

Apple is grown by smallholder farmers for the domestic market. In 2013, Apple contributed Kshs. 19.5 million with a production of 395MT. The major counties in production of Apple were Kiambu (48%), Nakuru (21%), and Kirinyaga (10%). The major constraint to increased production of apple is unavailability of quality planting materials and improved varieties that bear big fruits.

Table 66: Production of Apples in Selected Counties, 2011-2013

County	2011			2012			2013			% share by value
	Area (Ha)	Quantity (MT)	Value (Kshs )	Area (Ha)	Quantity (MT)	Value (Kshs )	Area (Ha)	Quantity (MT)	Value (Kshs )	
Kiambu	5	68	6,251,200	12	74	8,300,000	13	74	9,398,000	48
Nakuru	4	56	1,365,000	6	64	2,878,000	6	72	4,100,000	21
Kirinyaga	3	30	1,200,000	4	40	1,900,000	4	40	1,900,000	10
Baringo	10	81	1,020,000	10	81	1,024,000	14	83	1,265,400	6
Uasin Gishu	4	24	2,100,000	5	22	1,960,000	6	26	1,217,000	6
Nyandarua	8	29	394,000	9	41	163,750	19	90	1,108,500	6
Narok	4	7	600,000	4	13	780,000	4	7	335,000	2
other counties	2	3	96,000	2	3	126,000	6	3	241,100	1
<b>National Total</b>	<b>40</b>	<b>298</b>	<b>13,026,200</b>	<b>52</b>	<b>338</b>	<b>17,131,750</b>	<b>72</b>	<b>395</b>	<b>19,565,000</b>	<b>100</b>

## 6.15 PLUMS (PRUNUS DOMESTICA)

Plum is grown for domestic fresh and processing markets. The major counties in production of plum by value were Kiambu (48%), and Nyandarua (27%). Other counties were Nakuru, Kirinyaga and Nyeri. There is immense potential for increased production of plum to meet the increasing demand for fresh local market, processing as well as export market. The major constraints to increased production of plum are unavailability of quality planting materials and lack of suitable varieties.

Table 67: Production of Plums in Selected Counties, 2011-2013

County	2011			2012			2013			% share by value
	Area (Ha)	Quantity (MT)	Value (Kshs )	Area (Ha)	Quantity (MT)	Value (Kshs )	Area (Ha)	Quantity (MT)	Value (Kshs )	
Kiambu	41	489	23,570,000	41	487	10,262,960	38	444	25,808,000	48
Nyandarua	58	1217	12,130,000	62	1248	13,093,106	67	1151	14,635,200	27
Nakuru	24	286	2,856,000	24	222	3,330,000	24	286	2,900,000	5
Kirinyaga	9	90	1,800,000	12	100	2,000,000	13	120	2,400,000	5
Nyeri	15	135	1,740,000	16	140	1,972,000	16	96	2,000,000	4
Uasin Gishu	9	33	1,272,000	9	34	1,460,000	9	46	1,628,000	3
other counties	45	196	4,188,998	41	217	5,585,000	43	157	3,887,000	7

<b>National Total</b>	<b>201</b>	<b>2446</b>	<b>47,556,998</b>	<b>205</b>	<b>2448</b>	<b>37,703,066</b>	<b>210</b>	<b>2300</b>	<b>53,258,200</b>	<b>100</b>
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## 6.16 LOQUATS (ERIOBOTRYA JAPONICA)

Loquat is grown for local fresh market. In 2013 the production dropped slightly from 1,102MT in 2012 to 1,095MT in the year under review valued at 24.9 million. The major counties in production of loquat by value were Makueni (41%), Kisii (21%), Nakuru (10%) and Meru (7%). The major constraints to increased production of loquat are prevalence of insect pests and diseases, high postharvest losses, lack of suitable varieties and unavailability of quality planting material.

