

# HORTICULTURE



## VALIDATED REPORT 2017-2018



AGRICULTURE AND FOOD AUTHORITY

HORTICULTURAL CROPS DIRECTORATE



## Foreword

The mandate of AFA HCD is to regulate, promote, develop the production and marketing of horticultural produce. The horticultural sub-sector is seen as a viable solution for the country's need for cash crop diversification, enhanced food nutrition, income generation, employment creation and foreign exchange earning in addition to providing raw material for agro-processing industries. The Horticultural Crops Directorate (HCD) of the Agriculture and Food Authority (AFA), in conjunction with industry stakeholders annually carries out data validation exercise on the performance of the horticulture subsector in. The data is collected from the sub-County level by the Sub-County agriculture staff, hence improving country-wide representation. The findings presented in this report for period 2017 and 2018 covers the performance of the fruits, vegetables and flowers grown in all the Counties. The information generated may be used for planning, research, promotion, and development and investment purposes. The data provides information on area covered by each crop, production in tons and value at the farm gate level. For cut flowers the crop value refers to the Free on Board (FOB) value. The overall potential for each crop and challenges experienced have been discussed. Over time data validation teams have managed to minimize errors emanating from variations in production per unit area and average farm gate prices. Data validation is undertaken by a multi-disciplinary team which is able to interrogate anomalies in submissions made in order to improve on accuracy. Of concern during validation is data inconsistency in area, production and value that is not justified. Additionally, there is a notable challenge of under-reporting for some crops particularly those grown by large-scale estates where field officers have no direct access. Overall data validation has continued to improve each year and with continuous capacity building of the data validation teams the validity of the data collected will continue to be enhanced.

## **Acknowledgement**

The production of this report was made possible by contribution and consultations of many stakeholders.

I would first wish to recognize the contribution of the Kenya National Bureau of Statistics (KNBS) for providing financial and technical support towards data collection from the counties. My special thanks go national team which was drawn from the Ministry of Agriculture, Livestock and Fisheries for their tireless effort in collecting and validating data at sub county level. The County agriculture staff, notably the County Executives Committee members (CECs), County Directors of Agriculture (CDAs), County Horticulture Crops Officers and Sub County Horticulture Crops Officers played a vital role in availing data for discussion and for organizing sessions to deliberate respective reports. This support is highly acknowledged.

The compilation of the final report would not have been possible without the inputs of Grace Kyallo, the Manager Technical and Advisory Services together with a team of dedicated officers James Kamau Paul, Gilbert Kipyegon, Jemimah Ndabarua, Caleb Yatich of HCD and Joshua Oluyali Raphael Khaemba of Min of Agriculture; Patrick M Mwaniki, John G. Mburu, Alphonse Olang'o and Patrick Nderitu of KNBS.

I wish to acknowledge the horticulture farming fraternity that continues to generate the data and information used in preparing this report. Since it is not possible to name each one of you that significantly contributed towards this work, kindly receive our appreciation for your invaluable input.

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## Methodology

The data collection was conducted and coordinated by the KNBS, MOALF and HCD in collaboration with the County Governments. The aim was to collect and validate the performance of the sector and how it was affected by environmental and socio economic factors. The national team reviewed the data capture Templates before forwarding to counties and guidelines for filling the same. Data collected from all the 47 counties was validated through county forums during which the pre-filled data templates were interrogated. The forums were attended by the CDAs and the Sub-County Agriculture Officers (SCAOs) from respective counties, chaired by a member of the validation team. Of concern was the data on area planted production and estimated value which was compared to previous season. A one-week workshop was conducted to clean data subject past trends. It was then followed by a one week retreat to compile a final report.

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## **ACRONYMS**

AFA- Agriculture and Food Authority

ALV – African Leafy Vegetables

CDA- County Director of Agriculture

Ha- Hectare

HCD- Horticultural Crops Directorate

MoALF- Ministry of Agriculture, Livestock and Fisheries

MT- Metric Ton

KES- Kenya Shillings

KNBS- Kenya National Bureau of Statistics

SCAO- Sub- County Agriculture Officer

## **2 CHAPTER ONE**

### **2.1 INTRODUCTION**

The agriculture sector is the mainstay of Kenya's economy contributing 29.3 to the Gross Domestic Product (GDP) and accounting for 80 of national employment. According to the Kenya Economic Survey 2017, the leading subsectors in 2017 were Dairy, Tea and Horticulture, in that order.

The domestic value of horticulture production in 2018 amounted to Kshs. 248.47 Billion compared to Kshs. 207.52 Billion in 2017 equivalent to an increase of 19.7 per cent. Over the same period, cultivated area increased by 3.6 per cent from 402,796 ha to 417,367 ha while total production increased by 7.7 per cent from 6.217 million tons to 6.696 million tonnes in 2018 compared to 5.88 million tonnes in 2017.

In 2018, floriculture registered a 13 per cent increase in value at Kshs. 113.165billion from Kshs. 82.24 billion realized in the year 2017, accounting for 45.54 per cent of the domestic value of horticulture. Fruits production showed mixed reaction during the period under review. The area increased in 2017 by 4.6 percent but the production and value decreased by 7.8 and 3.8 percent respectively. This was attributed to drought in 2017 because most of the fruits in Kenya are grown under rain fed conditions. In 2018, the area increased by 6.2 percent from 175,617ha to 186,494 ha while production and value increased from 2.93 to 3.145 Million tons while the value increased from 53.44Billion to 59.39 Billion representing 7.4 and 11.1 percent increase respectively.

**Table 1 Summary of Performance of Horticultural products per category for the years 2016-2018**

Crops	2016			2017			2018			% Of Total
	Area (Ha)	Volume (MT )	Value(KES)	Area (Ha)	Volume (MT	Value ( KES)	Area (Ha)	Volume (MT	Value ( KES)	
<b>Cut Flowers</b>	13,265	133,658	70,829,466,905	13,280	159,961	82,248,862,888	13,310	161,227	113,165,186,323	<b>45.54</b>
<b>Fruits</b>	170,607	3,189,178	55,687,269,286	186,928	3,226,453	59,307,484,311	185,499	3,371,498	63,807,429,866	<b>25.68</b>
<b>Exotic Veg</b>	117,541	1,887,880	37,908,435,144	134,466	2,250,298	47,071,728,378	141,427	2,412,682	52,220,367,147	<b>21.02</b>
<b>Indigenous Veg</b>	63,287	229,491	6,842,976,893	45,508	219,458	7,320,796,948	54,740	292,096	8,151,716,317	<b>3.28</b>
<b>Aromatic</b>	12,383	124,642	5,791,117,070	12,942	160,448	7,395,277,047	14,734	180,841	7,163,976,384	<b>2.88</b>
<b>Summer flowers</b>	8,257	194,284	3,453,496,751	7,260	184,250	3,473,496,000	5,185	260,517	3,237,546,671	<b>1.30</b>
<b>Asian Veg</b>	1,510	16,311	738,234,406	1,673	12,853	629,643,613	1,745	14,040	650,301,293	<b>0.26</b>
<b>Medicinal</b>	460	3,492	128,330,500	739	3,563	81,782,241	727	3,483	81,795,991	<b>0.03</b>
<b>Total</b>	<b>387,310</b>	<b>5,778,936</b>	<b>181,379,326,955</b>	<b>402,796</b>	<b>6,217,285</b>	<b>207,529,071,425</b>	<b>417,367</b>	<b>6,696,384</b>	<b>248,478,319,992</b>	<b>100.00</b>

*Source: AFA-Horticulture Crops Directorate*

### **Horticultural Exports**

The total value of Horticultural produce exported in 2018 increased by Ksh38.358 Billion from 115.32 Billion to 153.68 representing 33.3 percent as compared to the value in 2017. Flowers exports increased from 82.24 Billion in 2017 to 113.165 in 2018 an increase of 30.9 Billion representing 37.6 percent rise. Fruits registered 42.4 percent increase from 9 Billion in 2017 to 12.81 Billion. During the period under review the vegetables increased from 24.06 Billion to 27.68 Billion accounting for 15 Percent increase. The marked increase in vegetables exports was attributed to compliance with the export market requirements by majority of exporters especially to the European Union. The high increase in the value of fruits was attributed to increased prices from new and traditional markets as well as acceptability of the fruits due to improved observance of proper harvesting time.

**Table 2 Fresh Horticultural Exports**

product	2016		2017		2018		% of total
	Volume	Value	Volume	Value	Volume	Value	
<b>Flowers</b>	133,658,334	70,829,466,905	159,961,194	82,248,862,888	161,227,150	113,165,186,323	<b>74</b>
<b>Fruits</b>	48,657,815	7,317,269,942	56,945,367	9,009,319,074	75,552,996	12,831,093,042	<b>8</b>
<b>Vegetables</b>	78,790,593	23,366,771,795	87,240,279	24,064,640,429	98,414,277	27,685,191,354	<b>18</b>
<b>Total</b>	261,106,742	101,513,508,642	304,146,840	115,322,822,391	335,194,422	153,681,470,719	<b>100</b>

*Source: AFA-Horticulture Crops Directorate*

## 2.2 Flower Exports 2016-2018

In 2018, floriculture contributed Ksh113.165 billion up from 82.248 in 2017. The volume increased from 159,961,194 tons in 2017 to 161,227,888 tons in 2018. Flowers exports accounted for 74 percent of total horticulture value. The leading flowers per value were roses, cuttings and mixed flowers accounting for 64.4, 14.7, 12.8 and 1.4 percent of flower exports.

**Table 3 Summary of Flowers export 2016-2018**

Flower Type	2016		2017		2018		% of total
	Volume	Value	Volume	Value	Volume	Value	
<b>Roses</b>	114,285,596	50,384,447,171	132,767,950	57,506,227,038	129,688,504	72,885,329,999	<b>64.4</b>
<b>Cuttings</b>	1,362,282	8,797,717,890	3,113,738	10,887,146,831	2,634,326	16,599,630,173	<b>14.7</b>
<b>Mixed Flowers</b>	5,487,176	2,850,841,279	9,846,092	6,340,022,717	14,167,462	14,489,864,245	<b>12.8</b>
<b>Carnation</b>	2,741,710	1,321,319,154	2,146,707	1,090,117,908	1,501,506	1,606,922,475	<b>1.4</b>
<b>Gypsophilla</b>	1,624,830	793,626,398	2,265,958	1,551,458,270	2,423,889	1,103,781,970	<b>1.0</b>
<b>Alstroemeria</b>	1,205,935	496,493,977	1,674,082	630,441,621	2,190,182	1,038,594,723	<b>0.9</b>
<b>Chrysanthemum</b>	250,120	560,612,019	702,199	107,916,488	525,095	994,641,383	<b>0.9</b>
<b>Hypericum</b>	1,792,984	705,354,785	1,970,048	933,880,990	2,215,107	889,362,493	<b>0.8</b>
<b>Pelargonium</b>	22,151	50,382,485	29,628	334,874,062	57,939	775,486,369	<b>0.7</b>

<b>Hydrangea</b>	398,913	199,139,017	427,721	274,372,991	399,426	596,945,279	<b>0.5</b>
<b>Statice</b>	1,015,230	2,545,315,319	719,525	696,822,222	897,240	400,229,393	<b>0.4</b>
<b>Veronica</b>	353,907	134,804,345	924,660	276,623,955	1,004,630	366,112,860	<b>0.3</b>
<b>Solidago</b>	736,624	405,494,583	796,050	335,323,196	791,487	232,550,138	<b>0.2</b>
<b>Delphinium</b>	26,392	15,281,484	239,911	112,018,384	316,781	184,033,435	<b>0.2</b>
<b>Calla Lillies</b>	272,128	214,464,762	579,058	270,902,916	395,985	181,871,157	<b>0.2</b>
<b>Eryngium</b>	223,304	111,023,898	248,206	162,104,547	328,870	169,849,099	<b>0.2</b>
<b>OTHERS</b>	1,859,052	1,243,148,339	1,509,661	738,608,752	1,688,722	649,981,132	<b>0.6</b>
<b>TOTAL</b>	<b>133,658,334</b>	<b>70,829,466,905</b>	<b>159,961,194</b>	<b>82,248,862,888</b>	<b>161,227,150</b>	<b>113,165,186,323</b>	<b>100.0</b>

### 2.2.1 Fruits Exports 2016-2018

During the period under review fruits contributed Ksh12.83 Billion by value of horticultural exports accounting for 8 percent of horticulture exports. Out of the total value of fruits value, Avocado contributed Ksh10.839 Billion accounting for 84.48 percent of fruits exports by value while mango export was Ksh1.6 Billion accounting for 12.57 percent of fruits exports.

**Table 4: Summary of fruits export 2016-2018**

Fruit Type	2016		2017		2018		% of total
	Volume	Value	Volume	Value	Volume	Value	
<b>Avocado</b>	38,701,698	5,415,855,214	46,647,630	7,263,421,418	64,477,082	10,839,367,033	<b>84.48</b>
<b>Mango</b>	9,020,933	1,420,018,795	9,306,896	1,427,842,382	9,659,925	1,612,454,056	<b>12.57</b>
<b>Passion</b>	529,367	167,610,375	524,270	157,694,455	595,959	179,989,749	<b>1.40</b>
<b>Raspberries</b>	296,151	274,241,083	188,587	140,720,450	264,196	153,960,221	<b>1.20</b>
<b>Pineapple</b>	27,288	3,932,982	202,485	11,376,180	494,759	29,887,183	<b>0.23</b>
<b>Custard</b>	25,556	5,342,162	13,392	1,529,557	30,712	6,327,252	<b>0.05</b>
<b>Strawberry</b>	1,175	218,049	48	19,600	1,929	3,371,615	<b>0.03</b>
<b>Apple</b>	2,674	578,544	6,776	1,207,937	14,671	2,997,600	<b>0.02</b>

<b>Pawpaw</b>	7,282	2,042,214	1,592	700,161	8,558	1,331,632	<b>0.01</b>
<b>Passion J</b>	410	179,130	390	126,504	3,305	747,773	<b>0.01</b>
<b>Lemon</b>	2,455	1,609,955	2,212	214,775	574	281,627	<b>0.00</b>
<b>Banana</b>	7,282	2,197,320	42,454	2,933,881	881	51,939	<b>0.00</b>
<b>Others</b>	36,719	23,609,162	8,635	1,531,774	446	325,362	<b>0.00</b>
<b>Total</b>	<b>48,658,990</b>	<b>7,317,434,985</b>	<b>56,945,367</b>	<b>9,009,319,074</b>	<b>75,552,996</b>	<b>12,831,093,042</b>	<b>100.0</b>

### 2.2.2 Vegetable exports

During the period under review vegetable exports increased from 87,240,279 tons in 2017 to 98,414,277 tons in 2018. The value also increased from Ksh24.064 billion to Ksh27.685 billion in 2018 that was 15 percent increase. Mixed vegetables, fine beans and processed beans were the leading products accounting for 45.8, 22.9 and 11.8 percent respectively of total value of vegetable exports. Most of the vegetables have shown a steady to upward growth in value with the exception of chilies and aubergines due infestation of pests especially the false codling moth.

**Table 5: Summary of vegetable exports 2016-2018**

Type of Vegetable	2016		2017		2018		% of Total
	Volume	Value	Volume	Value	Volume	Value	
<b>Mixed Vegetables</b>	29,533,334	10,543,733,171	30,545,851	11,758,610,439	31,010,079	12,670,136,843	<b>45.8</b>
<b>Fine Beans</b>	20,100,179	5,386,523,836	20,208,846	5,117,431,712	22,098,505	6,328,868,135	<b>22.9</b>
<b>Bean Processed</b>	20,463,614	4,277,472,739	26,964,246	2,883,807,927	29,299,814	3,272,807,303	<b>11.8</b>
<b>Basil</b>	214,552	96,436,210	445,408	211,229,114	987,924	1,735,367,721	<b>6.3</b>
<b>Herbs</b>	1,133,189	731,876,331	1,727,001	1,377,926,492	2,525,736	1,328,004,574	<b>4.8</b>
<b>Snow Peas</b>	2,666,583	827,285,127	2,332,652	1,150,056,268	2,154,385	813,483,030	<b>2.9</b>
<b>Snap Peas</b>	1,088,506	343,578,595	898,328	302,791,820	687,190	344,300,113	<b>1.2</b>
<b>Chilies</b>	902,672	434,655,696	1,388,462	374,617,575	1,056,623	279,932,412	<b>1.0</b>
<b>Aubergines</b>	1,357,063	394,019,334	1,176,129	287,962,343	1,176,377	269,743,906	<b>1.0</b>



Type of Vegetable	2016		2017		2018		% of Total
	Volume	Value	Volume	Value	Volume	Value	
Broccoli	467,548	234,833,125	672,025	272,603,743	574,602	238,922,230	0.9
Garden Peas	258,549	109,080,932	296,343	112,565,092	22,938	116,892,976	0.4
Chives	103,061	51,048,691	134,307	61,954,063	158,732	87,902,729	0.3
Baby Corn	60,126	23,558,438	35,229	15,601,039	61,684	38,666,645	0.1
Pepper	26,422	11,247,542	25,038	10,062,258	65,351	26,590,126	0.1
Others	882,173	135,650,383	390,414	127,420,544	6,534,338	133,572,611	0.5
<b>Total</b>	<b>79,257,571</b>	<b>23,601,000,150</b>	<b>87,240,279</b>	<b>24,064,640,429</b>	<b>98,414,277</b>	<b>27,685,191,354</b>	<b>100.0</b>

## 2.3 Overview Performance of Horticultural Crops

The total area under production in 2018 was **399,775ha** up from **383,407ha** achieved in 2017 while production was **6,283,699** tons compared to **5,885,682** tons that was produced in 2017. The value increased from **kshs122.108 Billion** to **132.383 Billion**. This was a 4.3 percent increase in area, 6.8 percent increase in production and 8.4 per cent increase in value from what was achieved in 2017.

**Table 6: Leading horticultural crops performance for 2017-2018**

Crop	Year 2017			Year 2018			% of Total Value
	Area (Ha)	Volume (MT )	Value(KES)	Area (Ha)	Volume (MT	Value ( KES)	
Banana	69,376	1,357,162	20,382,744,592	68,248	1,419,176	22,237,751,288	16.81
Tomatoes	27,053	507,275	17,379,279,182	28,263	574,458	19,903,552,256	15.04
Mango	50,550	705,195	11,713,206,615	48,541	746,377	12,846,113,214	9.71
Pineapple	10,263	359,467	9,058,677,980	10,757	369,931	9,902,687,834	7.48
Kales	30,687	491,815	7,976,519,848	35,034	600,766	9,583,285,962	7.24
Cabbage	26,807	713,360	8,604,558,042	22,892	620,523	7,646,157,500	5.78
Avocado	15,353	297,122	5,638,000,680	16,501	318,087	5,972,104,428	4.51
Bulb Onions	6,479	101,955	4,539,546,087	7,001	105,585	4,096,410,715	3.10

Crop	Year 2017			Year 2018			% of Total Value
	Area (Ha)	Volume (MT )	Value(KES)	Area (Ha)	Volume (MT	Value ( KES)	
Water melons	7,409	132,155	3,358,065,781	7,895	149,693	3,615,469,738	<b>2.73</b>
French beans	6,220	42,596	2,052,370,850	7,942	66,765	3,309,256,570	<b>2.50</b>
Pawpaw	9,507	105,432	2,753,707,748	9,105	109,436	3,020,420,535	<b>2.28</b>
Garden peas	22,178	88,917	3,291,242,474	22,840	88,685	2,992,671,573	<b>2.26</b>
Spinach	6,478	121,997	2,212,692,098	9,163	169,356	2,890,646,508	<b>2.18</b>
Cow peas	31,353	79,345	2,335,372,492	36,745	119,326	2,495,426,701	<b>1.89</b>
African night shade	4,634	48,643	1,817,129,275	6,849	68,828	2,378,251,829	<b>1.80</b>
Orange	7,661	77,437	2,223,314,560	8,332	93,321	2,360,678,031	<b>1.78</b>
Carrot	6,339	199,172	1,801,710,977	6,305	199,019	1,720,446,255	<b>1.30</b>
Snowpeas	2,590	18,399	1,403,230,874	2,866	22,786	1,672,493,373	<b>1.26</b>
Purple Passion	2,157	34,320	1,237,582,081	2,296	21,821	1,128,937,640	<b>0.85</b>
Spider plants	3,427	27,299	1,054,324,056	3,758	28,932	1,051,113,259	<b>0.79</b>
Leaf Amaranth	2,277	23,079	788,770,073	3,264	31,843	927,658,213	<b>0.70</b>
Guavas	6,814	92,670	956,555,199	6,191	82,125	879,683,781	<b>0.66</b>
Coriander	610	7,745	668,991,503	707	7,070	668,520,308	<b>0.51</b>
Spring Onions	2,530	20,319	508,497,192	3,448	35,340	618,017,755	<b>0.47</b>
Pumpkin fruit	1,293	21,993	568,311,788	1,380	24,267	569,098,694	<b>0.43</b>
Tamarillo	1,844	11,983	463,389,069	1,743	10,161	505,931,730	<b>0.38</b>
Okra	1,344	9,734	459,721,613	1,396	10,671	463,641,693	<b>0.35</b>
Rosemary	561	8,381	429,768,090	567	8,270	422,562,797	<b>0.32</b>
Yellow Passion	947	10,072	346,113,746	1,075	12,153	388,578,238	<b>0.29</b>
Asparagus	639	5,511	332,897,083	709	4,820	374,901,524	<b>0.28</b>
Bell pepper	1,105	7,414	328,678,975	1,167	7,894	372,752,337	<b>0.28</b>
Butternuts	949	18,929	432,957,308	920	18,787	362,496,450	<b>0.27</b>
Snap peas	538	4,657	254,496,500	626	4,328	339,686,124	<b>0.26</b>
Slender	521	6,789	294,698,000	767	7,092	302,511,741	<b>0.23</b>

Crop	Year 2017			Year 2018			% of Total Value
	Area (Ha)	Volume (MT )	Value(KES)	Area (Ha)	Volume (MT	Value ( KES)	
Garlic	241	2,712	249,975,000	282	3,113	279,539,575	<b>0.21</b>
Tangerines	1,441	13,906	325,861,030	1,134	11,807	259,266,701	<b>0.20</b>
Broccoli	428	4,378	217,554,455	509	4,886	251,710,000	<b>0.19</b>
Egg plant	1,151	12,607	301,381,793	900	9,059	251,337,642	<b>0.19</b>
Babycorn	1,392	10,194	167,135,002	1,287	15,095	244,309,103	<b>0.18</b>
Lemons	1,462	11,485	237,510,140	1,488	11,722	243,752,592	<b>0.18</b>
Long cayenne	504	5,476	194,569,332	558	6,568	219,583,800	<b>0.17</b>
Others	8,295	66,585	2,746,985,152	8,324	63,757	2,557,508,634	<b>1.93</b>
<b>Total</b>	<b>383,407</b>	<b>5,885,682</b>	<b>122,108,094,335</b>	<b>399,775</b>	<b>6,283,699</b>	<b>132,326,924,641</b>	<b>100.00</b>

NB: This is exclusive of Cut flowers that are valued at FOB prices

## 2.4 Review of Horticulture crops per category

### 2.4.1 Floriculture

In 2018, floriculture contributed Ksh113.165 billion up from 82.248 in 2017. The volume increased from 159,961,194 tons in 2017 to 161,227,888 tons in 2018. Flowers exports accounted for 74 percent of total horticulture value. The leading flowers per value were roses, cuttings and mixed flowers accounting for 64.4, 14.7, 12.8 and 1.4 percent of flower exports.