Table 68: Production of Loquats in Selected Counties, 2011-2013

County	2011			2012			2013			% share by value
	Area (Ha)	Quantity (MT)	Value (Kshs )	Area (Ha)	Quantity (MT)	Value (Kshs )	Area (Ha)	Quantity (MT)	Value (Kshs )	
Makueni	38	182	7,576,000	43	243	9,425,000	44	273	10,325,000	41
Kisii	46	303	4,030,000	48	328	4,305,000	55	420	5,270,000	21
Nakuru	5	21	770,000	6	26	911,752	11	55	2,409,737	10
Meru	12	47	1,444,000	16	59	2,116,000	13	55	1,770,000	7
Machakos	2	4	40,000	12	255	3,550,000	12	64	1,250,000	5
Bungoma	11	60	1,350,000	11	61	887,000	12	66	1,145,000	5
Other counties	31.6	110	1,738,200	34.6	130	1,916,700	47.6	162	2,792,000	11
<b>National Total</b>	<b>146</b>	<b>727</b>	<b>16,948,200</b>	<b>171</b>	<b>1,102</b>	<b>23,111,452</b>	<b>195</b>	<b>1,095</b>	<b>24,961,737</b>	<b>100</b>

## 6.17 GRAPES (VITIS VINIFERA)

Grapes is a new tropical fruit crop in Kenya which commands premium prices in the local fresh market. It has been grown under irrigation in some warm to hot areas in particular Yatta with success. The main varieties grown include: Dodrelabi, Muscat of Hamburg, Golden Muscat, Office Vine and Muscat of Alexandria. Production of grapes in the last few years has been static in the area but its value has been on the increase due the high prices in the fresh market. The main growing counties include, Machakos, Meru and Taita Taveta.

Table 69: Production of Grapes in Selected Counties, 2011-2013

County	2012			2013			% share by value
	Area (Ha)	Quantity (MT)	Value (Kshs )	Area (Ha)	Quantity (MT)	Value (Kshs )	
Machakos	38	198	19,000,000	38	198	19,000,000	53.6
Meru	44	167	16,440,000	44	167	16,440,000	46.3
Taita Taveta	6	10	120,000	2	3	30,000	0.1
<b>National Total</b>	<b>88</b>	<b>375</b>	<b>35,560,000</b>	<b>84</b>	<b>368</b>	<b>35,470,000</b>	<b>100</b>

## 6.18 CUSTARD APPLE

The data for this fruit was not captured in previous reports however, this report has featured it because of its growth potential in the Country. The leading Counties in production of the crop are Taita Taveta (27%), Elgeyo Marakwet (21%) and Kilifi (13%). Others are Nandi, Baringo, Nakuru among others listed in the Table below. The area under the Crop and productivity has remained steady over the years. The crop was valued at Kshs 7.4 Million in 2013 which was a slight drop compared to 2012.

**Table 70: Production of Custard Apple in selected Counties 2011-2013**

County	2011			2012			2013			% share by value
	Area (Ha)	Quantity (MT)	Value (Kshs)	Area (Ha)	Quantity (MT)	Value (Kshs)	Area (Ha)	Quantity (MT)	Value (Kshs)	
Taita taveta	17	82	2,010,000	17	77	1,830,000	17	83	2,000,000	27
Elgeyo Marakwet	7	78	1,322,000	8	85	1,581,000	8	85	1,581,000	21
Kilifi	19	49	910,000	20	50	960,000	21	50	960,000	13
Nandi	1	16	632,000	2	16	635,000	2	22	873,600	12
Baringo	4	14	640,000	5	14	740,000	5	14	741,200	10
Nakuru	-	9	450,000	-	9	450,000	-	7	350,000	5
Tharaka	1	4	300,000	4	28	324,000	1	4	262,500	4
Kitui	3	11	172,000	4	11	172,000	5	13	220,000	3
Other counties	14	32	369,500	9	33	829,300	9	32	436,150	6
<b>National Total</b>	<b>66</b>	<b>295</b>	<b>6,805,500</b>	<b>69</b>	<b>323</b>	<b>7,521,300</b>	<b>68</b>	<b>310</b>	<b>7,424,450</b>	<b>100</b>

## 7 NUTS

### 7.1 OVERALL PERFORMANCE OF NUTS

The leading nuts grown in Kenya by value are coconut (54%), Macadamia (15%), Cashew nuts (12), Peanuts (16%) and Bambara groundnuts (3%). In 2013, the sector contributed 7.4 billion which was 5% to the total value of the Horticulture sector. The total area under nuts expanded significantly particularly Cashew and Coconut which have seen interventions by MOALF and private sector.

Table 71: Production of Nuts, 2011-2013

County	2011			2012			2013			% share by value
	Area (Ha)	Quantity (MT)	Value Kshs (Million)	Area (Ha)	Quantity (MT)	Value Kshs (Million)	Area (Ha)	Quantity (MT)	Value Kshs (Million)	
Peanut	15,404	52,590	67.94	17,528	61,389	4,262.72	17,311	94,072	4,012.58	54
Coconut	30,787	46,616	24.91	31,443	46,389	1,147.56	39,156	64,079	1,220.56	16
Macadamia nut	2,705	14,125	14.78	3,018	17,027	952.30	3,027	19,832	1,077.45	15
Cashew nut	15,916	16,384	10.46	15,137	22,174	725.44	21,611	21,086	861.38	12
Bambara nut	365	3,829	4.80	471	5,245	261.47	464	5,269	243.75	3
<b>Nuts Total</b>	<b>65,177</b>	<b>133,544</b>	<b>122.89</b>	<b>67,597</b>	<b>152,224</b>	<b>7,349.50</b>	<b>81,569</b>	<b>204,338</b>	<b>7,415.73</b>	<b>100</b>

The challenges facing the nut sub-sector include high cost of investment, scattered small scale growers, poor market channels and pricing, prevalence of pests and diseases, and malpractices such as premature Harvesting of nuts and smuggling of in-shell nuts for exports. Domestic consumption of nuts is hampered by high prices occasioned by imposition of taxes on processed nuts sold locally. However, the nuts sub-sector revitalization measures instituted by the government such as encouraging establishment of adequate domestic processing capacity, organizing industry players into associations and producer business groups, availing of quality planting materials on grant, training farmers on crop husbandry and restriction on export of unshelled nuts have helped increase the nuts productivity.

### 7.2 MACADAMIA NUTS (MACADAMIA TETRAFOLIA AND M. INTERGRIFOLIA)

In 2013, the area under macadamia nuts was 3,027 Ha with a production of 19,832 MT valued at Kshs.1.77 billion. There have been improved prices of nuts, associated with increased competition among nut processing companies and regulation prohibiting export of raw nuts. The minimum farm gate prices for in-shell macadamia nuts was set at Kshs 50-60 per kg. The leading macadamia producing counties are Kiambu and Murang'a each accounting for 18% of the total value of Macadamia in the Country. The major challenges that face Macadamia were malpractices such as premature harvesting of nuts and export of in-shell nuts. In view of this there is need for expansion of area, introduction of high yielding varieties and application of improved agronomic practices to boost production.

Table 72: Production of Macadamia Nuts in Selected Counties, 2011-2013

County	2011			2012			2013			% share by value
	Area (Ha)	Quantity (MT)	Value Kshs(Million)	Area (Ha)	Quantity (MT)	Value Kshs(Million)	Area (Ha)	Quantity (MT)	Value Kshs(Million)	
Kiambu	275	2,521	88.6	442	3,196	158.3	416	3,816	202.3	18.8
Murang'a	286	1,538	105.5	300	1,792	136.8	308	3,037	200.3	18.6
Meru	424	2,440	114.1	440	2,822	169.7	437	2,833	168.7	15.7
Nyeri	75	704	38.6	91	896	50	149	2,516	135.6	12.6
Kirinyaga	225	1,786	88.7	231	1,858	102.7	235	1,901	114.4	10.6
Embu	720	1,305	107.3	711	2,311	166.7	762	2,610	149.9	8.9
Tharaka	119	699	35	157	929	46.5	158	936	51.1	4.7
Taita taveta	257	1,160	40.6	256	1,049	40.7	243	1,057	41.1	3.8
Other counties	323.8	1,972	76.4	390	2,174	81	369	2,216	68	6.3
<b>National</b>	<b>2,704.80</b>	<b>14,125</b>	<b>694.8</b>	<b>3,018</b>	<b>17,027</b>	<b>952.3</b>	<b>3,027</b>	<b>20,922</b>	<b>1,130.6</b>	<b>100</b>