**Table 6 Summary of Flowers export 2016-2018**

Flower Type	2016		2017		2018		% of total
	Volume	Value	Volume	Value	Volume	Value	
Roses	114,285,596	50,384,447,171	132,767,950	57,506,227,038	129,688,504	72,885,329,999	<b>64.4</b>
Cuttings	1,362,282	8,797,717,890	3,113,738	10,887,146,831	2,634,326	16,599,630,173	<b>14.7</b>
Mixed Flowers	5,487,176	2,850,841,279	9,846,092	6,340,022,717	14,167,462	14,489,864,245	<b>12.8</b>

<b>Carnation</b>	2,741,710	1,321,319,154	2,146,707	1,090,117,908	1,501,506	1,606,922,475	<b>1.4</b>
<b>Gypsophilla</b>	1,624,830	793,626,398	2,265,958	1,551,458,270	2,423,889	1,103,781,970	<b>1.0</b>
<b>Alstroemeria</b>	1,205,935	496,493,977	1,674,082	630,441,621	2,190,182	1,038,594,723	<b>0.9</b>
<b>Chrysanthemum</b>	250,120	560,612,019	702,199	107,916,488	525,095	994,641,383	<b>0.9</b>
<b>Hypericum</b>	1,792,984	705,354,785	1,970,048	933,880,990	2,215,107	889,362,493	<b>0.8</b>
<b>Pelargonium</b>	22,151	50,382,485	29,628	334,874,062	57,939	775,486,369	<b>0.7</b>
<b>Hydrangea</b>	398,913	199,139,017	427,721	274,372,991	399,426	596,945,279	<b>0.5</b>
<b>Statice</b>	1,015,230	2,545,315,319	719,525	696,822,222	897,240	400,229,393	<b>0.4</b>
<b>Veronica</b>	353,907	134,804,345	924,660	276,623,955	1,004,630	366,112,860	<b>0.3</b>
<b>Solidago</b>	736,624	405,494,583	796,050	335,323,196	791,487	232,550,138	<b>0.2</b>
<b>Delphinium</b>	26,392	15,281,484	239,911	112,018,384	316,781	184,033,435	<b>0.2</b>
<b>Calla Lillies</b>	272,128	214,464,762	579,058	270,902,916	395,985	181,871,157	<b>0.2</b>
<b>Eryngium</b>	223,304	111,023,898	248,206	162,104,547	328,870	169,849,099	<b>0.2</b>
<b>OTHERS</b>	1,859,052	1,243,148,339	1,509,661	738,608,752	1,688,722	649,981,132	<b>0.6</b>
<b>TOTAL</b>	<b>133,658,334</b>	<b>70,829,466,905</b>	<b>159,961,194</b>	<b>82,248,862,888</b>	<b>161,227,150</b>	<b>113,165,186,323</b>	<b>100.0</b>

### 2.4.2 Exotic Vegetables

In 2018, Exotic vegetables contributed 21.78 percent to the domestic value of horticulture. The area, production and value were 141,427ha, 2.4 million tons and Ksh52.22 Billion respectively. The area increased from 134,466ha in 2017 to 141,427ha a 5.1 percent increase while production increased from 2.25 to 2.4million tons and the value rose from 47.07 billion to 52.22billion representing 7.2 and 11 percent increase respectively. The leading vegetables in production and value were tomatoes, Kales Cabbage and French beans accounting for 38.1, 18.4, 14.64 and 6.34 per cent of the total value of exotic vegetables, respectively. These are the most popular and widely consumed vegetables in the country accounting jointly for 77.44percent of all exotic vegetables.

**Table 7 Summary of Performance of Exotic Vegetables in 2016-2018**

Crop	2016			2017			2018			% Of total
	Area (Ha)	Volume (MT )	Value(KES)	Area (Ha)	Volume (MT	Value ( KES)	Area (Ha)	Volume (MT	Value ( KES)	
<b>Tomatoes</b>	18,077	360,677	12,922,022,714	27,053	507,275	17,379,279,182	28,263	574,458	19,903,552,256	<b>38.11</b>
<b>Kales</b>	30,892	445,489	7,178,552,411	30,687	491,815	7,976,519,848	35,034	600,766	9,583,285,962	<b>18.35</b>
<b>Cabbage</b>	25,926	733,817	9,483,019,065	26,807	713,360	8,604,558,042	22,892	620,523	7,646,157,500	<b>14.64</b>
<b>French beans</b>	5,671	34,779	1,382,209,471	6,220	42,596	2,052,370,850	7,942	66,765	3,309,256,570	<b>6.34</b>
<b>Garden peas</b>	20,415	82,155	2,191,492,833	22,178	88,917	3,291,242,474	22,840	88,685	2,992,671,573	<b>5.73</b>
<b>Spinach</b>	4,996	72,124	1,056,269,227	6,478	121,997	2,212,692,098	9,163	169,356	2,890,646,508	<b>5.54</b>
<b>Carrot</b>	6,422	112,014	1,941,955,201	6,339	199,172	1,801,710,977	6,305	199,019	1,720,446,255	<b>3.29</b>
<b>Snowpeas</b>	1,662	10,413	562,403,213	2,590	18,399	1,403,230,874	2,866	22,786	1,672,493,373	<b>3.20</b>
<b>Asparagus</b>	80	560	44,800,003	639	5,511	332,897,083	709	4,820	374,901,524	<b>0.72</b>
<b>Butternuts</b>	1,168	17,850	492,941,971	949	18,929	432,957,308	920	18,787	362,496,450	<b>0.69</b>
<b>Snap peas</b>	376	2,704	149,823,660	538	4,657	254,496,500	626	4,328	339,686,124	<b>0.65</b>
<b>Broccoli</b>	63	757	29,768,000	428	4,378	217,554,455	509	4,886	251,710,000	<b>0.48</b>
<b>Babycorn</b>	366	3,606	91,221,960	1,392	10,194	167,135,002	1,287	15,095	244,309,103	<b>0.46</b>
<b>Beetroots</b>	87	631	22,472,708	274	2,125	206,589,129	278	2,131	210,050,537	<b>0.40</b>
<b>Runner beans</b>	248	459	12,559,745	81	1,338	193,434,000	88	1,508	204,461,000	<b>0.38</b>
<b>Courgettes</b>	610	4,613	187,657,076	702	4,668	186,411,501	618	4,661	203,033,000	<b>0.38</b>
<b>Cucumber</b>	302	2,581	85,553,980	632	6,852	184,604,228	609	6,009	157,557,088	<b>0.30</b>
<b>Lettuce</b>	104	1,568	41,234,400	118	2,889	75,387,493	112	2,699	61,634,900	<b>0.12</b>
<b>Radish</b>	2	14	600,006	53	1,089	32,698,000	57	1,093	32,191,125	<b>0.06</b>
<b>Sweetcorn</b>	10	86	1,790,000	154	2,460	29,650,937	152	2,567	30,995,300	<b>0.06</b>
<b>Cauliflower</b>	62	945	29,272,500	69	1,029	33,146,400	73	1,032	25,676,000	<b>0.05</b>
<b>Turnips</b>	2	38	815,000	86	648	3,162,000	87	707	3,155,000	<b>0.01</b>
<b>Total</b>	<b>117,541</b>	<b>1,887,880</b>	<b>37,908,435,144</b>	<b>134,466</b>	<b>2,250,298</b>	<b>47,071,728,378</b>	<b>141,427</b>	<b>2,412,682</b>	<b>52,220,367,147</b>	<b>100.00</b>

*Source: AFA-Horticulture Crops Directorate*

### 2.4.3 Fruit Production

During the period under review, the area under fruit increased from 170,607 ha in 2016 to 186,928 ha in 2017, while production and value increased by 37,275tons and Kshs3.62billion representing 1.2 and 6.5 percent rise respectively compared to 2016. This was attributed to expanded area and also increase in irrigated area under fruits. In 2018, the area increased marginally by 0.8 percent while production and value rose by 149,045 tons and value increased by Kshs4.499billion representing 4.5 and 7.6 percent rise respectively from what was achieved in 2017. This was attributed to good rains and some young orchards starting production.

The major fruits grown in order of importance are; banana 34.85 percent, Mango 20.13 per cent, Pineapple 15.52 percent, avocado 9.90 percent, water melon 5.67 percent and Pawpaw 4.73 per cent.

**Table 8. Summary of Fruits production by Area, Volume and Value in 2016-2018**

COUNTY	2016			2017			2018			% Of total
	Area (Ha)	Volume (MT )	Value(KES)	Area (Ha)	Volume (MT	Value ( KES)	Area (Ha)	Volume (MT	Value ( KES)	
<b>Banana</b>	63,074	1,242,559	18,109,189,023	69,376	1,357,162	20,382,744,592	68,248	1,419,176	22,237,751,288	<b>34.85</b>
<b>Mango</b>	49,098	781,147	11,892,258,419	50,550	705,195	11,713,206,615	48,541	746,377	12,846,113,214	<b>20.13</b>
<b>Pineapple</b>	9,137	360,494	9,666,349,880	10,263	359,467	9,058,677,980	10,757	369,931	9,902,687,834	<b>15.52</b>
<b>Avocado</b>	13,806	254,387	4,783,859,016	15,353	297,122	5,638,000,680	16,501	318,087	5,972,104,428	<b>9.36</b>
<b>Melons</b>	7,956	173,697	4,000,498,015	7,409	132,155	3,358,065,781	7,895	149,693	3,615,469,738	<b>5.67</b>
<b>Pawpaw</b>	8,112	107,591	2,205,138,840	9,507	105,432	2,753,707,748	9,105	109,436	3,020,420,535	<b>4.73</b>
<b>Orange</b>	7,268	85,233	2,166,297,972	7,661	77,437	2,223,314,560	8,332	93,321	2,360,678,031	<b>3.70</b>
<b>Purple Passion</b>	3,825	31,571	1,399,002,305	2,157	34,320	1,237,582,081	2,296	21,821	1,128,937,640	<b>1.77</b>

<b>Guavas</b>	1,806	9,800	57,737,125	6,814	92,670	956,555,199	6,191	82,125	879,683,781	<b>1.38</b>
<b>Tamarillo</b>	873	7,434	341,770,685	1,844	11,983	463,389,069	1,743	10,161	505,931,730	<b>0.79</b>
<b>Yellow Passion</b>	930	98,050	235,224,580	947	10,072	346,113,746	1,075	12,153	388,578,238	<b>0.61</b>
<b>Tangerines</b>	1,122	10,172	228,616,668	1,441	13,906	325,861,030	1,134	11,807	259,266,701	<b>0.41</b>
<b>Lemons</b>	1,345	10,817	201,641,967	1,462	11,485	237,510,140	1,488	11,722	243,752,592	<b>0.38</b>
<b>Lime</b>	1,120	8,735	187,450,000	1,131	10,532	314,139,282	1,144	8,845	197,463,200	<b>0.31</b>
<b>Pepino Melon</b>	39	566	3,243,000	41	599	34,851,900	48	635	35,995,560	<b>0.06</b>
<b>Pears</b>	210	2,100	75,460,000	224	2,000	97,865,514	199	1,261	31,732,339	<b>0.05</b>
<b>Stawberries</b>	35	7	687,000	62	155	27,218,801	55	199	31,600,700	<b>0.05</b>
<b>Castard Apple</b>	147	581	13,909,917	138	1,281	29,212,777	144	1,363	30,385,341	<b>0.05</b>
<b>Loquats</b>	238	965	22,847,580	166	1,201	20,211,843	159	1,118	26,053,013	<b>0.04</b>
<b>Apple</b>	82	623	34,364,854	61	261	19,702,000	74	306	22,875,000	<b>0.04</b>
<b>Plums</b>	211	1,952	29,929,886	136	1,096	21,903,410	124	863	19,416,550	<b>0.03</b>
<b>Peaches</b>	45	310	22,430,500	43	309	21,080,250	40	240	18,851,403	<b>0.03</b>
<b>Grapes</b>	35	7	687,000	50	154	16,594,000	55	175	18,666,000	<b>0.03</b>
<b>White sapote</b>	39	155	4,354,554	54	222	5,155,313	78	411	7,421,010	<b>0.01</b>
<b>Thorn Melon</b>	54	225	4,320,500	36	238	4,820,000	71	272	5,594,000	<b>0.01</b>
<b>Total</b>	<b>170,607</b>	<b>3,189,178</b>	<b>55,687,269,286</b>	<b>186,928</b>	<b>3,226,453</b>	<b>59,307,484,311</b>	<b>185,499</b>	<b>3,371,498</b>	<b>63,807,429,866</b>	<b>100.0</b>

*Source: AFA-Horticulture Crops Directorate*

#### **2.4.4 Indigenous Vegetables (African Leafy Vegetables)**

The preference for the indigenous vegetable popularly known as African leafy vegetables (ALVs) has been on the increase because consumers' belief that these vegetables have no pesticide residue since very little inorganic fertilizer and pesticides are used during production.

In 2018, the area, volumes and values increased by 20, 31 and 10 percent respectively. In this category of vegetables, Cow peas contributed 29 percent followed by African Nightshade and spider plant that contributed 27 and 12 percent respectively.

Export of dried ALVs is on the increase due to increased demand by Kenyans in the diaspora particularly in United Kingdom and Germany.

**Table 9. Summary of Indigenous vegetables by Area, Volume and Value in 2017-2018**

Crops	2017			2018			% Of Total
	Area (Ha)	Volume (MT)	Value ( KES)	Area (Ha)	Volume (MT)	Value ( KES)	
<b>Cow peas</b>	31,353	79,345	2,335,372,492	36,745	119,326	2,495,426,701	<b>30.61</b>
<b>African night shade</b>	4,634	48,643	1,817,129,275	6,849	68,828	2,378,251,829	<b>29.17</b>
<b>Spider plants</b>	3,427	27,299	1,054,324,056	3,758	28,932	1,051,113,259	<b>12.89</b>
<b>Leaf Amaranth</b>	2,277	23,079	788,770,073	3,264	31,843	927,658,213	<b>11.38</b>
<b>Pumpkin fruit</b>	1,293	21,993	568,311,788	1,380	24,267	569,098,694	<b>6.98</b>
<b>Slender</b>	521	6,789	294,698,000	767	7,092	302,511,741	<b>3.71</b>
<b>Jute Mallow</b>	466	3,996	178,310,930	608	3,971	157,389,227	<b>1.93</b>
<b>Pumpkin leaves</b>	837	5,421	167,604,936	716	4,969	150,877,111	<b>1.85</b>
<b>Grain Amaranth</b>	376	974	70,425,400	314	903	68,096,067	<b>0.84</b>
<b>Vine Spinach</b>	229	1,687	42,576,000	250	1,708	47,264,377	<b>0.58</b>
<b>Malabor</b>	40	128	2,221,499	38	116	2,182,097	<b>0.03</b>
<b>Russian Comfrey</b>	56	105	1,052,500	51	143	1,847,000	<b>0.02</b>
<b>Total</b>	<b>45,508</b>	<b>219,458</b>	<b>7,320,796,948</b>	<b>54,740</b>	<b>292,096</b>	<b>8,151,716,317</b>	<b>100.00</b>

*Source: AFA-Horticulture Crops Directorate*



### 2.4.5 Aromatic Plants

Aromatic crops accounted for 2.9 percent of the total value of horticultural products. The area under production and volume increased in 2018 by 13.8 and 12.7 percent respectively compared to 2017. The value decreased by 3.1 percent from Ksh7.4billion in 2017 to Ksh7.16 in 2018. The leading crops in this category were bulb onions, coriander and spring onions accounting for 57.2, 9.3 and 8.6 percent respectively.

**Table 10. Summary of the performance of Aromatics for the years 2017-2018**

Crop	2017			2018			% Of total
	Area (Ha)	Volume (Tons)	Value (Kshs)	Area (Ha)	Volume (Tons)	Value (Kshs)	
<b>Bulb Onions</b>	6,479	101,955	4,539,546,087	7,001	105,585	4,096,410,715	<b>57.18</b>
<b>Coriander</b>	610	7,745	668,991,503	707	7,070	668,520,308	<b>9.33</b>
<b>Spring Onions</b>	2,530	20,319	508,497,192	3,448	35,340	618,017,755	<b>8.63</b>
<b>Rosemary</b>	561	8,381	429,768,090	567	8,270	422,562,797	<b>5.90</b>
<b>Bell pepper</b>	1,105	7,414	328,678,975	1,167	7,894	372,752,337	<b>5.20</b>
<b>Garlic</b>	241	2,712	249,975,000	282	3,113	279,539,575	<b>3.90</b>
<b>Long cayenne</b>	504	5,476	194,569,332	558	6,568	219,583,800	<b>3.07</b>
<b>ABE Chillies</b>	362	2,091	177,443,900	345	1,895	171,812,500	<b>2.40</b>
<b>Mint</b>	116	1,134	123,845,000	121	1,228	128,815,000	<b>1.80</b>
<b>Bullet Chillies</b>	204	1,509	90,253,735	191	1,926	112,577,800	<b>1.57</b>
<b>Chives</b>	125	1,230	58,111,356	245	1,473	46,695,060	<b>0.65</b>
<b>Leeks</b>	60	338	13,463,277	56	324	13,521,968	<b>0.19</b>
<b>Ginger</b>	24	84	8,772,000	24	93	9,672,000	<b>0.14</b>
<b>Celery</b>	3	17	1,695,850	4	18	1,757,950	<b>0.02</b>
<b>Parsley</b>	18	42	1,665,750	19	43	1,736,820	<b>0.02</b>
<b>Total</b>	<b>12,942</b>	<b>160,448</b>	<b>7,395,277,047</b>	<b>14,734</b>	<b>180,841</b>	<b>7,163,976,384</b>	<b>100.00</b>

### 2.4.6 Asian Vegetables

Asian vegetables accounted for 0.26% of the total value of horticultural products. The area under Asian vegetables production, volume and value increased with 4.3%, 9.2% and 3.3% respectively in 2018 compared to 2017. The leading Asian vegetable in 2018 was okra contributing to 71.3% of the total value.

**Table 11. Summary of the Performance of Asian Vegetables for the years 2017-2018**

Crop	2017			2018			% Of total
	Area (Ha)	Volume (Tons)	Value (Kshs)	Area (Ha)	Volume (Tons)	Value (Kshs)	
Okra	1,344	9,734	459,721,613	1,396	10,671	463,641,693	71.3
Karella	111	944	92,615,000	123	1,076	100,168,000	15.4
Dudhi	121	1,356	39,236,600	124	1,413	42,617,000	6.6
Tindori	40	515	24,580,000	45	573	29,125,000	4.5
Valore	46	179	10,420,400	46	182	11,675,600	1.8
Turia	11	125	3,070,000	11	125	3,074,000	0.5
<b>Total</b>	<b>1,673</b>	<b>12,853</b>	<b>629,643,613</b>	<b>1,745</b>	<b>14,040</b>	<b>650,301,293</b>	<b>100.0</b>

### 2.4.7 Medicinal Plants

During the period under review, medicinal plants showed a decrease in the area under production as well as the quantity produced from 738ha in 2017 to 727ha and 3,563 tons to 3,483 tons. This decrease is attributed low replanting. The crop value however increased from Ksh81.78 Million to Ksh81.79 Million due to increased farm gate prices. In view of the growing demand for medicinal crops interventions are required to facilitate farmers to increase supply.

**Table 12: Summary of Medicinal plants by Area, Volume and Value in 2017-2018**

Crop	2017			2018			% Of total
	Area (Ha)	Volume (Tons)	Value (Kshs)	Area (Ha)	Volume (Tons)	Value (Kshs)	
Tunguja	150	1,600	44,000,000	150	1,600	44,000,000	53.8

<b>Aloe</b>	76	282	9,525,027	77	291	9,810,000	<b>12.0</b>
<b>Palak</b>	15	135	7,661,500	13	124	7,651,500	<b>9.4</b>
<b>Stinging neetle</b>	390	1,280	7,045,742	376	1,226	7,582,955	<b>9.3</b>
<b>Stevia</b>	51	101	6,480,000	54	91	5,303,400	<b>6.5</b>
<b>Vanila</b>	26	83	4,288,000	24	79	4,188,000	<b>5.1</b>
<b>Moringa</b>	17	28	1,520,000	19	32	1,665,000	<b>2.0</b>
<b>Lemon Grass</b>	10	25	752,000	11	25	754,000	<b>0.9</b>
<b>Jatropha</b>	0	0	50,000	0	0	500,000	<b>0.6</b>
<b>Methi</b>	4	30	459,972	4	15	341,136	<b>0.4</b>
<b>Total</b>	<b>739</b>	<b>3,563</b>	<b>81,782,241</b>	<b>727</b>	<b>3,483</b>	<b>81,795,991</b>	<b>100.0</b>

### **3 CHAPTER TWO**

#### **3.1 EXOTIC VEGETABLES PERFORMANCE**

##### **Summary of Performance of exotic vegetables for the years 2016-2018**

In 2018, Exotic vegetables contributed 21.78 percent to the domestic value of horticulture. The area, production and value were 141,427ha, 2.4 million tons and Ksh52.22 Billion respectively. The area increased from 134,466ha in 2017 to 141,427ha a 5.1 percent increase while production increased from 2.25 to 2.4million tons and the value rose from 47.07 billion to 52.22billion representing 7.2 and 11 percent increase respectively. The leading vegetables in production and value were tomatoes, Kales Cabbage and French beans accounting for 38.1, 18.4, 14.64 and 6.34 per cent of the total value of exotic vegetables, respectively. These are the most popular and widely consumed vegetables in the country accounting jointly for 77.44percent of all exotic vegetables.

**Table 13: Summary of Performance of exotic vegetables for the years 2016-2018**

Crop	2016			2017			2018			% Of total
	Area (Ha)	Volume (MT )	Value(KES)	Area (Ha)	Volume (MT	Value ( KES)	Area (Ha)	Volume (MT	Value ( KES)	
<b>Tomatoes</b>	18,077	360,677	12,922,022,714	27,053	507,275	17,379,279,182	28,263	574,458	19,903,552,256	<b>38.11</b>
<b>Kales</b>	30,892	445,489	7,178,552,411	30,687	491,815	7,976,519,848	35,034	600,766	9,583,285,962	<b>18.35</b>
<b>Cabbage</b>	25,926	733,817	9,483,019,065	26,807	713,360	8,604,558,042	22,892	620,523	7,646,157,500	<b>14.64</b>
<b>French beans</b>	5,671	34,779	1,382,209,471	6,220	42,596	2,052,370,850	7,942	66,765	3,309,256,570	<b>6.34</b>
<b>Garden peas</b>	20,415	82,155	2,191,492,833	22,178	88,917	3,291,242,474	22,840	88,685	2,992,671,573	<b>5.73</b>
<b>Spinach</b>	4,996	72,124	1,056,269,227	6,478	121,997	2,212,692,098	9,163	169,356	2,890,646,508	<b>5.54</b>
<b>Carrot</b>	6,422	112,014	1,941,955,201	6,339	199,172	1,801,710,977	6,305	199,019	1,720,446,255	<b>3.29</b>
<b>Snowpeas</b>	1,662	10,413	562,403,213	2,590	18,399	1,403,230,874	2,866	22,786	1,672,493,373	<b>3.20</b>
<b>Asparagus</b>	80	560	44,800,003	639	5,511	332,897,083	709	4,820	374,901,524	<b>0.72</b>
<b>Butternuts</b>	1,168	17,850	492,941,971	949	18,929	432,957,308	920	18,787	362,496,450	<b>0.69</b>
<b>Snap peas</b>	376	2,704	149,823,660	538	4,657	254,496,500	626	4,328	339,686,124	<b>0.65</b>
<b>Broccoli</b>	63	757	29,768,000	428	4,378	217,554,455	509	4,886	251,710,000	<b>0.48</b>
<b>Babycorn</b>	366	3,606	91,221,960	1,392	10,194	167,135,002	1,287	15,095	244,309,103	<b>0.46</b>
<b>Beetroots</b>	87	631	22,472,708	274	2,125	206,589,129	278	2,131	210,050,537	<b>0.40</b>
<b>Runner beans</b>	248	459	12,559,745	81	1,338	193,434,000	88	1,508	204,461,000	<b>0.38</b>
<b>Courgettes</b>	610	4,613	187,657,076	702	4,668	186,411,501	618	4,661	203,033,000	<b>0.38</b>
<b>Cucumber</b>	302	2,581	85,553,980	632	6,852	184,604,228	609	6,009	157,557,088	<b>0.30</b>
<b>Lettuce</b>	104	1,568	41,234,400	118	2,889	75,387,493	112	2,699	61,634,900	<b>0.12</b>
<b>Radish</b>	2	14	600,006	53	1,089	32,698,000	57	1,093	32,191,125	<b>0.06</b>
<b>Sweetcorn</b>	10	86	1,790,000	154	2,460	29,650,937	152	2,567	30,995,300	<b>0.06</b>
<b>Cauliflower</b>	62	945	29,272,500	69	1,029	33,146,400	73	1,032	25,676,000	<b>0.05</b>
<b>Turnips</b>	2	38	815,000	86	648	3,162,000	87	707	3,155,000	<b>0.01</b>
<b>Total</b>	<b>117,541</b>	<b>1,887,880</b>	<b>37,908,435,144</b>	<b>134,466</b>	<b>2,250,298</b>	<b>47,071,728,378</b>	<b>141,427</b>	<b>2,412,682</b>	<b>52,220,367,147</b>	<b>100.00</b>

*Source: AFA-Horticulture Crops Directorate*

### 3.1.1 Tomatoes (*Lycopersicon esculentum*)

During the period under review, tomato was the leading vegetable accounting for 37.63 of all the exotic vegetable. The value of tomatoes increased from 17.38billion in 2017 and to 19.90 billion in 2018 representing 14.5 percent increase. The area under production has been under steady increase in the non-traditional counties of Kajiado, Machakos and Narok with the Known leading county of Kirinyaga showing a downward trend in area, production and value. The decrease in production in Kirinyaga is attributed to a buildup pests and diseases as well as diversification to other enterprises. During the period under review, the area increased from 27,053ha to 28,263 a 4.5percent increase while production increased from 507,275tons to 574,458tons a 13.2percent increase. There was an increase in the area under tomato production, volume and value in 2018 was attributed to enhanced irrigation and growing of hybrid varieties that are high yielding and tolerant to pest and diseases. Pests and diseases remain major challenges in tomato production especially in the central Kenya counties.

**Table 14: Performance of Tomatoes in selected Counties in 2017-2018**

COUNTY	2017			2018			% Of Total
	Area (Ha)	Volume (MT	Value ( KES)	Area (Ha)	Volume (MT	Value ( KES)	
Kajiado	2,452	54,827	1,914,835,250	3,024	71,250	2,379,680,250	12.0
Kirinyaga	3,219	60,490	2,247,500,000	2,460	60,587	2,037,800,000	10.2
Narok	2,277	54,220	1,700,200,000	2,420	54,082	1,886,227,500	9.5
Machakos	2,453	39,255	1,029,775,000	4,075	56,225	1,328,475,000	6.7
Kiambu	544	7,099	270,033,750	769	24,499	1,249,126,000	6.3
Taita Taveta	726	22,990	904,500,000	783	28,610	1,238,650,000	6.2

<b>Makueni</b>	575	22,250	893,600,000	931	27,675	941,600,000	<b>4.7</b>
<b>Homabay</b>	1,143	8,490	482,811,240	1,541	12,104	743,706,000	<b>3.7</b>
<b>Lamu</b>	275	10,700	242,508,000	491	16,242	693,153,000	<b>3.5</b>
<b>Kisumu</b>	663	16,341	542,320,000	536	19,030	592,650,000	<b>3.0</b>
<b>Trans Nzoia</b>	672	19,804	613,560,000	441	14,633	518,266,000	<b>2.6</b>
<b>Kitui</b>	311	6,743	245,790,000	735	13,588	459,685,000	<b>2.3</b>
<b>Murang'a</b>	1,258	8,888	417,409,550	1,315	9,250	448,946,300	<b>2.3</b>
<b>Bungoma</b>	538	10,041	456,710,000	564	11,129	442,570,000	<b>2.2</b>
<b>Siaya</b>	741	10,674	442,675,000	628	9,523	431,532,500	<b>2.2</b>
<b>Laikipia</b>	578	19,670	674,420,300	321	10,999	376,500,000	<b>1.9</b>
<b>Bomet</b>	545	7,535	236,650,000	550	9,849	320,578,000	<b>1.6</b>
<b>Kwale</b>	448	6,989	320,023,000	420	6,966	319,660,000	<b>1.6</b>
<b>Meru</b>	549	12,386	485,356,018	498	9,702	316,985,000	<b>1.6</b>
<b>Nyeri</b>	273	6,670	239,619,940	356	11,348	299,950,768	<b>1.5</b>
<b>Others</b>	6,812	101,214	3,018,982,134	5,405	97,167	2,877,810,938	<b>14.5</b>
<b>Total</b>	<b>27,053</b>	<b>507,275</b>	<b>17,379,279,182</b>	<b>28,263</b>	<b>574,458</b>	<b>19,903,552,256</b>	<b>100.0</b>

*Source: AFA-Horticulture Crops Directorate*

### **3.1.2 Cabbage (*Brassica oleracea var. capitata*)**

Cabbage is mainly grown for the domestic market. The area decreased from 26,807 ha in 2017 to 22,892 ha in 2018, a 14.6 % drop, while the volume decreased from 713,360 tons to 620,523tons, a 13% drop in the same period. Value dropped from 8.60 billion in 2017 to 7.64 billion in 2018, representing 11% percent drop in value. This drop was attributed to above

normal rains in the main producing areas which affected production. The leading counties were Nyandarua, Nyeri, Narok and Meru accounting for 16.9, 12.8, 11.0 and 10.3 per cent of the country's total value respectively. Despite Nyandarua having high production, farm gate prices remained low compared to other counties due to poor road infrastructure and being surrounded by counties producing the same product.

**Table 15: Performance of cabbages in selected counties for the years 2016-2018**

	2017			2018			% Of total
	Area (Ha)	Volume (MT)	Value ( KES)	Area (Ha)	Volume (MT)	Value ( KES)	
<b>Nyandarua</b>	8,340	232,725	1,779,735,792	6,297	171,070	1,288,390,000	<b>16.9</b>
<b>Nyeri</b>	2,292	55,928	813,014,000	2,000	70,549	976,553,480	<b>12.8</b>
<b>Narok</b>	1,636	39,413	543,066,700	1,810	74,127	842,670,000	<b>11.0</b>
<b>Meru</b>	2,589	107,231	2,112,732,120	2,205	53,646	786,372,000	<b>10.3</b>
<b>Nakuru</b>	2,096	63,342	577,228,302	1,635	54,944	583,952,006	<b>7.6</b>
<b>Kiambu</b>	1,942	41,874	379,655,000	1,870	33,253	575,042,000	<b>7.5</b>
<b>Elgeyo Marakwet</b>	959	31,798	608,045,018	947	25,402	529,326,269	<b>6.9</b>
<b>Bomet</b>	668	34,383	394,260,000	679	27,010	279,260,000	<b>3.7</b>
<b>Makueni</b>	201	3,794	113,220,000	416	7,833	245,637,500	<b>3.2</b>
<b>Trans Nzoia</b>	560	11,807	215,614,800	339	7,430	152,011,428	<b>2.0</b>
<b>Taita Taveta</b>	87	4,131	116,700,000	105	5,169	145,530,000	<b>1.9</b>
<b>Bungoma</b>	1,033	26,222	591,722,500	473	11,565	139,125,000	<b>1.8</b>
<b>Kirinyaga</b>	174	7,502	86,010,000	204	9,920	117,100,000	<b>1.5</b>
<b>Murang'a</b>	384	6,415	116,970,000	434	5,731	114,887,150	<b>1.5</b>
<b>Nandi</b>	299	9,245	116,096,800	176	6,889	103,290,000	<b>1.4</b>
<b>Laikipia</b>	221	5,504	82,891,000	206	4,827	93,940,000	<b>1.2</b>
<b>Kisii</b>	974	38,833	582,100,000	287	5,772	80,335,467	<b>1.1</b>
<b>Nyamira</b>	311	6,993	58,030,000	315	7,167	76,870,000	<b>1.0</b>

<b>Machakos</b>	311	3,081	64,208,000	347	3,479	70,168,000	<b>0.9</b>
<b>West Pokot</b>	171	5,681	60,428,000	194	5,970	59,000,000	<b>0.8</b>
<b>Others</b>	2,145	30,643	448,290,841	1,956	28,772	386,697,200	<b>5.1</b>
<b>Total</b>	<b>26,807</b>	<b>713,360</b>	<b>8,604,558,042</b>	<b>22,892</b>	<b>620,523</b>	<b>7,646,157,500</b>	<b>100.0</b>

*Source: AFA-Horticulture Crops Directorate*

### **3.1.3 Kales (*Brassica oleracea*)**

Kales or “Sukuma wiki” as commonly referred to is produced for the domestic market. It is the most popular highly consumed leafy vegetable in the country, grown in all the 47 counties. In 2018, the area under kales production and volume produced increased from 30,687ha to 35,034ha and from 491,815tons to 600,766tons a 14percent and 22percent rise respectively compared to 2017. The value increased from 7.976billion to Kshs9.583billion representing 20percent increase compared to the previous year. The increase was attributed to improved rains in all parts of the country that favored its production and availability of water for irrigation. During the year under review, kales accounted for 18.12percent of all the exotic vegetables by value.

**Table 16: Performance of Kales in selected Counties in 2017-2018**

COUNTY	2017			2018			% Of Total
	Area (Ha)	Volume (MT)	Value ( KES)	Area (Ha)	Volume (MT)	Value ( KES)	
<b>Narok</b>	1,835	21,027	394,819,300	2,089	75,780	1,491,960,000	<b>15.6</b>
<b>Kiambu</b>	3,325	93,037	1,187,629,000	3,776	111,531	1,112,061,714	<b>11.6</b>
<b>Machakos</b>	1,614	16,184	262,380,000	4,276	47,079	796,680,000	<b>8.3</b>
<b>Homabay</b>	806	8,426	225,645,000	2,881	27,139	697,931,800	<b>7.3</b>



<b>Nyamira</b>	1,097	31,520	446,780,000	1,075	38,650	642,050,000	<b>6.7</b>
<b>Bomet</b>	973	35,127	416,220,000	987	23,634	357,650,000	<b>3.7</b>
<b>Kisii</b>	1,801	27,807	467,174,250	1,720	24,339	333,849,685	<b>3.5</b>
<b>Bungoma</b>	784	10,060	228,300,000	801	16,935	287,570,002	<b>3.0</b>
<b>Meru</b>	1,158	19,487	327,017,200	711	13,271	267,518,000	<b>2.8</b>
<b>Makueni</b>	571	9,541	201,200,000	723	12,645	245,550,000	<b>2.6</b>
<b>Siaya</b>	1,803	15,328	585,662,200	1,132	11,619	231,994,000	<b>2.4</b>
<b>Kakamega</b>	1,060	9,322	181,390,000	2,270	9,257	227,617,000	<b>2.4</b>
<b>Kisumu</b>	1,141	19,020	300,610,000	902	15,685	199,060,000	<b>2.1</b>
<b>Kitui</b>	408	7,015	124,850,000	610	5,811	183,912,500	<b>1.9</b>
<b>Nakuru</b>	1,973	21,937	270,310,036	1,157	24,483	182,545,608	<b>1.9</b>
<b>Kericho</b>	287	11,720	197,930,000	349	10,954	173,987,000	<b>1.8</b>
<b>Taita Taveta</b>	293	7,079	158,037,250	210	6,218	165,120,000	<b>1.7</b>
<b>Trans Nzoia</b>	805	19,014	282,118,001	458	14,501	160,689,888	<b>1.7</b>
<b>Nyandarua</b>	980	17,470	110,090,000	940	18,480	151,200,000	<b>1.6</b>
<b>E Marakwet</b>	917	13,121	177,250,000	747	10,325	140,834,835	<b>1.5</b>
<b>Others</b>	6,260	68,736	1,583,621,525	7,221	82,430	1,533,503,930	<b>16.0</b>
<b>Total</b>	<b>30,687</b>	<b>491,815</b>	<b>7,976,519,848</b>	<b>35,034</b>	<b>600,766</b>	<b>9,583,285,962</b>	<b>100.0</b>

*Source: AFA-Horticulture Crops Directorate*

### **3.1.4 Garden peas (*Pisum sativum*)**

Garden pea is largely grown for the domestic market with some being exported in mixed pre-packs. The area increased by 2% from 22,107ha in 2017 to 22,537ha in 2018 while production declined by 2% from 88,465 tons to 86,558 tons. There was a 10 percent decrease in value from 3.28 to 2.96 billion. The major producing counties were Nyandarua, Nakuru, Meru and Narok. The production and value decline was attributed by the heavy rainfall in most of the major growing counties causing moulds and rotting of the pods. Major challenges in garden pea production are powdery mildew, black spot and African boll worm.

**Table 17: Performance of Garden peas in selected counties for the years 2017-2018**

COUNTY	2017			2018			% Of total
	Area (Ha)	Volume (Tons)	Value (Kshs)	Area (Ha)	Volume (Tons)	Value (Kshs)	
<b>Nyandarua</b>	13,865	52,360	1,839,600,000	13,155	50,149	1,506,132,000	<b>50.9</b>
<b>Nakuru</b>	5,913	20,966	646,930,000	5,452	20,058	629,635,001	<b>21.3</b>
<b>Meru</b>	649	5,987	328,863,600	2,177	5,401	330,060,000	<b>11.2</b>
<b>Narok</b>	541	1,812	80,280,000	599	3,308	129,640,000	<b>4.4</b>
<b>Kiambu</b>	535	2,523	147,947,143	533	2,641	126,966,440	<b>4.3</b>
<b>Nyeri</b>	120	797	36,259,000	117	784	38,934,324	<b>1.3</b>
<b>Baringo</b>	70	540	31,804,286	79	614	34,764,286	<b>1.2</b>
<b>Taita Taveta</b>	22	525	34,120,000	22	522	34,090,000	<b>1.2</b>
<b>Elgeyo Marakwet</b>	105	860	60,538,593	86	656	30,844,362	<b>1.0</b>
<b>Uasin Gishu</b>	60	514	27,630,000	72	653	26,758,000	<b>0.9</b>
<b>Trans Nzoia</b>	51	207	6,747,800	73	362	14,440,000	<b>0.5</b>
<b>Laikipia</b>	49	420	11,300,000	28	336	13,600,000	<b>0.5</b>
<b>Bungoma</b>	20	300	6,000,000	25	375	9,750,000	<b>0.3</b>
<b>Others</b>	108	653	25,987,651	120	701	32,659,660	<b>1.1</b>
<b>Total</b>	<b>22,107</b>	<b>88,465</b>	<b>3,284,008,073</b>	<b>22,537</b>	<b>86,558</b>	<b>2,958,274,073</b>	<b>100.0</b>

### 3.1.5 Carrots (*Daucus carota*)

Carrots are mainly produced for domestic and Uganda market although there is a small volume that is exported to Europe in mixed vegetable pre-packs. There was a slight decrease in the area and production under carrot 0.5% and 0.2% respectively. Value declined from 1.8 million to 1.7 million, which is 4% decrease.

**Table 18: Performance of Carrots in selected counties for the years 2017-2018**

COUNTY	2017			2018			% Of total
	Area (Ha)	Volume (Tons)	Value (Kshs)	Area (Ha)	Volume (Tons)	Value (Kshs)	
Kiambu	871	12,300	287,166,000	940	14,474	360,385,000	21.0
Meru	1,143	9,562	294,740,000	1,031	8,742	261,311,000	15.2
Nyeri	499	9,178	212,226,674	499	9,178	212,226,674	12.4
Nakuru	1,207	13,980	188,757,000	1,165	13,498	160,472,006	9.3
Narok	286	1,976	44,650,000	296	2,795	85,037,500	5.0
Homabay	86	860	25,800,000	86	860	27,100,000	1.6
Baringo	86	597	26,480,000	78	520	21,400,000	1.2
Bungoma	53	1,184	13,075,000	68	1,616	20,418,000	1.2
Kisii	65	766	17,897,896	72	1,028	18,216,192	1.1
Bomet	68	900	18,750,000	73	800	16,570,000	1.0
Trans Nzoia	27	315	7,260,000	50	502	15,472,000	0.9
Others	295	3,878	80,578,407	370	4,595	80,629,883	4.7
<b>Total</b>	<b>6,339</b>	<b>99,272</b>	<b>1,795,710,977</b>	<b>6,305</b>	<b>99,119</b>	<b>1,717,446,255</b>	<b>100.0</b>

### 2.1.6 French Beans

French beans are grown mainly for the export market where they are sold as fresh or canned. The area under French beans production was 7,942 Ha in 2018 compared to 6,220 Ha in 2017 Ha which is a 28 percent increase. There was also a 57% increase on production in 2018 at 66,765 Tons compared to 42,596 Tons in 2017. The value increased by 61 percent from Kshs2.05 billion in 2017 to 3.3 billion in 2018. The leading counties in terms of value in 2017 were Machakos, Kirinyaga, Kajiado, Murang'a and Nakuru that accounted for 33.1, 23.4, 9.8, 5.9 and 5.4 percent respectively. Despite this good performance, Production and marketing of French beans in Kenya has continually faced the challenge of pests and diseases increasing the cost of production. Additionally, exceedance of pesticides residues has resulted to high rejection or interception in the export market. Some of the important pests that affect production of beans are white flies, mites and aphids and the main diseases include bean rust and bean spot.