### 1.3 Cashew Nuts (*Anacardium occidentale*.)

The nut is grown in low humid parts of the country particularly the coastal area. In 2013, the area under Cashew nuts was 1,611 Ha with a production of 21,000 MT valued at Kshs. 861 million. During that year, the area and the value increased by 30% and 16% respectively while the yields declined by 5% compared to 2012. The increase in value is attributed to improvement in prices through as a result of direct engagement between processors and growers. The leading Cashew nut producing counties by value were Lamu and Kilifi each having a share of 30%.

Table 73: Production of Cashew Nuts by Selected Counties, 2011-2013

County	2011			2012			2013			% share by value
	Area (Ha)	Quantity (MT)	Value Kshs(Million)	Area (Ha)	Quantity (MT)	Value Kshs(Million)	Area (Ha)	Quantity (MT)	Value Kshs(Million)	
Lamu	4,925	4,672	115.53	5,474	10,318	350.78	4,832	5,854	263.43	30.6
Kilifi	6,502	5,089	159.87	5,266	4,963	154.26	7,191	5,922	259.10	30.1
Kwale	4,080	2,505	51.70	3,880	2,356	48.08	9,086	5,966	209.05	24.3
Tharaka	152	3,900	156.00	164	4,020	160.80	122	3,000	120.00	13.9
Other counties	257	218	8.51	353	517	11.52	380	344	9.80	1.1
<b>National</b>	<b>15,916</b>	<b>16,384</b>	<b>491.61</b>	<b>15,137</b>	<b>22,174</b>	<b>725.44</b>	<b>1,611</b>	<b>21,086</b>	<b>861.38</b>	<b>100.0</b>

### 1.4 Coconut(*Cocos nucifera*)

Coconut industry has flourished in the coastal area whose uses range from the leaves, fruit and the trunk. The current value of the coconut is 1.2 Billion as compared to 1.1 billion in 2012. The area under the coconut tree rose from 31,000 Ha in 2012 to 38,000 in 2013 yielding 64,000 MT. The area increased due to awareness creation on the income generation potential of the nut and diversification of coconut products through value addition. The leading coconut producing counties are Kilifi (69%), Kwale (22%), and Lamu (5.3%). Other counties producing coconut are Tharaka Nithi, Mombasa, Taita Taveta, Tana River and Siaya.

Table 74: Production of Coconut by Selected Counties, 2011-2013

County	2011			2012			2013			% share by value
	Area (Ha)	Quantity (MT)	Value Kshs(Million)	Area (Ha)	Quantity (MT)	Value Kshs(Million)	Area (Ha)	Quantity (MT)	Value Kshs(Million)	
Lamu	4,925	4,672	115.53	5,474	10,318	350.78	4,832	5,854	263.43	30.6
Kilifi	6,502	5,089	159.87	5,266	4,963	154.26	7,191	5,922	259.10	30.1
Kwale	4,080	2,505	51.70	3,880	2,356	48.08	9,086	5,966	209.05	24.3
Tharaka	152	3,900	156.00	164	4,020	160.80	122	3,000	120.00	13.9
Other counties	257	218	8.51	353	517	11.52	380	344	9.80	1.1
<b>National</b>	<b>15,916</b>	<b>16,384</b>	<b>491.61</b>	<b>15,137</b>	<b>22,174</b>	<b>725.44</b>	<b>1,611</b>	<b>21,086</b>	<b>861.38</b>	<b>100.0</b>