**Table 19: French beans (*Phaseolus sp.*) French Beans 2017-2018**

COUNTY	2017			2018			% Of total
	Area (Ha)	Volume (Tons)	Value (Kshs)	Area (Ha)	Volume (Tons)	Value (Kshs)	
Machakos	1,029	9,890	584,900,000	2,003	22,274	1,095,280,000	33.1
Kirinyaga	2,723	12,915	581,020,000	2,025	14,811	773,645,000	23.4
Kajiado	70	686	27,850,500	346	5,740	324,500,000	9.8
Murang'a	784	3,785	185,469,050	811	3,915	193,866,825	5.9
Nakuru	247	1,399	69,450,000	1,054	3,491	178,420,013	5.4
Meru	479	4,495	182,944,000	497	4,706	131,940,000	4.0
Laikipia	40	635	23,800,000	117	2,047	122,820,000	3.7
Nyeri	133	1,905	122,675,848	135	1,901	122,512,732	3.7
Makueni	30	600	30,000,000	121	2,133	110,625,000	3.3
Narok	311	2,605	104,250,000	186	1,485	96,250,000	2.9
Kiambu	100	836	33,600,000	204	1,384	50,700,000	1.5
Taita Taveta	80	1,496	42,896,300	70	1,354	44,167,000	1.3
Embu	53	351	15,870,000	46	325	15,300,000	0.5
Trans Nzoia	61	276	14,000,000	55	271	13,550,000	0.4
Nandi	20	284	10,600,000	30	374	11,660,000	0.4
Baringo	7	70	3,500,000	19	148	7,400,000	0.2
Others	54	369	19,545,152	226	408	16,620,000	0.5
<b>Total</b>	<b>6,220</b>	<b>42,596</b>	<b>2,052,370,850</b>	<b>7,942</b>	<b>66,765</b>	<b>3,309,256,570</b>	<b>100.0</b>

### 3.1.6 Spinach (*Spinacia oleracea*)

Spinach is an important vegetable especially among people living in cities and urban areas. During the period under review the area under spinach production increased by 44 percent, volume increased up by 42 percent while the values grew by 35 percent. This general increase was attributed to high demand for the spinach by urban and peri-urban. Kiambu, Nakuru and Machakos were the leading counties accounting for

23.5, 18 and 14 percent of the country's total value in 2018. Although Spinach farming is on the increase, it is highly susceptible to rust and low shelf life as compared to the other leafy vegetables.

**Table 20: Performance of Spinach in selected counties for the years 2017-2018**

COUNTY	2017			2018			% Of total
	Area (Ha)	Volume (Tons)	Value (Kshs)	Area (Ha)	Volume (Tons)	Value (Kshs)	
Kiambu	767	16,778	359,956,000	1,501	35,748	692,455,000	23.5
Narok	746	39,843	415,180,000	935	50,733	530,805,000	18.0
Machakos	568	6,376	152,950,000	2,361	20,116	414,003,600	14.0
Meru	288	4,196	91,332,012	376	5,939	135,971,000	4.6
Kajiado	361	5,287	93,282,150	193	4,825	127,675,000	4.3
Nakuru	504	7,830	245,219,999	549	9,090	125,708,001	4.3
Kwale	113	1,210	111,420,000	222	1,510	114,200,000	3.9
Makueni	262	2,112	42,700,000	300	4,365	96,800,000	3.3
Taita Taveta	118	4,360	76,216,500	79	3,434	81,610,000	2.8
Nyandarua	826	10,663	111,482,000	280	5,174	78,450,000	2.7
Laikipia	134	3,755	56,755,222	132	3,500	56,150,000	1.9
Embu	65	2,600	63,000,000	62	2,150	56,000,000	1.9
Nyeri	34	391	5,626,167	234	4,945	55,749,106	1.9
Kitui	240	1,912	53,310,000	242	1,902	54,240,000	1.8
Murang'a	351	1,857	39,394,033	367	1,671	34,456,049	1.2
Kisumu	53	2,218	33,740,000	61	4,080	33,400,000	1.1
Nairobi	64	569	18,847,500	48	410	26,060,833	0.9
Elgeyo Marakwet	128	1,460	24,471,465	138	1,891	25,980,890	0.9
Kirinyaga	188	1,954	31,300,000	176	2,022	25,427,000	0.9
Others	673	6,640	164,227,050	1,070	9,217	182,605,029	6.2
<b>Total</b>	<b>6,483</b>	<b>122,011</b>	<b>2,190,410,098</b>	<b>9,325</b>	<b>172,721</b>	<b>2,947,746,508</b>	<b>100.0</b>

### 3.1.7 Snow peas (*Pisum sativum* var. *saccharatum*)

Snow peas are mainly grown for the export market with only a small percentage being consumed locally. The value of snow peas produced in 2018 increased by 19 percent from Ksh 1.4 Billion in 2017 to Ksh 1.67 Billion in 2018. The major producing counties were Nyandarua, Meru and Nyeri which accounted for 47.56%, 40.91% and 6.19% respectively of the total value in 2018. The main challenges in snow peas production are Powdery mildew disease and leaf miner pest.

**Table 21: Performance of Snow Peas in selected counties for the years 2017-2018**

COUNTY	2017			2018			% Of total
	Area (Ha)	Volume (Tons)	Value (Kshs)	Area (Ha)	Volume (Tons)	Value (Kshs)	
Nyandarua	1,035	7,135	551,800,000	1,386	12,112	795,417,500	47.56
Meru	1,233	8,113	628,940,000	1,189	8,033	684,140,977	40.91
Nyeri	129	1,159	103,876,873	126	1,157	103,500,771	6.19
Laikipia	33	924	64,680,000	30	516	40,474,000	2.42
Narok	55	275	16,500,000	56	285	16,700,000	1.00
Taita Taveta	14	260	10,880,000	14	266	11,000,000	0.66
Trans Nzoia	55	230	11,224,000	33	150	7,700,000	0.46
Nakuru	11	74	4,000,001	7	66	4,500,000	0.27
Elgeyo Marakwet	6	58	2,900,000	6	59	3,100,000	0.19
Kajiado	11	58	3,100,000	12	60	3,050,125	0.18
Bungoma	4	60	3,600,000	2	30	1,200,000	0.07
Murang'a	3	13	930,000	3	12	910,000	0.05
Makueni	2	40	800,000	2	40	800,000	0.05
Total	2,590	18,399	1,403,230,874	2,866	22,786	1,672,493,373	100.00

### 3.1.8 Butter nut (*Curcubita moschata*)

Butter nut is grown for both domestic and export markets. It is a potential food security crop due its long shelf life. The area under production reduced by 3% from 949 Ha in 2017 to 920 Ha in 2018. The value also decreased by 16% in 2018. This reduction is attributed to excess rainfall that resulted to high disease incidences as well as consumers' preference of pumpkins to butter nuts. The major production counties are Kirinyaga, Meru, Machakos, Homabay and Murang'a. The major challenges in butter nut production are melon fly and powdery mildew.

**Table 22: Performance of Butter nut in selected counties for the years 2017-2018**

COUNTY	2017			2018			% Of total
	Area (Ha)	Volume (Tons)	Value (Kshs)	Area (Ha)	Volume (Tons)	Value (Kshs)	
<b>Kirinyaga</b>	166	7,252	73,551,500	167	7,894	84,050,000	<b>23.2</b>
<b>Meru</b>	92	1,939	43,840,800	100	2,116	51,971,200	<b>14.3</b>
<b>Machakos</b>	107	1,028	50,500,000	91	906	45,180,000	<b>12.5</b>
<b>Homabay</b>	168	3,244	74,920,000	147	2,854	44,300,000	<b>12.2</b>
<b>Murang'a</b>	67	475	17,359,400	73	529	19,022,100	<b>5.2</b>
<b>Siaya</b>	33	696	39,840,000	12	300	18,000,000	<b>5.0</b>
<b>Embu</b>	45	525	12,250,000	54	608	12,975,000	<b>3.6</b>
<b>Tharaka Nithi</b>	32	364	12,740,000	47	400	12,641,200	<b>3.5</b>
<b>Baringo</b>	48	252	9,060,000	48	278	10,538,000	<b>2.9</b>
<b>Nakuru</b>	50	841	33,902,000	29	528	10,280,000	<b>2.8</b>
<b>Bomet</b>	35	700	7,000,000	32	640	7,680,000	<b>2.1</b>
<b>Elgeyo Marakwet</b>	17	497	23,553,308	12	316	6,771,600	<b>1.9</b>
<b>Trans Nzoia</b>	11	140	5,200,000	13	220	6,600,000	<b>1.8</b>
<b>Narok</b>	7	120	6,000,000	7	124	6,050,000	<b>1.7</b>
<b>Laikipia</b>	8	152	4,500,000	8	152	4,500,000	<b>1.2</b>
<b>Kwale</b>	13	130	5,200,000	7	105	4,200,000	<b>1.2</b>

<b>Bungoma</b>	15	176	3,535,000	18	118	3,359,000	<b>0.9</b>
<b>Kiambu</b>	4	19	1,312,500	6	47	3,222,400	<b>0.9</b>
<b>Migori</b>	2	44	1,569,000	13	281	2,469,150	<b>0.7</b>
<b>Others</b>	31	337	7,123,800	38	371	8,686,800	<b>2.4</b>
<b>Total</b>	<b>949</b>	<b>18,929</b>	<b>432,957,308</b>	<b>920</b>	<b>18,787</b>	<b>362,496,450</b>	<b>100.0</b>

### 3.1.9 Courgettes (*Cucurbita pepo*)

The area under Courgettes production decreased from 702 Ha in 2017 to 618 Ha in 2018 due to heavy rains that compromised production. The value however increased from 186.4 million in 2017 to 203.0 million in 2018, representing a 9 % increase due to increase farm gate prices. The major producing Counties are Kiambu, Meru, Nakuru, Murang'a, Taveta Taveta and Kirinyaga representing 93.7% of the country's total value.

**Table 23: Performance of Courgettes in selected counties for the years 2017-2018**

COUNTY	2017			2018			% Of total
	Area (Ha)	Volume (Tons)	Value (Kshs)	Area (Ha)	Volume (Tons)	Value (Kshs)	
<b>Kiambu</b>	253	1,777	90,168,400	218	1,402	73,163,600	<b>36.0</b>
<b>Meru</b>	129	655	23,257,216	139	1,175	50,505,000	<b>24.9</b>
<b>Nakuru</b>	76	471	22,060,000	70	441	23,050,000	<b>11.4</b>
<b>Murang'a</b>	110	619	20,582,010	118	649	21,633,015	<b>10.7</b>
<b>Taita Taveta</b>	27	512	12,824,000	27	513	12,825,000	<b>6.3</b>
<b>Kirinyaga</b>	19	170	3,918,000	16	180	9,000,000	<b>4.4</b>
<b>Kajiado</b>	60	250	4,600,250	6	110	4,000,000	<b>2.0</b>
<b>Machakos</b>	11	94	4,140,000	9	70	3,216,000	<b>1.6</b>
<b>Laikipia</b>	8	52	1,805,100	7	60	3,000,000	<b>1.5</b>
<b>Nairobi</b>	4	47	2,313,397	4	40	2,041,067	<b>1.0</b>
<b>Nyeri</b>	4	16	363,128	5	17	349,318	<b>0.2</b>
<b>Bungoma</b>	3	6	380,000	1	4	250,000	<b>0.1</b>



<b>Total</b>	<b>702</b>	<b>4,668</b>	<b>186,411,501</b>	<b>618</b>	<b>4,661</b>	<b>203,033,000</b>	<b>100.0</b>
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### **Snap peas (*Pisum sativum* var. *macrocarpon*)**

Snap peas is mainly grown for the export market. The area under Snap peas increased by 6% from 588 Ha in 2017 to 626 Ha in 2018. The value increased from Ksh 299.49 million in 2017 to Ksh 333.68 million in 2018. Meru and Nyeri are the leading producing Counties, accounting for 90.3% of the country's total value. The main challenges in the production of snap peas are Powderly mildew and leaf miner.

**Table 24: Performance of Snap peas in selected counties for the years 2017-2018**

COUNTY	2017			2018			% Of total
	Area (Ha)	Volume (Tons)	Value (Kshs)	Area (Ha)	Volume (Tons)	Value (Kshs)	
<b>Meru</b>	454	4,100	227,000,000	465	3,163	251,040,000	<b>73.9</b>
<b>Nyeri</b>	53	514	45,589,537	58	564	55,634,124	<b>16.4</b>
<b>Trans Nzoia</b>	29	133	4,310,003	52	222	11,072,000	<b>3.3</b>
<b>Laikipia</b>	16	220	10,656,960	10	170	9,800,000	<b>2.9</b>
<b>Narok</b>	25	140	9,400,000	30	160	9,600,000	<b>2.8</b>
<b>Elgeyo Marakwet</b>	11	50	2,540,000	11	50	2,540,000	<b>0.7</b>
<b>Total</b>	<b>588</b>	<b>5,157</b>	<b>299,496,500</b>	<b>626</b>	<b>4,328</b>	<b>339,686,124</b>	<b>100.0</b>

### **Baby corn (*Zea mays* var. *scarni*)**

Baby corn is grown mainly for the export market. It is used in the preparation of vegetable prepacks where it is mixed with other vegetables. During the year under review, the area under baby corn production decreased by 7 percent from 697Ha in 2017 to 587Ha in 2018. However, the volume and value increased by 48 and 46 percent in 2017 compared to 2018.

**Table 25: Performance of Baby Corn in selected counties for the years 2017-2018**

COUNTY	2017			2018			% Of total
	Area (Ha)	Volume (Tons)	Value (Kshs)	Area (Ha)	Volume (Tons)	Value (Kshs)	
<b>Makueni</b>	264	1,602	32,587,602	210	6,090	98,500,000	<b>40.3</b>
<b>Kirinyaga</b>	214	4,873	77,655,000	147	5,218	83,401,103	<b>34.1</b>
<b>Laikipia</b>	160	3,330	40,000,000	170	3,400	45,000,000	<b>18.4</b>
<b>Meru</b>	35	233	7,484,400	37	222	7,770,000	<b>3.2</b>
<b>Kiambu</b>	4	60	4,800,000	5	62	4,850,000	<b>2.0</b>
<b>Kakamega</b>	2	38	2,600,000	2	34	2,500,000	<b>1.0</b>
<b>Kajiado</b>	10	41	1,048,000	11	42	1,208,000	<b>0.5</b>
<b>Murang'a</b>	3	10	840,000	2	9	720,000	<b>0.3</b>
<b>Trans Nzoia</b>	1	6	120,000	3	18	360,000	<b>0.1</b>
<b>Total</b>	<b>697</b>	<b>10,194</b>	<b>167,135,002</b>	<b>587</b>	<b>15,095</b>	<b>244,309,103</b>	<b>100.0</b>

**Broccoli (*Brassica oleraceae var. italica*)**

Broccoli is produced for the high-end markets in the urban centers and hotels as well as for export. During the year under review the area under broccoli production increased by 19% with volume and value also increasing by 12% and 16%. Broccoli was in the previous year under reported. The demand for Broccoli is increasing due to its high nutrition value and medicinal attributes.

**Table 26: Performance of Broccoli in selected counties for the years 2017-2018**

COUNTY	2017			2018			% Of total
	Area (Ha)	Volume (Tons)	Value (Kshs)	Area (Ha)	Volume (Tons)	Value (Kshs)	
<b>Meru</b>	214	2,265	167,800,000	274	2,615	195,200,000	<b>77.5</b>

Kisii	124	1,240	17,500,000	125	1,250	18,800,000	7.5
Kiambu	34	294	11,364,000	40	410	13,355,000	5.3
Vihiga	5	13	650,000	17	133	9,100,000	3.6
Homabay	18	270	10,800,000	18	270	5,730,000	2.3
Laikipia	8	160	2,400,000	10	55	4,200,000	1.7
Nakuru	3	38	990,000	3	52	1,675,000	0.7
Nairobi	3	36	3,940,455	3	35	1,600,000	0.6
Kakamega	14	37	1,110,000	15	45	1,250,000	0.5
Murang'a	5	25	1,000,000	5	20	800,000	0.3
Total	428	4,378	217,554,455	509	4,886	251,710,000	100.0

### 3.1.10Cauliflower (*Brassica oleracea var. botrytis*)

During the year under review the area under production increased from 69 ha in 2017 to 73 ha in 2018 and value decreased from Kshs33.15million to Kshs25.67 million. Kiambu and Taita Taveta were the leading counties in value in 2017accounting for 63.1 and 25.9 percent of the total value respectively.

**Table 27: Performance of Cauliflower in selected counties for the years 2017-2018**

County	Year 2017			Year 2018			% of Total Value
	Area (Ha)	Volume (MT )	Value(KES)	Area (Ha)	Volume (MT	Value ( KES)	
Kiambu	51	589	21,326,400	53	600	16,206,000	63.1
Taita Taveta	9	333	6,660,000	9	333	6,660,000	25.9
Nairobi	2	52	3,760,000	2	30	1,200,000	4.7
Kakamega	4	40	800,000	5	50	850,000	3.3
Murang'a	3	15	600,000	4	19	760,000	3.0
Total	69	1,029	33,146,400	73	1,032	25,676,000	100.0

### 3.1.11 Runner beans (*Phaseolus coccineus*)

Runner beans are majorly grown for the export market and require some additional lighting thus being capital intensive. During the year under review the area increased by 8.6% with volume and value also increasing with 12.6% and 5.7% compared to 2017. The leading counties in production of runner beans were Meru and Nakuru counties accounting for 89.2 and 10.4 percent of the total value.

**Table 28: Performance of Runner Beans in selected counties for the years 2017-2018**

COUNTY	2017			2018			% Of total
	Area (Ha)	Volume (Tons)	Value (Kshs)	Area (Ha)	Volume (Tons)	Value (Kshs)	
Meru	47	1,153	172,950,000	47	1,253	182,950,000	89.2
Nakuru	30	180	20,400,000	37	248	21,420,000	10.4
Machakos	2.0	6.5	340,000	2.2	5.8	345,000	0.2
Kajiado	1.5	4.0	330,000	1.5	5.6	332,000	0.2
Nairobi	0.3	0.5	24,000	0.3	0.5	24,000	0.0
Total	81	1,344	194,044,000	88	1,513	205,071,000	100.0

## 3.2 Indigenous vegetables (African Leafy Vegetables)

The preference for the indigenous vegetable popularly known as African leafy vegetables (ALVs) has been on the increase because of their high nutritive value and low application of inorganic fertilizers and pesticides during production. In 2018, the area, volumes and values of (ALVs) increased by 20, 31 and 10 percent respectively. In this category of vegetables, Cow peas contributed 29 percent followed by African Nightshade and spider plant that contributed 27 and 12 percent respectively. Export of dried ALVs is on the increase due to increased demand by Kenyans in the diaspora particularly in United Kingdom and Germany.

**Table 29: Summary of Indigenous vegetables by Area, Volume and Value in 2017-2018**

Crops	2017			2018			% Of Total
	Area (Ha)	Volume (MT)	Value ( KES)	Area (Ha)	Volume (MT)	Value ( KES)	
<b>Cow peas</b>	31,353	79,345	2,335,372,492	36,745	119,326	2,495,426,701	<b>28.78</b>
<b>African night shade</b>	4,634	48,643	1,817,129,275	6,849	68,828	2,378,251,829	<b>27.43</b>
<b>Spider plants</b>	3,427	27,299	1,054,324,056	3,758	28,932	1,051,113,259	<b>12.12</b>
<b>Leaf Amaranth</b>	2,277	23,079	788,770,073	3,264	31,843	927,658,213	<b>10.70</b>
<b>Pumpkin fruit</b>	1,293	21,993	568,311,788	1,380	24,267	569,098,694	<b>6.56</b>
<b>Pumpkin fruits</b>	1,293	21,993	568,311,788	1,380	24,267	519,098,694	<b>5.99</b>
<b>Slender</b>	521	6,789	294,698,000	767	7,092	302,511,741	<b>3.49</b>
<b>Jute Mallow</b>	466	3,996	178,310,930	608	3,971	157,389,227	<b>1.82</b>
<b>Pumpkin leaves</b>	837	5,421	167,604,936	716	4,969	150,877,111	<b>1.74</b>
<b>Grain Amaranth</b>	376	974	70,425,400	314	903	68,096,067	<b>0.79</b>
<b>Vine Spinach</b>	229	1,687	42,576,000	250	1,708	47,264,377	<b>0.55</b>
<b>Malabor</b>	40	128	2,221,499	38	116	2,182,097	<b>0.03</b>
<b>Russian Comfrey</b>	56	105	1,052,500	51	143	1,847,000	<b>0.02</b>
<b>Total</b>	<b>46,802</b>	<b>241,451</b>	<b>7,889,108,736</b>	<b>56,120</b>	<b>316,363</b>	<b>8,670,815,011</b>	<b>100.0</b>

### **3.2.1 Cowpeas (*Vigna unguiculata*)**

Cowpeas are mainly grown for the domestic market as leafy vegetable. Cow peas are a drought tolerant crop mainly grown in arid and arid and semi-arid counties. During the year under review, the area under cow peas was 36,745 Ha producing 119,326 Tons valued at Ksh2.5Billion. This represented an increase in area, volume and value by 17%, 50% and 7% respectively compared to 2017. The increase in production is attributed to favorable rains in 2018 compared to 2017. Farm gate prices were low due to high production. The main producing counties are Makueni, Kwale, Machakos, Siaya, Nyamira and Bungoma among others.