County	Area (Ha)	Quantity (MT)	Value Kshs(Million)	Area (Ha)	Quantity (MT)	Value Kshs(Million)	Area (Ha)	Quantity (MT)	Value Kshs(Million)	
Kilifi	1,168	32,598	850.80	21,408	33,302	856.58	20,933	32,804	846.64	69.4
Kwale	6,824	9,925	218.40	6,624	8,888	182.84	15,565	27,053	270.53	22.2
Lamu	1,901	2,709	63.59	2,491	2,754	64.49	1,600	2,755	64.51	5.3
Other counties	894	1,384	37.96	920	1,445	43.65	1,058	1,467	38.88	3.2
National	30,787	46,616	1,170.75	31,443	46,389	1,147.56	39,156	64,079	1,220.56	100.0

The major challenges facing coconut production are retention of old orchards whose productivity has declined, unplanned harvest of coconut trees for timber, lack of quality planting materials, and prevalence of pests and diseases. The sub-sector has potential for value addition into diverse products like desiccated coconut, coconut cream, cocos etc.

### 1.5 Peanut (*Arachis hypogea*)

Peanut also referred to as ground nuts in the country is ranked as fourth most suitable crop for the semi-arid areas of Kenya. In 2013, the area under peanut was 17,311 Ha with a production of 94,042 MT valued at Kshs 4 Billion. However, the local demand for peanuts has not been met by this productivity necessitating imports of the nut from Malawi and Uganda which explain the high farm gate prices of the nut.

Table 75: Production of Peanut by selected Counties, 2011-2013

County	2011			2012			2013			% share by value
	Area (Ha)	Quantity (MT)	Value Kshs(Million)	Area (Ha)	Quantity (MT)	Value Kshs(Million)	Area (Ha)	Quantity (MT)	Value Kshs(Million)	
Migori	4,355	11,766	1,165.08	4,545	12,073	1,192.05	4,293	11,549	1,142.79	28.5
Bungoma	1,778	15,678	922.00	2,347	19,659	993.78	2,408	23,844	1,021.36	25.5
Tharaka	152	2,401	432.10	172	3,101	558.10	222	4,011	722.10	18.0
Kakamega	813	837	205.81	845	782	952.36	1,585	1,235	529.25	13.2
Meru	421	1,362	80.64	453	1,500	89.55	606	1,900	120.98	3.0
Other counties	7,885	20,546	387.46	9,166	24,274	476.88	8,197	51,533	476.09	11.9
<b>National</b>	<b>15,404</b>	<b>52,590</b>	<b>3,193.09</b>	<b>17,528</b>	<b>61,389</b>	<b>4,262.72</b>	<b>17,311</b>	<b>94,072</b>	<b>4,012.58</b>	<b>100</b>

Constraints facing the peanut production include inadequate quality and low adoption of improved Good Agricultural Practices.

### 7.3 BAMBARA GROUNDNUT (*VIGNA SUBTERRANEA*)

Table 76: Production of Bambara nuts by Selected Counties, 2011-2013

County	2011			2012			2013			% share by value
	Area (Ha)	Quantity (MT)	Value Kshs(Million)	Area (Ha)	Quantity (MT)	Value Kshs(Million)	Area (Ha)	Quantity (MT)	Value Kshs(Million)	
Busia	110	652	129.20	132	802	160.38	84	643	128.45	52.7
Bungoma	207	3,081	90.60	291	4,353	93.30	301	4,502	105.15	43.1
Kakamega	38	89	5.48	37	82	7.30	63	112	9.33	3.8



Other counties	10	7	0.49	11	8	0.49	16	12	0.82	0.3
<b>National</b>	<b>365</b>	<b>3,829</b>	<b>225.77</b>	<b>471</b>	<b>5,245</b>	<b>261.47</b>	<b>464</b>	<b>5,269</b>	<b>243.75</b>	<b>100.0</b>

Bambara groundnut is mainly grown in the lower midland (LM) sub agro-ecological zones and to some extent in the upper midland (UM) zone, more so in the UM<sub>1</sub>sub zone in Western and Coastal regions. Production of Bambara groundnut is concentrated in Busia and Bungoma Counties. Yields obtained by small scale farmers are low, in average of 0.3 Mt/Ha. The production of the crop is faced with low yields and poorly adapted varieties. This crop is not popular in other parts of the country outside the western region