**Table 30: Performance of Cowpeas in selected counties for the years 2017-2018**

COUNTY	2017			2018			% Of total
	Area (Ha)	Volume (Tons)	Value (Kshs)	Area (Ha)	Volume (Tons)	Value (Kshs)	
<b>Makueni</b>	15,052	14,800	540,222,600	16,372	47,608	655,080,000	<b>26.3</b>
<b>Kwale</b>	3,545	7,604	267,928,000	3,880	10,092	336,050,000	<b>13.5</b>
<b>Machakos</b>	2,324	6,987	165,216,200	2,773	8,408	229,217,000	<b>9.2</b>
<b>Siaya</b>	1,173	5,647	263,900,000	812	5,187	224,064,552	<b>9.0</b>
<b>Nyamira</b>	263	4,184	123,596,000	262	4,151	123,746,000	<b>5.0</b>
<b>Bungoma</b>	304	3,990	119,640,000	266	3,239	100,844,000	<b>4.0</b>
<b>Busia</b>	915	2,253	116,705,556	963	2,214	84,600,000	<b>3.4</b>
<b>Taita Taveta</b>	775	6,907	54,255,500	986	8,400	83,209,500	<b>3.3</b>
<b>Kitui</b>	2,830	5,890	107,250,000	2,459	5,731	82,852,500	<b>3.3</b>
<b>Kakamega</b>	368	757	53,786,000	1,086	2,710	78,860,250	<b>3.2</b>
<b>Kilifi</b>	555	3,153	46,028,023	3,804	4,429	71,548,023	<b>2.9</b>
<b>Homabay</b>	576	2,355	73,053,163	478	1,726	50,164,000	<b>2.0</b>
<b>Tharaka Nithi</b>	67	1,350	63,750,000	77	2,142	45,750,000	<b>1.8</b>
<b>Kisii</b>	406	1,214	22,054,000	407	1,251	35,948,962	<b>1.4</b>
<b>Mombasa</b>	83	1,580	34,000,000	88	1,560	31,200,000	<b>1.3</b>
<b>Kisumu</b>	133	455	29,100,000	129	450	29,000,000	<b>1.2</b>
<b>Murang'a</b>	114	1,072	24,906,880	116	1,135	26,237,320	<b>1.1</b>
<b>Embu</b>	107	1,915	19,150,000	102	1,685	25,000,000	<b>1.0</b>
<b>Others</b>	1763.05	7233.275	210830571	1684.6	7209.505	182054595	<b>7.3</b>
<b>Total</b>	<b>31,353</b>	<b>79,345</b>	<b>2,335,372,492</b>	<b>36,745</b>	<b>119,326</b>	<b>2,495,426,701</b>	<b>100.0</b>

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

African Nightshade is the second most important African leafy vegetable after cowpeas. It has good potential for value addition as it can be dried and marketed locally and even exported to European countries with large Kenya populations.

During the period under review, the area under production was 5,849Ha producing 68,828 tons valued at Ksh2.4 Billion. In 2018, Area, volume and value increased by 19%, 24% and 18% respectively compared to 2017 due to increase in popularity in the urban areas.

The two leading growing counties are Kisii and Nyamira Counties in value contributing to 24% and 20% of the total value in 2018.

**Table 31: Performance of African Nightshade in selected counties for the years 2017-2018**

COUNTY	2017			2018			% Of total
	Area (Ha)	Volume (Tons)	Value (Kshs)	Area (Ha)	Volume (Tons)	Value (Kshs)	
Kisii	656	10,350	550,340,000	951	13,068	561,540,807	23.6
Nyamira	862	11,124	427,750,000	928	12,190	477,450,000	20.1
Bungoma	226	2,704	107,710,000	376	7,495	314,850,000	13.2
Machakos	330	7,130	193,900,000	349	7,421	199,005,000	8.4
Kisumu	249	3,245	124,512,000	236	3,880	126,000,000	5.3
Bomet	139	2,780	86,800,000	144	2,880	92,560,000	3.9
Narok	294	3,590	71,800,000	304	4,183	77,058,872	3.2
Homabay	313	1,375	55,995,000	429	1,747	70,400,000	3.0
Busia	145	799	65,600,000	142	971	70,250,000	3.0
Migori	111	687	25,564,000	194	1,050	46,399,100	2.0
Kajiado	32	305	6,480,000	50	850	36,000,000	1.5
Siaya	169	698	22,722,000	129	702	30,331,540	1.3
Trans Nzoia	177	2,689	41,942,380	144	2,473	27,578,285	1.2
Kiambu	200	2,219	59,640,000	118	1,155	27,175,070	1.1
Kakamega	210	721	26,490,000	323	833	27,163,500	1.1
Uasin Gishu	61	506	13,435,000	17	795	25,080,000	1.1
West Pokot	78	221	13,462,000	147	1,635	24,000,000	1.0
Kilifi	34	127	4,185,000	56	477	16,582,000	0.7
Kericho	42	440	10,962,000	45	430	16,452,000	0.7
Nakuru	87	534	16,463,500	92	692	16,079,000	0.7

<b>Others</b>	520	3,399	81,376,395	676	3,902	96,296,655	<b>4.0</b>
<b>Total</b>	<b>4,934</b>	<b>55,643</b>	<b>2,007,129,275</b>	<b>5,849</b>	<b>68,828</b>	<b>2,378,251,829</b>	<b>100.0</b>

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

Spider plant is locally known as “Sagaa” or “Saget” and is grown for the domestic market. In 2018, the area and volume increased by 11 and 6 percent respectively. However, there was no significant change in value. The increased production was attributed the good rainfall in the main production areas of Nyanza and Western. Like other African leafy vegetables, spider plant vegetable is gaining a lot of popularity especially in urban areas partly because the crop does not require use of pesticides therefore the consumers consider it safe and healthy. The counties that led in production of this crop were Kisii, Nyamira, Homabay, Kisumu and Bungoma.

**Table 32: Performance of spider plant in selected counties for the years 2017-2018**

COUNTY	2017			2018			% Of total
	Area (Ha)	Volume (Tons)	Value (Kshs)	Area (Ha)	Volume (Tons)	Value (Kshs)	
<b>Kisii</b>	456	5,789	310,804,000	497	5,724	275,024,318	26.2
<b>Nyamira</b>	680	6,396	200,778,000	766	7,141	248,705,000	23.7
<b>Homabay</b>	572	2,788	105,804,600	617	2,437	87,671,000	8.3
<b>Kisumu</b>	189	1,845	81,125,000	196	1,880	82,000,000	7.8
<b>Bungoma</b>	135	1,768	69,360,000	156	2,102	66,700,000	6.3
<b>Narok</b>	204	2,309	41,800,000	207	2,480	43,635,985	4.2
<b>Busia</b>	115	321	22,885,000	165	612	36,816,000	3.5
<b>Kiambu</b>	96	1,162	32,330,000	96	1,193	33,240,000	3.2
<b>Bomet</b>	39	595	28,400,000	45	705	31,200,000	3.0



<b>Machakos</b>	106	618	25,400,000	165	665	24,475,000	2.3
<b>Kakamega</b>	233	850	31,452,500	243	677	20,798,550	2.0
<b>Migori</b>	91	561	29,029,200	150	714	16,677,000	1.6
<b>Siaya</b>	93	420	16,650,000	74	353	14,154,042	1.3
<b>Kericho</b>	41	214	9,950,000	48	252	13,026,500	1.2
<b>Vihiga</b>	34	158	8,713,333	41	184	10,658,000	1.0
<b>Nandi</b>	12	59	2,314,286	41	219	9,252,000	0.9
<b>Uasin Gishu</b>	34	255	5,475,000	33	282	7,275,000	0.7
<b>West Pokot</b>	25	78	5,117,000	16	210	4,700,000	0.4
<b>Kajiado</b>	10	46	1,380,000	8	120	4,500,000	0.4
<b>Baringo</b>	54	259	7,764,000	44	213	4,237,140	0.4
<b>Others</b>	210	808	17,792,137	181	770	16,367,725	1.6
<b>Total</b>	<b>3,427</b>	<b>27,299</b>	<b>1,054,324,056</b>	<b>3,788</b>	<b>28,932</b>	<b>1,051,113,259</b>	<b>100.0</b>

### 3.2.4 Pumpkin leaves (*Cucurbita maxima*)

Pumpkin leaves are a common vegetable among some communities in Kenya. Harvesting of the pumpkin leaves reduce the production of pumpkin fruits. During the year under review, the area under production was 716Ha producing 4,969tons valued at Kshs150.8Million. This represented a decrease in area, volume and value by 14.5, 8.3 and 10percent respectively compared to 2017. The county's leading in values were Kisii, Bungoma and Kakamega with 44.2, 11.8 and 8.5 percent of the total value.

**Table 33: Performance of Pumpkin Leaves in selected counties for the years 2017-2018**

COUNTY	2017			2018			% Of total
	Area (Ha)	Volume (Tons)	Value (Kshs)	Area (Ha)	Volume (Tons)	Value (Kshs)	

<b>Kisii</b>	147	1,912	75,684,000	139	1,789	66,645,061	<b>44.2</b>
<b>Bungoma</b>	57	543	23,690,000	64	552	17,760,000	<b>11.8</b>
<b>Kakamega</b>	45	441	13,240,000	46	541	12,884,150	<b>8.5</b>
<b>Kisumu</b>	30	240	10,240,000	30	240	10,240,000	<b>6.8</b>
<b>Busia</b>	31	107	2,812,000	38	223	7,392,000	<b>4.9</b>
<b>Homabay</b>	28	192	5,760,000	56	194	5,800,000	<b>3.8</b>
<b>Nyamira</b>	52	302	4,426,000	56	337	4,846,000	<b>3.2</b>
<b>Embu</b>	39	329	4,040,000	9	104	3,040,000	<b>2.0</b>
<b>Kiambu</b>	15	100	3,000,000	15	100	3,000,000	<b>2.0</b>
<b>Elgeyo Marakwet</b>	25	99	2,750,000	24	100	2,760,000	<b>1.8</b>
<b>Nandi</b>	22	110	2,200,000	23	115	2,300,000	<b>1.5</b>
<b>Vihiga</b>	20	42	1,900,000	25	49	2,053,000	<b>1.4</b>
<b>Machakos</b>	46	132	4,741,200	16	42	1,644,000	<b>1.1</b>
<b>Kajiado</b>	6	18	270,000	6	80	1,500,000	<b>1.0</b>
<b>Siaya</b>	40	80	2,400,000	20	40	1,200,000	<b>0.8</b>
<b>Baringo</b>	20	88	1,672,500	13	55	1,137,500	<b>0.8</b>
<b>Meru</b>	23	55	940,000	26	61	1,000,000	<b>0.7</b>
<b>Others</b>	193	632	7,839,236	111	348	5,675,400	<b>3.8</b>
<b>Total</b>	<b>837</b>	<b>5,421</b>	<b>167,604,936</b>	<b>716</b>	<b>4,969</b>	<b>150,877,111</b>	<b>100.0</b>

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

Leaf Amaranth also known African Spinach or “mchicha” is produced mainly for the domestic market across most counties. It is consumed in combination with other leafy vegetables and is rich in iron. During the year under review, the area under production was 2,424Ha producing 29,843 tons valued at Kshs.960.7 Million. This represented an increase in area volume and value by 2, 14 and 11percent respectively compared to 2017.

**Table 34: Performance of Leaves Amaranth in selected counties for the years 2017-2018**

COUNTY	2017			2018			% Of total
	Area (Ha)	Volume (Tons)	Value (Kshs)	Area (Ha)	Volume (Tons)	Value (Kshs)	
Lamu	349	3,960	162,440,000	349	6,360	192,440,000	20.0
Kilifi	238	2,219	79,113,805	271	3,621	124,499,805	13.0
Kisii	138	2,025	92,400,000	221	2,414	104,242,780	10.9
Kwale	200	2,600	93,975,000	205	2,360	96,000,000	10.0
Bomet	100	2,480	72,000,000	107	2,850	86,020,000	9.0
Machakos	140	2,170	55,100,000	166	2,419	72,095,000	7.5
Nyamira	92	2,664	75,860,000	89	2,524	63,900,000	6.7
Kiambu	108	1,440	40,930,000	101	1,207	37,476,155	3.9
Bungoma	56	700	26,150,000	67	827	27,820,000	2.9
Mombasa	62	1,364	28,600,000	60	1,320	27,400,000	2.9
Makueni	50	810	22,000,000	51	830	22,500,000	2.3
Vihiga	54	267	13,000,000	102	449	21,493,000	2.2
Siaya	127	737	23,033,000	51	289	16,666,000	1.7
Busia	77	228	9,205,000	84	232	11,295,000	1.2
Homabay	110	458	9,450,000	105	420	10,500,000	1.1
Nairobi	11	142	4,469,686	15	224	7,038,480	0.7
Nandi	5	20	935,714	31	250	6,520,000	0.7
Kakamega	79	213	7,312,500	141	279	6,430,250	0.7
Others	383	1,582	46,795,368	209	968	26,321,743	2.7
Total	2,377	26,079	862,770,073	2,424	29,843	960,658,213	100.0

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

Pumpkin fruit consumption is gaining popularity due to its health attributes and is also used as a food security crop. During the year under review, the area under production increased from 1,293ha in 2017 to 1,380 in 2018 a 6.7 percent increase. The volume of pumpkin fruit and value in 2018 also increased by 10.3 and 0.1 percent respectively compared to 2017. Main producing counties were Kirinyaga, Siaya, Baringo, Bomet and Homa bay.

**Table 35: Performance of Pumpkin Fruits in selected counties for the years 2017-2018**

COUNTY	2017			2018			% Of total
	Area (Ha)	Volume (Tons)	Value (Kshs)	Area (Ha)	Volume (Tons)	Value (Kshs)	
Kirinyaga	76	2,841	87,240,000	136	6,398	163,120,000	28.7
Siaya	40	1,300	78,000,000	20	800	48,000,000	8.4
Baringo	69	2,260	49,885,000	54	1,768	38,985,000	6.9
Bomet	153	3,060	33,900,000	168	3,360	37,600,000	6.6
Homabay	108	937	18,795,000	145	1,563	31,975,000	5.6
Tana River	27	264	8,463,000	38	498	25,050,000	4.4
Kakamega	57	1,119	35,435,500	120	1,061	24,104,166	4.2
Bungoma	54	906	19,005,000	58	1,064	24,019,000	4.2
Elgeyo Marakwet	40	760	8,738,000	45	1,546	19,847,000	3.5
Makueni	17	1,440	72,000,000	37	583	15,562,500	2.7
Kericho	28	478	14,224,000	38	535	12,660,000	2.2
Murang'a	50	252	11,030,700	68	295	12,535,050	2.2
Meru	29	378	7,700,000	43	614	11,846,000	2.1
Nakuru	24	282	12,139,000	40	638	10,810,000	1.9
Kwale	14	320	10,500,000	12	315	10,350,000	1.8
Nandi	22	220	9,900,000	23	230	10,350,000	1.8
Embu	40	294	6,740,000	26	306	9,800,000	1.7
Machakos	68	408	14,520,000	44	252	8,940,000	1.6

<b>Others</b>	379	4,476	70,096,588	266	2,442	53,544,978	<b>9.4</b>
<b>Total</b>	<b>1,293</b>	<b>21,993</b>	<b>568,311,788</b>	<b>1,380</b>	<b>24,267</b>	<b>569,098,694</b>	<b>100.0</b>

### 3.3 Aromatic Plants

Aromatic crops accounted for 2.9 percent of the total value of horticultural products. The area under production and volume increased in 2018 by 13.8 and 12.7 percent respectively compared to 2017. The value decreased by 3.1 percent from Ksh7.4billion in 2017 to Ksh7.16 in 2018. The leading crops in this category were bulb onions, coriander and spring onions accounting for 57.2, 9.3 and 8.6 percent respectively.

**Table 36: Summary of the performance of Aromatics for the years 2017-2018**

Crop	2017			2018			% Of total
	Area (Ha)	Volume (Tons)	Value (Kshs)	Area (Ha)	Volume (Tons)	Value (Kshs)	
<b>Bulb Onions</b>	6,479	101,955	4,539,546,087	7,001	105,585	4,096,410,715	<b>57.18</b>
<b>Coriander</b>	610	7,745	668,991,503	707	7,070	668,520,308	<b>9.33</b>
<b>Spring Onions</b>	2,530	20,319	508,497,192	3,448	35,340	618,017,755	<b>8.63</b>
<b>Rosemary</b>	561	8,381	429,768,090	567	8,270	422,562,797	<b>5.90</b>
<b>Bell pepper</b>	1,105	7,414	328,678,975	1,167	7,894	372,752,337	<b>5.20</b>
<b>Garlic</b>	241	2,712	249,975,000	282	3,113	279,539,575	<b>3.90</b>
<b>Long cayenne</b>	504	5,476	194,569,332	558	6,568	219,583,800	<b>3.07</b>
<b>ABE Chilli</b>	362	2,091	177,443,900	345	1,895	171,812,500	<b>2.40</b>
<b>Mint</b>	116	1,134	123,845,000	121	1,228	128,815,000	<b>1.80</b>
<b>Bullet Chilli</b>	204	1,509	90,253,735	191	1,926	112,577,800	<b>1.57</b>
<b>Chives</b>	125	1,230	58,111,356	245	1,473	46,695,060	<b>0.65</b>
<b>Leeks</b>	60	338	13,463,277	56	324	13,521,968	<b>0.19</b>
<b>Ginger</b>	24	84	8,772,000	24	93	9,672,000	<b>0.14</b>

<b>Celery</b>	3	17	1,695,850	4	18	1,757,950	<b>0.02</b>
<b>Parsley</b>	18	42	1,665,750	19	43	1,736,820	<b>0.02</b>
<b>Total</b>	<b>12,942</b>	<b>160,448</b>	<b>7,395,277,047</b>	<b>14,734</b>	<b>180,841</b>	<b>7,163,976,384</b>	<b>100.0</b>

### 3.3.1 Bulb onion (*Allium cepa* L.)

Production of Bulb onion is mainly done for domestic market. The demand for bulb onions in Kenya surpasses local supply resulting to the importation from the neighboring countries especially Tanzania. In 2018, the area under production was 7,001 Ha producing 105,585 Tons valued at Ksh4.1Billion. This represented an increase in area and production by 8 and 3.6 percent respectively; this was attributed to sufficient rainfall in 2018 and use of hybrid varieties. However, the value decreased by 3.3 percent. The decrease in value was due to glut and competition from Tanzanian onions. There is need for intervention by counties to enhance appropriate pre and post-harvest handling practices to reduce the post-harvest losses as well as improve on the quality of the onions. Among the major producing counties are Kajiado, Bungoma, Meru, Nyeri, and Narok.

**Table 37: Performance of Bulb onions in major counties for the years 2017-2018**

COUNTY	2017			2018			% Of total
	Area (Ha)	Volume (Tons)	Value (Kshs)	Area (Ha)	Volume (Tons)	Value (Kshs)	
<b>Kajiado</b>	640	22,400	1,008,000,000	670	25,233	1,098,000,000	<b>26.8</b>
<b>Bungoma</b>	547	17,510	694,750,000	619	13,805	506,700,000	<b>12.4</b>
<b>Meru</b>	697	8,615	525,250,507	696	9,721	469,770,000	<b>11.5</b>
<b>Nyeri</b>	834	10,599	335,290,019	838	10,616	336,537,317	<b>8.2</b>
<b>Narok</b>	840	5,880	276,150,000	585	5,080	237,200,000	<b>5.8</b>
<b>Siaya</b>	196	4,998	290,381,740	163	3,746	208,662,064	<b>5.1</b>
<b>Machakos</b>	111	1,196	56,800,000	513	4,025	187,920,000	<b>4.6</b>
<b>West Pokot</b>	353	3,865	116,550,000	448	7,370	161,725,000	<b>3.9</b>
<b>Isiolo</b>	119	1,098	59,300,000	205	2,465	99,785,000	<b>2.4</b>
<b>Homabay</b>	279	2,183	85,968,000	311	2,300	96,245,000	<b>2.3</b>
<b>Kisii</b>	202	2,288	96,736,168	178	2,139	84,144,684	<b>2.1</b>

<b>Kitui</b>	56	376	17,070,000	169	1,625	69,695,000	<b>1.7</b>
<b>Laikipia</b>	58	1,428	49,223,606	112	1,586	66,280,000	<b>1.6</b>
<b>Busia</b>	28	518	31,330,000	49	882	52,820,000	<b>1.3</b>
<b>Makueni</b>	59	651	24,649,000	62	803	39,185,000	<b>1.0</b>
<b>Trans Nzoia</b>	107	972	44,762,800	98	952	39,170,000	<b>1.0</b>
<b>Other</b>	1,355	17,378	523,584,247	1,287	13,238	342,571,649	<b>8.4</b>
<b>Total</b>	<b>6,479</b>	<b>101,955</b>	<b>4,235,796,087</b>	<b>7,001</b>	<b>105,585</b>	<b>4,096,410,715</b>	<b>100.0</b>

### 3.3.2 Spring onion (*Allium fistulosum*)

Spring onion is also commonly referred to as green bunching onion or shallot. It is a very popular crop among the smallholder farmers both commercially and for their own consumption. Spring onion is popular locally due to its strong pungent smell, high production and its ability to withstand harsh weather. The Area, Volume and Value increased by 34,31 and 32 percent respectively. The leading counties were Narok, ElgeyoMarakwet, Nakuru and Bungoma.

**Table 38: Performance of Spring onions in selected counties for the years 2017-2018**

COUNTY	2017			2018			% Of total
	Area (Ha)	Volume (Tons)	Value (Kshs)	Area (Ha)	Volume (Tons)	Value (Kshs)	
<b>Narok</b>	254	3,020	66,800,002	439	6,543	135,930,000	<b>18.3</b>
<b>E Marakwet</b>	163	1,195	59,797,500	172	1,420	77,146,000	<b>10.4</b>
<b>Homabay</b>	176	943	33,255,000	297	1,493	63,697,500	<b>8.6</b>
<b>Nakuru</b>	205	1,695	52,077,000	662	2,772	59,575,024	<b>8.0</b>
<b>Bungoma</b>	164	2,428	50,810,000	179	2,599	57,430,000	<b>7.7</b>
<b>Kisii</b>	119	1,350	39,500,002	188	1,806	55,440,000	<b>7.5</b>
<b>Nyamira</b>	123	1,506	27,028,000	160	1,555	39,730,000	<b>5.4</b>
<b>Meru</b>	133	1,445	24,140,000	132	1,428	38,380,000	<b>5.2</b>
<b>Kiambu</b>	84	461	14,624,000	77	632	29,604,309	<b>4.0</b>
<b>Embu</b>	39	530	11,100,000	37	450	21,500,000	<b>2.9</b>

<b>Trans Nzoia</b>	53	415	13,060,000	50	450	17,500,000	<b>2.4</b>
<b>Siaya</b>	416	542	27,400,000	266	367	17,150,000	<b>2.3</b>
<b>Bomet</b>	82	410	15,470,000	91	455	16,540,000	<b>2.2</b>
<b>Nandi</b>	39	528	10,560,000	87	787	16,012,750	<b>2.2</b>
<b>Baringo</b>	69	439	15,748,571	47	274	15,354,285	<b>2.1</b>
<b>Laikipia</b>	20	247	14,908,000	21	250	12,915,000	<b>1.7</b>
<b>Kericho</b>	40	371	10,358,600	123	356	11,446,500	<b>1.5</b>
<b>Others</b>	240	1,705	73,805,516	216	1,538	56,400,887	<b>7.6</b>
<b>Total</b>	<b>2,420</b>	<b>19,229</b>	<b>560,442,192</b>	<b>3,243</b>	<b>25,173</b>	<b>741,752,255</b>	<b>100.0</b>

### 3.3.1 Rosemary (*Rosamarinus officinalis*)

During the year under review, the area under production increased from 462ha to 472ha and production from 5,546tons to 5,615 tons in 2018 representing a 2.2 and 1.2 percent increase. The leading counties in value in 2017 were Kajiado, Mandera and Meru accounting for 37.29, 27.89 and 9.23 percent of the counties value respectively.

**Table 39: Rosemary by Area, Volume and Value in 2017-2018**

COUNTY	2017			2018			% Of total
	Area (Ha)	Volume (Tons)	Value (Kshs)	Area (Ha)	Volume (Tons)	Value (Kshs)	
<b>Kajiado</b>	138	1,750	95,400,000	147	1,800	96,000,650	<b>37.29</b>
<b>Mandera</b>	157	1,952	78,755,000	155	1,953	71,803,000	<b>27.89</b>
<b>Meru</b>	33	495	19,800,000	29	518	23,760,000	<b>9.23</b>
<b>Homabay</b>	80	480	22,680,000	80	480	22,680,000	<b>8.81</b>
<b>Siaya</b>	11	315	19,060,000	11	295	18,345,000	<b>7.13</b>
<b>Kirinyaga</b>	18	360	14,400,000	15	300	12,000,000	<b>4.66</b>
<b>West Pokot</b>	6	89	3,750,000	6	90	3,800,000	<b>1.48</b>
<b>Kiambu</b>	2	4	160,000	6	33	2,545,200	<b>0.99</b>
<b>Taita Taveta</b>	5	55	2,475,000	5	55	2,475,000	<b>0.96</b>



<b>Kakamega</b>	0	2	100,000	7	53	2,405,000	<b>0.93</b>
<b>Trans Nzoia</b>	4	17	875,000	4	18	900,000	<b>0.35</b>
<b>Embu</b>	5	21	590,000	4	17	550,000	<b>0.21</b>
<b>Nakuru</b>	3	5	125,000	3	1	120,000	<b>0.05</b>
<b>Vihiga</b>	1.0	1.5	42,500	1.0	1.0	40,000	<b>0.02</b>
<b>Nyeri</b>	0.13	0.35	15,590	0.15	.75	33,947	<b>0.01</b>
<b>Total</b>	<b>462</b>	<b>5,546</b>	<b>258,228,090</b>	<b>472</b>	<b>5,615</b>	<b>257,457,797</b>	<b>100.0</b>

### 3.3.2 Coriander (*Coriandrum sativum*)

Coriander, also known as “dhania or dahlia” is a popular herb grown for its aromatic leaves for export and domestic markets. During the year under review, the area under production was 707 Ha, producing 7,070 Tons valued at Ksh668.5Million. There was increase in area by 16 percent, however, there was a decline in volume by 8.7percent. Kiambu still remained the leading county in production accounting for 79 percent of the total production and value.

**Table 40: Performance of coriander in selected counties for the years 2017-2018**

COUNTY	2017			2018			% Of total
	Area (Ha)	Volume (Tons)	Value (Kshs)	Area (Ha)	Volume (Tons)	Value (Kshs)	
<b>Kiambu</b>	232	4,976	526,623,400	236	4,462	529,335,002	<b>79.2</b>
<b>Taita Taveta</b>	60	1,215	75,625,022	42	761	40,605,022	<b>6.1</b>
<b>Kajiado</b>	30	250	7,500,000	45	450	32,500,000	<b>4.9</b>
<b>Murang'a</b>	40	332	11,854,160	42	352	12,422,680	<b>1.9</b>
<b>Meru</b>	20	69	5,565,000	28	119	9,260,000	<b>1.4</b>
<b>Kirinyaga</b>	23	142	5,980,000	24	148	6,525,000	<b>1.0</b>
<b>Makueni</b>	20	83	4,325,000	40	119	5,250,000	<b>0.8</b>
<b>Nairobi</b>	10	44	2,794,368	9	69	3,912,847	<b>0.6</b>
<b>Wajir</b>	5	50	3,500,000	5	50	3,500,000	<b>0.5</b>
<b>Kericho</b>	9	40	2,215,000	8	35	2,606,700	<b>0.4</b>

<b>Baringo</b>	12	46	2,300,000	12	51	2,450,000	<b>0.4</b>
<b>Uasin Gishu</b>	9	46	2,172,000	10	29	2,328,350	<b>0.3</b>
<b>Nyeri</b>	1	5	89,953	3	30	1,788,650	<b>0.3</b>
<b>Homabay</b>	15	15	650,000	27	34	1,700,000	<b>0.3</b>
<b>Nandi</b>	13	52	1,560,000	13	52	1,560,000	<b>0.2</b>
<b>Kwale</b>	1	20	1,400,000	1	20	1,500,000	<b>0.2</b>
<b>Nakuru</b>	20	80	3,137,500	11	30	1,490,000	<b>0.2</b>
<b>Others</b>	93	280	11,700,100	151	261	9,786,057	<b>1.5</b>
<b>Total</b>	<b>610</b>	<b>7,745</b>	<b>668,991,503</b>	<b>707</b>	<b>7,070</b>	<b>668,520,308</b>	<b>100.0</b>

### 3.3.3 Long cayenne (*Capsicum annum*)

This is a hot type of pepper produced for export and domestic markets. During the year under review, the area under long cayenne, volume and value increased by 12.5, 3.5 and 19.4 percent respectively. The counties with the highest values were Kajiado Lamu and Kiambu accounting for 22.5, 12 and 9 percent respectively of the country's total value.

**Table 41: Performance of Long Cayenne in selected counties for the years 2017-2018**

COUNTY	2017			2018			% Of total
	Area (Ha)	Volume (Tons)	Value (Kshs)	Area (Ha)	Volume (Tons)	Value (Kshs)	
<b>Kajiado</b>	20	400	32,000,000	35	500	56,000,000	<b>22.5</b>
<b>Lamu</b>	23	288	30,112,500	25	288	30,112,500	<b>12.1</b>
<b>Kiambu</b>	16	198	17,590,000	34	268	22,360,000	<b>9.0</b>
<b>Makueni</b>	14	275	18,970,000	15	280	19,550,000	<b>7.8</b>
<b>Meru</b>	15	180	8,803,824	19	189	14,212,000	<b>5.7</b>
<b>Kwale</b>	28	264	9,920,000	28	264	12,920,000	<b>5.2</b>
<b>Migori</b>	40	272	14,368,008	21	190	12,345,000	<b>5.0</b>
<b>Machakos</b>	16	160	16,000,000	12	120	12,000,000	<b>4.8</b>
<b>Bungoma</b>	17	112	5,600,000	24	225	10,200,000	<b>4.1</b>

<b>Laikipia</b>	9	147	12,704,000	7	112	9,400,000	<b>3.8</b>
<b>Busia</b>	12	34	3,960,000	19	76	8,460,000	<b>3.4</b>
<b>Murang'a</b>	8	48	1,440,000	9	54	8,100,000	<b>3.3</b>
<b>Tana River</b>	18	284	7,455,000	18	277	6,550,000	<b>2.6</b>
<b>Taita Taveta</b>	19	142	6,047,500	15	142	5,992,500	<b>2.4</b>
<b>Kirinyaga</b>	6	36	5,400,000	6	36	5,400,000	<b>2.2</b>
<b>Others</b>	100	468	18,182,500	119	404	15,510,300	<b>6.2</b>
<b>Total</b>	<b>361</b>	<b>3,308</b>	<b>208,553,332</b>	<b>406</b>	<b>3,424</b>	<b>249,112,300</b>	<b>100.0</b>

### 3.3.4 Bullet chilies (*Capsicum annuum*)

In the year 2018, the area under Bullet chilies decreased by 5.2 percent while the volume and value increased by 16.3 and 19.4 percent respectively. The growth of this enterprise has been slowed down by the export self-regulation occasioned by infestation by false codling moth which is a notifiable pest in the European Union market. The counties with highest values in the year 2018 were Kajiado, Meru, Kirinyaga and Tana River.

**Table 42: Performance of Bullet Chilies in selected counties for the years 2017-2018**

COUNTY	2017			2018			% Of total
	Area (Ha)	Volume (Tons)	Value (Kshs)	Area (Ha)	Volume (Tons)	Value (Kshs)	
<b>Kajiado</b>	10	150	9,000,000	20	350	22,000,000	<b>25.6</b>
<b>Meru</b>	20	277	15,488,085	22	289	16,500,000	<b>19.2</b>
<b>Kirinyaga</b>	11	166	9,900,000	11	176	9,900,000	<b>11.5</b>
<b>Tana River</b>	21	265	9,150,000	22	278	9,300,000	<b>10.8</b>
<b>Machakos</b>	8	80	8,000,000	9	88	8,250,000	<b>9.6</b>
<b>Kwale</b>	8	80	6,500,000	8	80	7,000,000	<b>8.1</b>
<b>Kiambu</b>	6	80	5,000,000	8	82	5,250,000	<b>6.1</b>
<b>Kilifi</b>	34	66	2,872,800	21	39	1,952,800	<b>2.3</b>
<b>Makueni</b>	4	11	1,254,000	4	12	1,350,000	<b>1.6</b>

<b>Bomet</b>	2	20	1,200,000	2	20	1,240,000	<b>1.4</b>
<b>Taita Taveta</b>	13	31	1,234,000	13	31	1,234,000	<b>1.4</b>
<b>Homabay</b>	33	50	990,000	20	30	600,000	<b>0.7</b>
<b>Murang'a</b>	3	6	360,000	3	6	360,000	<b>0.4</b>
<b>Embu</b>	3	13	310,000	3	13	310,000	<b>0.4</b>
<b>Others</b>	15	19	826,350	16	33	835,250	<b>1.0</b>
<b>Total</b>	<b>191</b>	<b>1,313</b>	<b>72,085,235</b>	<b>181</b>	<b>1,527</b>	<b>86,082,050</b>	<b>100.0</b>

### 3.3.5 African birds eye chilies (*Capsicum frutescens*)

The African Birds Eye is produced for both the domestic and export markets and consumed either fresh or processed. During the year under review, the area under production reduced from 366 ha in 2017 to 350 ha in 2018 a 4.4 percent decrease while production increased from 1,431 tons to 1,449 during the same period which represented 1.3 increase. The value increased from 63.3 milion to 65.8 milion representing 4 percent increase as compared to 2017. In 2018 Lamu, Kwale Tana River and Kilifi were the leading counties accounting for 27, 23, 12 and 11 percent of the country's total value respectively.

**Table 43: Performance of African Birds eye chili in selected counties for the years 2017-2018**

COUNTY	2017			2018			% Of total
	Area (Ha)	Volume (Tons)	Value (Kshs)	Area (Ha)	Volume (Tons)	Value (Kshs)	
<b>Lamu</b>	228	485	17,875,000	228	485	17,875,000	<b>27.1</b>
<b>Kwale</b>	15	300	15,000,000	15	300	15,000,000	<b>22.8</b>
<b>Tana River</b>	16	44	924,000	22	140	8,120,000	<b>12.3</b>
<b>Kilifi</b>	30	262	13,459,000	15	137	7,234,000	<b>11.0</b>
<b>Kajiado</b>	6	60	2,600,000	4	140	5,600,000	<b>8.5</b>

West Pokot	3	25	2,000,000	3	25	2,000,000	<b>3.0</b>
Kirinyaga	6	18	1,200,000	7	28	1,600,000	<b>2.4</b>
Tharaka Nithi	6	15	900,000	10	30	1,500,000	<b>2.3</b>
Meru	14	74	3,440,000	7	32	1,496,000	<b>2.3</b>
Bomet	2	20	1,200,000	2	20	1,240,000	<b>1.9</b>
Kakamega	16	35	840,000	17	43	1,224,000	<b>1.9</b>
Turkana	8	22	1,260,000	8	23	1,060,000	<b>1.6</b>
Nandi	4	50	1,750,000	2	26	910,000	<b>1.4</b>
Migori	12.00	19.50	783,400.00	10.00	17.50	875,000.00	<b>1.3</b>
Vihiga	0.55	1.85	72,500.00	0.55	2.15	122,500.00	<b>0.2</b>
<b>Total</b>	<b>366</b>	<b>1,431</b>	<b>63,303,900</b>	<b>350</b>	<b>1,449</b>	<b>65,856,500</b>	<b>100.0</b>

### 3.3.6 Bell pepper (*Capsicum annuum* L.)

Bell pepper is also referred to as sweet pepper or capsicum. The most popular variety is the green sweet pepper although the yellow and the red are also gaining popularity. It is an important crop for urban and peri-urban horticulture farming. In 2018, the area under production volume and value increased by 5.6, 6.5 and 13 percent. The demand for bell pepper continues to increase in the country.

**Table 44: Performance of Bell pepper in selected counties for the years 2017-2018**

COUNTY	2017			2018			% Of total
	Area (Ha)	Volume (Tons)	Value (Kshs)	Area (Ha)	Volume (Tons)	Value (Kshs)	
<b>Kajiado</b>	139	1,817	63,890,000	174	1,931	79,200,000	<b>21.2</b>
<b>Kwale</b>	78	568	34,200,000	65	450	37,750,000	<b>10.1</b>
<b>Machakos</b>	76	458	16,740,000	123	854	35,868,000	<b>9.6</b>
<b>Taita Taveta</b>	146	700	34,611,250	146	737	35,321,250	<b>9.5</b>
<b>Murang'a</b>	98	407	23,941,503	122	509	28,666,750	<b>7.7</b>
<b>Makueni</b>	58	455	24,420,000	62	503	26,475,000	<b>7.1</b>

<b>Kiambu</b>	122	494	25,192,000	89	343	22,845,600	<b>6.1</b>
<b>Kilifi</b>	46	158	8,099,405	63	354	14,647,400	<b>3.9</b>
<b>Tana River</b>	22	257	7,665,000	34	366	14,056,000	<b>3.8</b>
<b>Nyeri</b>	40	278	7,680,389	47	293	10,544,823	<b>2.8</b>
<b>Meru</b>	14	171	8,855,400	16	183	9,515,400	<b>2.6</b>
<b>Nandi</b>	9	126	5,670,000	10	138	6,210,000	<b>1.7</b>
<b>Trans Nzoia</b>	14	122	6,100,000	15	123	6,150,000	<b>1.6</b>
<b>Laikipia</b>	19	332	13,980,200	13	142	4,900,000	<b>1.3</b>
<b>Others</b>	<b>224</b>	<b>1,071</b>	<b>47,633,828</b>	<b>190</b>	<b>967</b>	<b>40,602,114</b>	<b>10.9</b>
<b>Total</b>	<b>1,105</b>	<b>7,414</b>	<b>328,678,975</b>	<b>1,167</b>	<b>7,894</b>	<b>372,752,337</b>	<b>100.0</b>

### 3.3.7 Chives

The area under chives production increased by 9.3 percent with volume and value also increasing by 2.2 and 7.9 percent respectively compared to 2017. Chives are mainly grown for the export market. The major challenge in chives production is thrips which is a major pest. Meru county led in area, volume and value in 2018.

**Table 45: Performance of Chives in selected counties for the years 2017-2018**

COUNTY	2017			2018			% Of total
	Area (Ha)	Volume (Tons)	Value (Kshs)	Area (Ha)	Volume (Tons)	Value (Kshs)	
<b>Meru</b>	11.0	55.5	2,775,000	12.5	55.5	2,775,000	<b>27.4</b>
<b>Taita Taveta</b>	8.0	22.4	1,008,000	8.0	32.4	1,280,000	<b>12.6</b>
<b>Uasin Gishu</b>	3.5	48.5	1,050,000	3.8	50.0	1,150,000	<b>11.4</b>
<b>Homabay</b>	3.0	27.0	1,080,000	4.0	27.0	1,080,000	<b>10.7</b>
<b>Kwale</b>	9.0	49.0	1,078,000	11.0	38.0	983,200	<b>9.7</b>
<b>Tharaka Nithi</b>	1.5	10.9	700,000	1.6	11.5	735,000	<b>7.3</b>
<b>Nyeri</b>	3.0	18.0	358,776	5.0	25.2	550,860	<b>5.4</b>
<b>Kajiado</b>	3.0	6.0	470,000	3.5	6.6	520,000	<b>5.1</b>
<b>Migori</b>	5.9	12.9	346,000	3.7	7.8	461,000	<b>4.6</b>

<b>Nairobi</b>	0.3	3.0	202,080	0.4	4.0	245,000	<b>2.4</b>
<b>Trans Nzoia</b>	5.1	2.6	178,500	4.9	2.5	179,500	<b>1.8</b>
<b>Mandera</b>	1.0	1.0	65,000	1.0	2.0	90,000	<b>0.9</b>
<b>Kilifi</b>	0.5	2.4	74,000	0.5	2.5	75,000	<b>0.7</b>
<b>Total</b>	<b>54.8</b>	<b>259.2</b>	<b>9,385,356</b>	<b>59.9</b>	<b>264.9</b>	<b>10,124,560</b>	<b>1.0</b>

### 3.3.8 Garlic (*Allium sativum*)

Garlic has gained popularity in the domestic market due to its health attributes. In 2018, the area under production was 282Ha producing 3,113tons valued at Kshs279.5Million. This represented an increase in area, volume and value by 17, 14.8 and 11.8 percent respectively compared to 2017. The leading counties were Meru, Nyeri and Kisii that accounted for 40.23, 34.07 and 8.59 percent of the country total value.

**Table 46: Performance of Garlic in selected counties for the years 2017-2018**

COUNTY	2017			2018			% Of total
	Area (Ha)	Volume (Tons)	Value (Kshs)	Area (Ha)	Volume (Tons)	Value (Kshs)	
<b>Meru</b>	102	1,010	101,000,000	103	1,200	112,450,000	<b>40.23</b>
<b>Nyeri</b>	86	860	95,000,000	88	880	95,250,000	<b>34.07</b>
<b>Kisii</b>	6	150	9,000,000	40	400	24,000,000	<b>8.59</b>
<b>Kakamega</b>	8	110	13,200,000	9	115	13,500,000	<b>4.83</b>
<b>Bungoma</b>	8	130	2,000,000	10	158	8,800,000	<b>3.15</b>
<b>Narok</b>	13	193	12,960,000	13	86	8,600,000	<b>3.08</b>
<b>Tana River</b>	8	144	7,200,000	8	144	7,200,000	<b>2.58</b>
<b>Kisumu</b>	4	54	3,465,000	4	55	3,634,575	<b>1.30</b>
<b>Mombasa</b>	4	40	3,400,000	5	52	3,245,000	<b>1.16</b>
<b>Kajiado</b>	2	20	2,650,000	2	22	2,760,000	<b>0.99</b>
<b>Trans Nzoia</b>	1	1	100,000	1	1	100,000	<b>0.04</b>
<b>Total</b>	<b>241</b>	<b>2,712</b>	<b>249,975,000</b>	<b>282</b>	<b>3,113</b>	<b>279,539,575</b>	<b>100.00</b>

### 3.4 Asian Vegetables

Asian vegetables are popular both for export and local markets. However, the export market has stagnated especially for karella due to threat by quarantine pests. Mostly they are marketed as assorted vegetables and therefore market restriction of one affects all the others.

**Table 47: Summary of the Performance of Asian Vegetables for the years 2017-2018**

Crop	2017			2018			% Of total
	Area (Ha)	Volume (Tons)	Value (Kshs)	Area (Ha)	Volume (Tons)	Value (Kshs)	
Okra	1,344	9,734	459,721,613	1,396	10,671	463,641,693	71.3
Karella	111	944	92,615,000	123	1,076	100,168,000	15.4
Dudhi	121	1,356	39,236,600	124	1,413	42,617,000	6.6
Tindori	40	515	24,580,000	45	573	29,125,000	4.5
Valore	46	179	10,420,400	46	182	11,675,600	1.8
Turia	11	125	3,070,000	11	125	3,074,000	0.5
Total	1,673	12,853	629,643,613	1,745	14,040	650,301,293	100.0

#### 3.4.1 Eggplant (*Solanum melongena*)

Eggplant or Aubergine is also known as brinjals or ravaya. They are grown both for export and domestic markets. There has been a steady increase in demand in the local market especially in the coastal region. In 2018, the area under production, volume and value increased by 45, 49 and 37 percent respectively.

**Table 48: Performance of Eggplant in selected counties for the years 2017-2018**

County	Year 2017			Year 2018			% of Total Value
	Area (Ha)	Volume (MT )	Value(KES)	Area (Ha)	Volume (MT)	Value ( KES)	
Kwale	171	570	11,400,020	285	3,175	90,000,000	27.3



<b>Machakos</b>	91	1,422	50,370,000	109	1,726	59,470,000	<b>18.1</b>
<b>Kirinyaga</b>	60	1,030	38,700,000	72	1,327	46,145,000	<b>14.0</b>
<b>Kilifi</b>	57	604	13,678,000	134	1,342	32,518,442	<b>9.9</b>
<b>Meru</b>	81	961	33,938,400	73	864	31,558,400	<b>9.6</b>
<b>Makueni</b>	26	560	13,416,020	111	1,135	18,134,000	<b>5.5</b>
<b>Kiambu</b>	19	301	7,209,200	33	394	10,444,000	<b>3.2</b>
<b>Murang'a</b>	42	307	7,450,000	43	364	7,782,240	<b>2.4</b>
<b>Baringo</b>	4	72	4,200,000	11	116	6,500,000	<b>2.0</b>
<b>Trans Nzoia</b>	45	270	8,100,000	35	210	6,300,000	<b>1.9</b>
<b>Kajiado</b>	26	265	5,809,390	31	250	6,025,000	<b>1.8</b>
<b>Mombasa</b>	9	76	3,240,000	11	140	5,000,000	<b>1.5</b>
<b>Bungoma</b>	11	630	19,620,000	14	142	4,320,000	<b>1.3</b>
<b>TaitaTaveta</b>	26	348	18,840,000	17	111	1,680,000	<b>0.5</b>
<b>ElgeyoMarakwet</b>	7	56	1,400,000	7	56	1,400,000	<b>0.4</b>
<b>Others</b>	15	159	3,452,500	11	30	2,034,000	<b>0.6</b>
<b>Total</b>	<b>689</b>	<b>7,630</b>	<b>240,823,530</b>	<b>996</b>	<b>11,381</b>	<b>329,311,082</b>	<b>100.0</b>

### 3.4.2 Dudhi (*Lagenaria siceraria*)

Dudhi also known as bottle gourd and is grown for both export local markets especially among the Asian communities. The area under production was 124 Ha in 2018 which was a slight increase from 2017 at 121 ha. Production increased from 1,356 Tons in 2017 to 1,413 Tons in 2018 representing a 4 percent increase. The value also increased from Kshs 39.2 Million to Kshs42.6 Million in 2018 representing 8.6 percent increase.

**Table 49: Performance of Dudhi in selected counties for the years 2017-2018**

COUNTY	2017			2018			% Of total
	Area (Ha)	Volume (Tons)	Value (Kshs)	Area (Ha)	Volume (Tons)	Value (Kshs)	
<b>Murang'a</b>	42	630	15,750,000	48	720	18,000,000	<b>42</b>

<b>Meru</b>	40	408	11,226,600	39	390	15,450,000	<b>36</b>
<b>Machakos</b>	15	105	6,300,000	14	70	3,100,000	<b>7</b>
<b>Kiambu</b>	8	88	1,870,000	8	90	1,800,000	<b>4</b>
<b>Nandi</b>	4	40	1,600,000	4	45	1,750,000	<b>4</b>
<b>Mombasa</b>	1	15	750,000	3	45	1,225,000	<b>3</b>
<b>Tharaka Nithi</b>	9	51	1,275,000	6	33	825,000	<b>2</b>
<b>Kajiado</b>	2	19	465,000	2	20	467,000	<b>1</b>
<b>Total</b>	<b>121</b>	<b>1,356</b>	<b>39,236,600</b>	<b>124</b>	<b>1,413</b>	<b>42,617,000</b>	<b>100</b>

### 3.4.3 Karella (*Momordica charantia*)

Bitter guard (Karella) is grown for both export and domestic markets. During the year under review, the area increased from 111 Ha to 123 Ha, while production increased from 944 tons to 1,076 tons. The value of karella increased from 92.6million to 100.2million in 2018 as compared to 2017 representing 8.2 percent. The amount of Karella exported has been on the decline in the recent years due strict market requirements especially restriction on false codling moth.

**Table 50: Performance of Karella in selected counties for the years 2017-2018**

COUNTY	2017			2018			% Of total
	Area (Ha)	Volume (Tons)	Value (Kshs)	Area (Ha)	Volume (Tons)	Value (Kshs)	
<b>Murang'a</b>	35	280	26,800,000	38	304	29,640,000	<b>30</b>
<b>Machakos</b>	24	198	22,000,000	27	235	25,500,000	<b>25</b>
<b>Nandi</b>	25	250	22,500,000	22	220	21,000,000	<b>21</b>
<b>Makueni</b>	22	164	16,220,000	30	251	18,848,000	<b>19</b>
<b>Mombasa</b>	3	39	3,970,000	3	45	3,560,000	<b>4</b>
<b>Kajiado</b>	2	13	1,125,000	3	21	1,620,000	<b>2</b>
<b>Total</b>	<b>111</b>	<b>944</b>	<b>92,615,000</b>	<b>123</b>	<b>1,076</b>	<b>100,168,000</b>	<b>100</b>

### 3.4.4 Okra (*Hibiscus esculentus*)

Okra or Ladies finger is produced for export market and for local consumption especially by the coastal people. There is a growing market in the hotel industry. The area under production in 2018 increased by 2.3 percent with volume and value also increasing by 9.6 and 0.9 percent respectively compared to 2017. The crop is mainly grown in ASAL counties with major producing counties being Kwale, Kilifi, Makueni and Mombasa.

**Table 51: Performance of Okra in selected counties for the years 2017-2018**

COUNTY	2017			2018			% Of total
	Area (Ha)	Volume (Tons)	Value (Kshs)	Area (Ha)	Volume (Tons)	Value (Kshs)	
<b>Kwale</b>	592	6,463	312,077,000	557	6,347	307,620,000	<b>66.349</b>
<b>Kilifi</b>	264	1,434	88,829,743	342	2,373	92,980,843	<b>20.054</b>
<b>Makueni</b>	89	713	24,935,420	73	845	26,500,000	<b>5.716</b>
<b>Mombasa</b>	10	116	5,000,000	14	252	12,600,000	<b>2.718</b>
<b>Kakamega</b>	29	126	6,850,000	32	135	6,500,000	<b>1.402</b>
<b>Taita Taveta</b>	36	446	6,112,600	36	446	5,812,600	<b>1.254</b>
<b>Machakos</b>	15	172	7,280,000	15	77	4,100,000	<b>0.884</b>
<b>Turkana</b>	5	29	2,862,250	2	18	1,762,250	<b>0.380</b>
<b>Murang'a</b>	12	42	1,470,000	12	42	1,470,000	<b>0.317</b>
<b>Kajiado</b>	7	102	1,320,000	3	50	1,000,000	<b>0.216</b>
<b>Meru</b>	4	20	534,600	4	20	1,000,000	<b>0.216</b>
<b>Tana River</b>	6	22	862,000	6	23	928,000	<b>0.200</b>
<b>Kitui</b>	10	26	1,040,000	7	19	760,000	<b>0.164</b>
<b>Kiambu</b>	5	22	540,000	6	24	600,000	<b>0.129</b>
<b>Vihiga</b>	0	0	8,000	0	0	8,000	<b>0.002</b>
<b>Total</b>	<b>1,083</b>	<b>9,734</b>	<b>459,721,613</b>	<b>1,108</b>	<b>10,671</b>	<b>463,641,693</b>	<b>100.0</b>

### 3.5 Medicinal Plants

During the year under review, there was slight decrease in area and volume of medicinal plants by 1.6 and 2.2 percent respectively. However, there was no significant change in value of medicinal crops. There is need to promote production of medicinal plants more due to the growing domestic demand.

**Table 52: Summary of Medicinal plants by Area, Volume and Value in 2017-2018**

Crop	2017			2018			% Of total
	Area (Ha)	Volume (Tons)	Value (Kshs)	Area (Ha)	Volume (Tons)	Value (Kshs)	
<b>Tunguja</b>	150	1,600	44,000,000	150	1,600	44,000,000	<b>53.8</b>
<b>Aloe</b>	76	282	9,525,027	77	291	9,810,000	<b>12.0</b>
<b>Palak</b>	15	135	7,661,500	13	124	7,651,500	<b>9.4</b>
<b>Stinging nettle</b>	390	1,280	7,045,742	376	1,226	7,582,955	<b>9.3</b>
<b>Stevia</b>	51	101	6,480,000	54	91	5,303,400	<b>6.5</b>
<b>Vanilla</b>	26	83	4,288,000	24	79	4,188,000	<b>5.1</b>
<b>Moringa</b>	17	28	1,520,000	19	32	1,665,000	<b>2.0</b>
<b>Lemon Grass</b>	10	25	752,000	11	25	754,000	<b>0.9</b>
<b>Methi</b>	4	30	459,972	4	15	341,136	<b>0.4</b>
<b>Total</b>	<b>739</b>	<b>3,563</b>	<b>81,782,241</b>	<b>727</b>	<b>3,483</b>	<b>81,795,991</b>	<b>100.0</b>

## 4 CHAPTER THREE

### 4.1 FRUITS

#### 4.1.1 Overall performance

In 2018, the area increased marginally by 0.8 percent while production rose by 149,045 tons and value increased by Kshs4.499billion representing an increase of 4.5 and 7.6 percent respectively from what was achieved in 2017. This was attributed to good rains and some young orchards coming into production.

The major fruits grown in order of importance are; banana 34.85 percent, Mango 20.13 per cent, Pineapple 15.52 percent, avocado 9.90 percent, water melon 5.67 percent and Pawpaw 4.73 per cent.

**Table 53: Summary of Fruits production by Area, Volume and Value in 2017-2018**

COUNTY	2017			2018			% Of total
	Area (Ha)	Volume (MT)	Value ( KES)	Area (Ha)	Volume (MT)	Value ( KES)	
Banana	69,376	1,357,162	20,382,744,592	68,248	1,419,176	22,237,751,288	<b>34.85</b>
Mango	50,550	705,195	11,713,206,615	48,541	746,377	12,846,113,214	<b>20.13</b>
Pineapple	10,263	359,467	9,058,677,980	10,757	369,931	9,902,687,834	<b>15.52</b>
Avocado	15,353	297,122	5,638,000,680	16,501	318,087	5,972,104,428	<b>9.36</b>
Melons	7,409	132,155	3,358,065,781	7,895	149,693	3,615,469,738	<b>5.67</b>
Pawpaw	9,507	105,432	2,753,707,748	9,105	109,436	3,020,420,535	<b>4.73</b>
Orange	7,661	77,437	2,223,314,560	8,332	93,321	2,360,678,031	<b>3.70</b>
Purple Passion	2,157	34,320	1,237,582,081	2,296	21,821	1,128,937,640	<b>1.77</b>
Guavas	6,814	92,670	956,555,199	6,191	82,125	879,683,781	<b>1.38</b>
Tamarillo	1,844	11,983	463,389,069	1,743	10,161	505,931,730	<b>0.79</b>

<b>Yellow Passion</b>	947	10,072	346,113,746	1,075	12,153	388,578,238	<b>0.61</b>
<b>Tangerines</b>	1,441	13,906	325,861,030	1,134	11,807	259,266,701	<b>0.41</b>
<b>Lemons</b>	1,462	11,485	237,510,140	1,488	11,722	243,752,592	<b>0.38</b>
<b>Lime</b>	1,131	10,532	314,139,282	1,144	8,845	197,463,200	<b>0.31</b>
<b>Pepino Melon</b>	41	599	34,851,900	48	635	35,995,560	<b>0.06</b>
<b>Pears</b>	224	2,000	97,865,514	199	1,261	31,732,339	<b>0.05</b>
<b>Stawberries</b>	62	155	27,218,801	55	199	31,600,700	<b>0.05</b>
<b>Castard Apple</b>	138	1,281	29,212,777	144	1,363	30,385,341	<b>0.05</b>
<b>Loquats</b>	166	1,201	20,211,843	159	1,118	26,053,013	<b>0.04</b>
<b>Apple</b>	61	261	19,702,000	74	306	22,875,000	<b>0.04</b>
<b>Plums</b>	136	1,096	21,903,410	124	863	19,416,550	<b>0.03</b>
<b>Peaches</b>	43	309	21,080,250	40	240	18,851,403	<b>0.03</b>
<b>Grapes</b>	50	154	16,594,000	55	175	18,666,000	<b>0.03</b>
<b>White sapote</b>	54	222	5,155,313	78	411	7,421,010	<b>0.01</b>
<b>Thorn Melon</b>	36	238	4,820,000	71	272	5,594,000	<b>0.01</b>
<b>Total</b>	<b>186,928</b>	<b>3,226,453</b>	<b>59,307,484,311</b>	<b>185,499</b>	<b>3,371,498</b>	<b>63,807,429,866</b>	<b>100.0</b>

*Source: AFA-Horticulture Crops Directorate*

#### **4.1.2 Banana (*Musa sp*)**

Banana is the most important fruit in the country which accounted for 35 percent of the total value of fruits in 2018. It is a major food security crop and source of income for many farmers. In 2018, the area decreased by 2 percent due to drying up of some orchards as a result of prolonged drought in 2017 but production increased by 5 percent because of improved rains in 2018. The value increased by Kshs1.855billion in 2018 representing 9 percent increase from 2017 due to favorable rainfall and attractive farm gate prices. Main banana varieties grown in Kenya include: dessert banana cultivars - Grand Nain, Gross Mitchel, Williams's Hybrid, Valery, Chinese Cavendish, Giant Cavendish, Dwarf Cavendish are among the most popular dessert varieties. The cooking varieties include GradiShisikame, Mutahato, Uganda Green and Nusu

Ng'ombe while multipurpose cultivars are Muraru and Gold finger. The leading counties in banana production were Meru, Murang'a, Kirinyaga, Taita Taveta and Tharaka Nithi counties. Banana bacterial wilt remains a threat to banana production especially the Sweet banana.

**Table 54: Production of Bananas in selected Counties 2017-2018**

COUNTY	2017			2018			% Of total
	Area (Ha)	Volume (Tons)	Value (Kshs)	Area (Ha)	Volume (Tons)	Value (Kshs)	
<b>Meru</b>	11,305	288,266	3,289,016,800	10,542	308,095	4,526,124,400	<b>20.4</b>
<b>Murang'a</b>	7,160	166,641	2,491,177,097	7,214	173,439	2,592,802,800	<b>11.7</b>
<b>Kirinyaga</b>	6,208	122,850	1,633,795,000	5,485	152,409	1,809,520,000	<b>8.1</b>
<b>Taita Taveta</b>	2,528	58,420	1,262,284,350	2,972	74,231	1,470,902,200	<b>6.6</b>
<b>Tharaka Nithi</b>	3,622	74,940	1,071,600,000	4,112	87,540	1,255,840,000	<b>5.6</b>
<b>Kiambu</b>	6,233	117,951	1,621,226,500	4,262	70,194	1,133,123,360	<b>5.1</b>
<b>Kisii</b>	4,193	67,986	1,316,460,000	3,791	64,158	821,181,326	<b>3.7</b>
<b>Tana River</b>	1,861	24,246	717,795,750	1,400	23,550	760,700,000	<b>3.4</b>
<b>Machakos</b>	2,742	20,716	210,504,000	4,419	42,299	747,884,000	<b>3.4</b>
<b>Kakamega</b>	2,210	31,723	573,322,720	2,518	38,380	742,365,440	<b>3.3</b>
<b>Lamu</b>	1,208	29,290	758,115,540	1,207	23,911	712,748,500	<b>3.2</b>
<b>Nyamira</b>	1,943	44,000	768,482,819	1,898	37,840	702,360,000	<b>3.2</b>
<b>Migori</b>	1,882	31,894	404,102,000	1,524	33,419	607,088,400	<b>2.7</b>
<b>Bungoma</b>	2,765	30,667	372,705,000	2,829	42,014	566,100,000	<b>2.5</b>
<b>Embu</b>	1,706	45,828	434,137,500	1,801	49,628	466,275,000	<b>2.1</b>
<b>Nyeri</b>	1,264	26,597	392,268,393	1,531	35,194	433,795,390	<b>2.0</b>
<b>Others</b>	10,547	175,149	3,065,751,123	10,744	162,875	2,888,940,472	<b>13.0</b>
<b>Total</b>	<b>69,376</b>	<b>1,357,162</b>	<b>20,382,744,592</b>	<b>68,248</b>	<b>1,419,176</b>	<b>22,237,751,288</b>	<b>100.0</b>

#### 4.1.3 Mango (*Mangifera indica*)

Mango is grown for export market especially to the Middle East Countries and domestic market. The main varieties for export are Apple, Keitt, Tommy Atkins and Van dyke while Ngowe and other indigenous varieties are for domestic market. In 2018, the area under mangoes decreased by 4 percent from 50,550ha in 2017 to 48,541ha. However, the value and volume in 2018 increased by 6 and 10 percent respectively compared to 2017. The increase in volume could have been attributed by alternate annual bearing in mangoes. The leading counties in mango production as ranked by value were Makueni, Machakos, Kilifi and Kwale whose contribution to the total value was 25, 18, 15 and 5 percent respectively, in 2018. Mango fruit fly and mango weevil are the major challenges in production of mangoes in the country.

**Table 55: Summary of Mango by Area, Volume and Value in 2017-2018**

COUNTY	2017			2018			% of Total
	Area (Ha)	Volume (MT)	Value ( KES)	Area (Ha)	Volume (MT)	Value ( KES)	
<b>Makueni</b>	12,344	179,978	3,297,988,000	12,944	180,888	3,200,800,000	<b>24.9</b>
<b>Machakos</b>	6,475	135,345	2,523,955,000	6,528	126,402	2,280,170,000	<b>17.7</b>
<b>Kilifi</b>	9,733	107,328	1,751,980,000	9,797	121,535	1,870,956,500	<b>14.6</b>
<b>Kwale</b>	4,181	54,075	904,175,490	2,843	38,735	603,550,000	<b>4.7</b>
<b>Lamu</b>	2,555	42,594	639,610,011	2,648	33,136	497,032,500	<b>3.9</b>
<b>Meru</b>	3,550	32,824	427,613,950	2,383	23,664	409,263,333	<b>3.2</b>
<b>Tana River</b>	1,363	33,669	221,831,400	1,334	22,590	370,000,000	<b>2.9</b>
<b>ElgeyoMarakwet</b>	881	16,308	221,768,720	887	15,598	316,996,736	<b>2.5</b>
<b>TharakaNithi</b>	1,257	12,950	142,580,000	1,234	14,062	171,480,000	<b>1.3</b>
<b>Embu</b>	947	14,733	215,040,000	790	9,631	145,662,500	<b>1.1</b>
<b>Kitui</b>	1,405	15,370	187,170,000	1,098	11,050	140,640,000	<b>1.1</b>
<b>Murang'a</b>	911	9,660	155,960,500	858	6,437	113,764,117	<b>0.9</b>



<b>Siaya</b>	276	4,819	117,069,000	308	4,660	112,911,602	<b>0.9</b>
<b>Migori</b>	438	5,109	71,792,400	400	5,309	108,720,600	<b>0.8</b>
<b>Garissa</b>	592	5,445	70,405,125	604	6,516	89,529,000	<b>0.7</b>
<b>Busia</b>	450	5,002	82,049,548	450	5,215	76,165,000	<b>0.6</b>
<b>Homabay</b>	250	2,549	40,365,225	217	3,083	70,741,400	<b>0.6</b>
<b>West Pokot</b>	332	5,259	99,350,400	164	2,896	57,920,000	<b>0.5</b>
<b>Mombasa</b>	162	2,330	47,400,000	175	1,750	52,500,000	<b>0.4</b>
<b>Others</b>	2,448	19,848	495,101,846	2,880	113,219	2,157,309,926	<b>16.8</b>
<b>Total</b>	<b>50,550</b>	<b>705,195</b>	<b>11,713,206,615</b>	<b>48,541</b>	<b>746,377</b>	<b>12,846,113,214</b>	<b>100.0</b>

#### **4.1.4 Avocado (*Persea americana*)**

Avocado is grown for both export and domestic markets for fresh consumption and processing. In 2018, avocado production earned Kshs 5.97 billion representing an increase in value of 6 percent from Kshs5.64 billion in 2017. This was due to improved prices in the international markets due to the drought that affected the major world producing countries and opening of the Russian market that demands high volumes of Fuertes avocados which were not very popular in the European market. Indigenous avocado varieties (Jumbo) are also being exported in large volumes to the Middle East Countries.

The area under production increased from 15,353Ha in 2017 to 16,501Ha in 2018 a 7.5 percent change that was attributed to planting of new orchards in non-traditional areas of the Rift valley and Western. The volume increased from 297,122tons in 2017 to 318,087 tons in 2018 representing 7 percent increase. The leading county was Murang'a that accounted for 43 percent by value of produce followed by Kiambu, Kisii and Nyamira that contributed 11, 7 and 5 percent respectively of the total value.

The major challenges in avocado production are inadequate quality planting materials, fruit fly infestations, harvesting of immature avocados and Anthracnose especially on harvested Fuerte variety.

**Table 57: Production of Avocado in selected Counties, 2017-2018**

COUNTY	2017			2018			% Of total
	Area (Ha)	Volume (Tons)	Value (Kshs)	Area (Ha)	Volume (Tons)	Value (Kshs)	
<b>Murang'a</b>	4,319	120,645	2,537,654,000	4,321	123,555	2,543,873,660	<b>42.6</b>
<b>Kiambu</b>	1,505	29,004	570,675,000	1,819	37,964	682,031,000	<b>11.4</b>
<b>Kisii</b>	1,529	31,383	497,573,500	1,532	28,830	429,530,000	<b>7.2</b>
<b>Nyamira</b>	1,474	28,435	298,640,199	1,482	29,280	309,280,000	<b>5.2</b>
<b>Bomet</b>	379	6,786	118,710,000	474	10,590	217,800,000	<b>3.6</b>
<b>Embu</b>	692	13,180	195,000,000	709	14,543	216,525,000	<b>3.6</b>
<b>Meru</b>	743	15,253	225,268,512	755	8,553	209,966,667	<b>3.5</b>
<b>Bungoma</b>	268	3,802	105,552,100	299	6,028	201,320,000	<b>3.4</b>
<b>Kirinyaga</b>	433	5,282	120,532,000	367	5,892	147,040,000	<b>2.5</b>
<b>Nyeri</b>	176	2,268	31,222,748	584	5,784	112,702,064	<b>1.9</b>
<b>Makueni</b>	332	3,073	100,087,500	335	3,078	100,187,500	<b>1.7</b>
<b>TaitaTaveta</b>	177	6,888	62,071,660	180	9,183	85,129,940	<b>1.4</b>
<b>Vihiga</b>	292	2,105	45,660,000	389	4,554	83,705,000	<b>1.4</b>
<b>E Marakwet</b>	321	3,200	74,761,658	371	3,493	80,950,035	<b>1.4</b>
<b>Homabay</b>	263	2,176	68,770,000	299	2,061	71,070,000	<b>1.2</b>
<b>Migori</b>	457	7,477	160,987,500	315	3,284	67,684,200	<b>1.1</b>
<b>Migori</b>	312	2,984	59,684,200	315	3,284	67,684,200	<b>1.1</b>
<b>Nandi</b>	117	1,652	49,941,500	127	2,073	56,581,000	<b>0.9</b>
<b>Baringo</b>	180	2,438	49,440,000	202	2,760	56,000,000	<b>0.9</b>
<b>Kericho</b>	88	1,456	43,980,000	93	1,554	45,885,000	<b>0.8</b>
<b>Nakuru</b>	116	1,464	36,369,000	371	1,664	42,140,000	<b>0.7</b>
<b>Narok</b>	135	1,071	38,260,000	155	1,519	34,130,009	<b>0.6</b>
<b>Machakos</b>	526	3,467	104,964,000	298	2,280	33,925,000	<b>0.6</b>
<b>Others</b>	521	1,632	42,195,603	713	6,280	76,964,153	<b>1.3</b>
<b>Total</b>	<b>15,353</b>	<b>297,122</b>	<b>5,638,000,680</b>	<b>16,501</b>	<b>318,087</b>	<b>5,972,104,428</b>	<b>100.0</b>

#### 4.1.5 Oranges (*Citrus sinensis*)

Orange production is mainly done in the low lands of Kenya. During the year under review, oranges contributed to Kshs2.4billion which accounted for 4 percent of the total fruit value. As compared to 2017 in 2018 there was increase in area, volume and value by 9, 12 and 6 percent respectively. The main varieties Washing navel, Mediterranean sweet, Valencia, Pixie and Maniola.

The main challenges in orange production are Asian citrus psyllid which is a vector of the citrus greening disease which has affected the lowland areas of less than 1000M above sea level. Others are aphids, scales, scab and lack of clean planting materials.

**Table 58: Production of Oranges in selected Counties, 2017-2018**

COUNTY	2017			2018			% Of total
	Area (Ha)	Volume (Tons)	Value (Kshs)	Area (Ha)	Volume (Tons)	Value (Kshs)	
<b>Machakos</b>	1,290	21,480	751,600,000	1,305	29,050	796,650,000	<b>33.7</b>
<b>Kwale</b>	1,600	16,818	317,987,500	1,660	17,753	306,287,500	<b>13.0</b>
<b>Kilifi</b>	1,663	5,989	144,981,000	2,123	10,123	253,994,000	<b>10.8</b>
<b>Makueni</b>	470	6,644	189,840,000	622	7,442	204,620,000	<b>8.7</b>
<b>Lamu</b>	826	8,645	259,438,200	761	7,488	180,368,000	<b>7.6</b>
<b>Murang'a</b>	343	4,548	116,440,000	345	4,742	118,501,740	<b>5.0</b>
<b>Trans Nzoia</b>	178	3,510	111,128,000	181	3,499	114,033,750	<b>4.8</b>
<b>Kitui</b>	165	1,591	55,400,000	160	2,200	78,000,000	<b>3.3</b>
<b>Taita Taveta</b>	143	2,060	29,838,530	337	4,303	72,363,800	<b>3.1</b>
<b>Elgeyo Marakwet</b>	210	1,647	48,037,048	212	1,685	51,630,824	<b>2.2</b>
<b>Nakuru</b>	61	370	9,088,000	80	758	19,862,400	<b>0.8</b>
<b>Marsabit</b>	91	372	19,840,000	48	270	19,200,000	<b>0.8</b>
<b>Kisumu</b>	69	427	42,313,250	64	283	15,974,625	<b>0.7</b>
<b>Kajiado</b>	52	262	8,742,120	35	540	15,050,000	<b>0.6</b>
<b>Busia</b>	32	173	9,793,006	38	354	12,825,000	<b>0.5</b>
<b>Meru</b>	82	251	10,646,500	82	264	12,114,500	<b>0.5</b>

<b>Others</b>	387	2,652	98,201,406	280	2,569	89,201,892	<b>3.8</b>
<b>Total</b>	<b>7,661</b>	<b>77,437</b>	<b>2,223,314,560</b>	<b>8,332</b>	<b>93,321</b>	<b>2,360,678,031</b>	<b>100.0</b>

#### 4.1.6 Lemons (*Citrus limon*)

The demand for lemon fruits has been on the increase due to their health attributes. During the year under review, there was increase in area by 1 percent and value by 1 percent. However, there was decline in volume by 7 percent due to alternate seasonal bearing.

**Table 59: Production of Lemons in selected Counties, 2016-2017**

COUNTY	YEAR 2016			YEAR 2017			% of Total Value
	AREA (HA)	VOLUME (Tons)	VALUE(KES)	AREA (HA)	VOLUME (Tons)	VALUE(KES)	
<b>Kwale</b>	244	2,500	32,875,000	349	3,490	53,300,000	<b>24</b>
<b>Lamu</b>	149	1,788	35,760,000	150	1,877	37,548,000	<b>17</b>
<b>Tana River</b>	100	562	7,610,000	101	770	27,405,000	<b>13</b>
<b>Elgeyo Marakwet</b>	138	1,093	20,509,600	137	1,044	19,593,846	<b>9</b>
<b>Homabay</b>	17	218	10,061,228	40	277	18,965,000	<b>9</b>
<b>Kilifi</b>	160	1,274	40,460,022	94	550	10,069,500	<b>5</b>
<b>Machakos</b>	84	616	9,900,000	85	342	8,690,000	<b>4</b>
<b>Makueni</b>	119	947	16,987,444	83	698	7,394,000	<b>3</b>
<b>Migori</b>	6	53	1,325,000	15	143	5,825,000	<b>3</b>
<b>Meru</b>	36	232	2,914,000	39	158	4,011,200	<b>2</b>
<b>West Pokot</b>	13	85	2,315,750	16	109	3,185,750	<b>1</b>
<b>Baringo</b>	55	255	3,110,000	56	258	2,915,000	<b>1</b>
<b>Embu</b>	14	270	2,800,000	17	281	2,894,375	<b>1</b>
<b>Taita Taveta</b>	105	1,253	15,422,000	12	125	2,775,000	<b>1</b>
<b>Kajiado</b>	16	99	1,946,000	18	79	2,320,000	<b>1</b>
<b>Others</b>	90	373	11,845,924	149	564	10,971,683	<b>5</b>
<b>Total</b>	<b>1,346</b>	<b>11,618</b>	<b>215,841,968</b>	<b>1,361</b>	<b>10,764</b>	<b>217,863,354</b>	<b>100</b>

#### 4.1.7 Tangerines (*Citrus tangerina*)

Tangerines production in the country is majorly done in Kwale, Lamu and Makueni counties accounting for 54, 25, and 8 percent respectively. During 2018, the area, production and value decreased by 21, 15 and 20 percent compared to 2017. The decrease was attributed to drought, scab and mealy bug.

**Table 60: Production of Tangerines in selected Counties, 2017-2018**

COUNTY	2017			2018			% Of total
	Area (Ha)	Volume (Tons)	Value (Kshs)	Area (Ha)	Volume (Tons)	Value (Kshs)	
<b>Kwale</b>	430	6,490	183,640,000	375	5,164	139,110,000	<b>53.7</b>
<b>Lamu</b>	322	3,986	58,925,000	334	4,175	62,625,000	<b>24.2</b>
<b>Makueni</b>	138	705	21,723,000	133	671	20,821,000	<b>8.0</b>
<b>Meru</b>	46	601	11,386,750	46	651	10,542,750	<b>4.1</b>
<b>Kilifi</b>	401	1,221	33,703,000	160	447	7,593,000	<b>2.9</b>
<b>Homabay</b>	13	100	1,920,000	23	180	5,800,000	<b>2.2</b>
<b>Embu</b>	15	248	2,648,333	10	100	3,000,000	<b>1.2</b>
<b>Kajiado</b>	7	81	1,400,000	10	76	2,660,000	<b>1.0</b>
<b>Taita Taveta</b>	9	127	1,863,568	9	132	2,582,010	<b>1.0</b>
<b>Elgeyo Marakwet</b>	22	136	2,722,379	22	112	2,247,941	<b>0.9</b>
<b>Machakos</b>	9	45	800,000	8	75	1,500,000	<b>0.6</b>
<b>Others</b>	30	167	5,129,000	5	24	785,000	<b>0.3</b>
<b>Total</b>	<b>1,441</b>	<b>13,906</b>	<b>325,861,030</b>	<b>1,134</b>	<b>11,807</b>	<b>259,266,701</b>	<b>100.0</b>

#### 4.1.8 Purple Passion fruit (*Passiflora edulis*)

Purple passion is an important commercial fruit in Kenya. Its' market include export, local fresh and processing. It is popular in the cottage industry for fresh juice processing in Uganda which is one of the leading market destinations.

During the years under review, the area under production increased 139Ha from 2,157 Ha to 2,296 Ha in 2018 an increase 6 percent. The volume and value declined by 12,499 tons and Kshs 109 million which represented a 36 percent and 9 percent respectively.

The decline in production was mainly attributed to diseases such as *fusarium* wilt, dieback and woodiness virus disease. The decline in volumes led to decrease in value.

The leading counties in production of purple passion are Elgeyo Marakwet, Migori, and Bungoma counties.

**Table 61: Production of Purple Passion in selected Counties, 2017-2018**

COUNTY	2017			2018			% Of total
	Area (Ha)	Volume (Tons)	Value (Kshs)	Area (Ha)	Volume (Tons)	Value (Kshs)	
Elgeyo Marakwet	462	16,486	254,436,000	396	4,942	213,700,000	18.9
Migori	108	487	15,110,000	120	1,852	102,460,000	9.1
Bungoma	88	3,179	166,000,000	76	1,609	94,500,000	8.4
Uasin Gishu	92	1,104	84,280,000	115	937	58,102,000	5.1
Kirinyaga	72	1,109	71,561,538	75	1,160	54,600,000	4.8
Embu	41	446	22,577,778	60	934	52,700,000	4.7
Baringo	50	430	19,723,089	88	1,114	49,020,000	4.3
Murang'a	108	942	58,237,955	86	608	43,685,478	3.9
Kiambu	33	306	24,058,000	55	743	43,212,000	3.8
Machakos	104	601	42,980,000	108	620	41,950,000	3.7
Narok	78	832	8,934,030	92	848	41,130,000	3.6
Laikipia	24	380	22,450,000	36	626	32,834,286	2.9
Bomet	79	816	55,670,000	134	484	29,040,000	2.6
Meru	52	286	14,290,000	61	560	27,200,000	2.4
Siaya	36	364	20,969,698	52	392	26,792,000	2.4
Nandi	34	361	25,369,000	25	379	26,775,500	2.4
Trans Nzoia	48	643	37,080,000	53	415	23,556,000	2.1
Others	650	5,548	293,854,993	666	3,598	167,680,376	14.9

<b>Total</b>	<b>2,157</b>	<b>34,320</b>	<b>1,237,582,081</b>	<b>2,296</b>	<b>21,821</b>	<b>1,128,937,640</b>	<b>100.0</b>
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#### 4.1.9 Yellow Passion fruit (*Passiflora ligularis*)

Yellow passion is mainly grown for fruit juice processing. During the year under review, the area under production increased by 13.5 percent from 947ha in 2017 to 1075ha in 2018. The volume and value increased by 21 and 12 percent respectively in 2018 compared to 2017. The leading counties in value in 2018 were Kwale, Meru, Bungoma, Lamu, and Embu.

**Table 62: Production of Yellow Passion in selected Counties, 2017-2018**

County	2017			2018			% Of Total
	Area (Ha)	Volume (MT)	Value ( KES)	Area (Ha)	Volume (MT)	Value ( KES)	
<b>Kwale</b>	514	7,449	225,932,000	623	9,099	240,682,000	<b>61.9</b>
<b>Meru</b>	58	383	22,630,000	48	794	49,530,000	<b>12.7</b>
<b>Lamu</b>	66	990	49,500,000	64	970	48,800,000	<b>12.6</b>
<b>Embu</b>	8	64	3,200,000	36	261	11,670,000	<b>3.0</b>
<b>Kirinyaga</b>	11	91	6,859,999	11	90	6,750,800	<b>1.7</b>
<b>Busia</b>	21	185	4,883,332	28	252	6,679,998	<b>1.7</b>
<b>Murang'a</b>	8	89	5,480,000	8	88	4,360,000	<b>1.1</b>
<b>Kisumu</b>	65	112	4,173,975	62	72	3,760,000	<b>1.0</b>
<b>Tharaka Nithi</b>	16	62	2,650,000	15	60	2,600,000	<b>0.7</b>
<b>TaitaTaveta</b>	39	242	4,840,000	39	122	2,440,000	<b>0.6</b>
<b>Vihiga</b>	9	127	5,878,000	9	51	2,400,000	<b>0.6</b>
<b>Kitui</b>	6	48	2,325,000	14	74	2,200,000	<b>0.6</b>
<b>Kakamega</b>	16	31	1,250,000	18	33	1,338,000	<b>0.3</b>
<b>Kajiado</b>	2	35	1,325,000	2	34	1,285,000	<b>0.3</b>
<b>Kilifi</b>	52	64	2,407,440	47	52	1,267,440	<b>0.3</b>
<b>Others</b>	57	101	2,779,000	53	103	2,815,000	<b>0.7</b>
<b>Total</b>	<b>947</b>	<b>10,072</b>	<b>346,113,746</b>	<b>1,075</b>	<b>12,153</b>	<b>388,578,238</b>	<b>100.0</b>

#### 4.1.10 Pineapples (*Ananas comosus*)

Pineapple is grown for both fresh and processing market. The main variety grown is smooth cayenne. During the year under review, the area, production and value of the crop were 10,757 Ha, 369,931 Tons and Kshs9.9 Billion respectively.

The major counties accounting for 82 percent of total value of pineapple were Murang'a, Kiambu, Homabay, Kericho and Machakos and individually accounting for 47, 13, 11, 10 and 6 percent respectively. The major constraints to pineapple production are unavailability of quality planting material and insect pests' especially mealy bugs and nematodes besides poor agronomic practices among smallholders. In addition, there is limited cottage industry to process pineapple in diverse range of products.

**Table 63: Production of Pineapples in selected Counties, 2017-2018**

COUNTY	2017			2018			% Of total
	Area (Ha)	Volume (Tons)	Value (Kshs)	Area (Ha)	Volume (Tons)	Value (Kshs)	
<b>Murang'a</b>	3,507	161,950	4,693,789,500	3,507	161,855	4,693,795,000	<b>47.4</b>
<b>Kiambu</b>	431	8,926	265,650,000	1,276	35,934	1,312,920,000	<b>13.3</b>
<b>Homabay</b>	2,324	39,469	876,965,000	1,860	29,678	1,077,962,500	<b>10.9</b>
<b>Kericho</b>	1,224	72,676	1,093,974,000	1,251	72,652	1,006,884,000	<b>10.2</b>
<b>Machakos</b>	400	24,000	565,000,000	400	24,000	565,000,000	<b>5.7</b>
<b>Kilifi</b>	825	18,166	475,718,000	979	19,412	451,198,174	<b>4.6</b>
<b>Migori</b>	410	12,849	326,236,005	279	5,003	204,020,800	<b>2.1</b>
<b>Nyamira</b>	209	3,345	210,110,000	123	3,378	126,030,000	<b>1.3</b>
<b>Meru</b>	230	3,840	127,200,000	217	3,854	84,060,000	<b>0.8</b>
<b>Busia</b>	74	1,940	75,430,000	69	1,525	64,600,000	<b>0.7</b>
<b>Kisii</b>	39	1,010	37,500,000	171	2,794	62,597,500	<b>0.6</b>
<b>Kwale</b>	167	3,057	44,340,000	206	2,844	42,060,000	<b>0.4</b>
<b>Bomet</b>	64	3,200	64,000,000	32	1,604	35,080,000	<b>0.4</b>
<b>Vihiga</b>	15	189	8,970,000	37	945	31,616,000	<b>0.3</b>
<b>Siaya</b>	54	532	37,310,000	54	432	27,601,680	<b>0.3</b>
<b>Nandi</b>	48	1,230	36,950,000	39	744	19,080,000	<b>0.2</b>



<b>Bungoma</b>	24	513	21,800,000	25	337	17,700,000	<b>0.2</b>
<b>Others</b>	220	2,576	97,735,475	234	2,941	80,482,180	<b>0.8</b>
<b>Total</b>	<b>10,263</b>	<b>359,467</b>	<b>9,058,677,980</b>	<b>10,757</b>	<b>369,931</b>	<b>9,902,687,834</b>	<b>100.0</b>

#### **4.1.11 Pawpaw (*Carica papaya*)**

Pawpaw is mainly grown for the domestic market. In year 2018, pawpaw contributed Ksh. 3.02 billion up from Ksh. 2.75 billion in 2017 accounting for 10 percent increase. The area decreased by 4 percent and production increased by 4,004 tones which translate to 4 percent increase. The increased production was attributed to adequate rainfall of 2018, however in the recent past, the area under production has been reducing due to destruction by Papaya ring spot virus and red spider mite infestation.

Apart from spider mites and papaya ring spot virus, the other major challenge facing pawpaw production is lack of quality planting material arising from genetic erosion due to open pollination.

Pawpaw is mainly grown in the arid and semi- arid counties. The leading counties in pawpaw by value in 2018 were Kilifi, Machakos, Makueni, and Meru. The main varieties grown include Mountain, Solo, Sunrise, Honey dew and Hawaii. Other varieties include Red Royal, Sunrise hybrid and Perkerra.

**Table 64: Production of Pawpaw in Major counties 2017-2018**

COUNTY	2017			2018			% Of total
	Area (Ha)	Volume (Tons)	Value (Kshs)	Area (Ha)	Volume (Tons)	Value (Kshs)	
<b>Kilifi</b>	933	10,612	351,527,000	829	10,182	327,815,060	<b>10.9</b>
<b>Machakos</b>	1,638	14,283	287,950,000	1,397	12,072	316,890,000	<b>10.5</b>
<b>Makueni</b>	536	9,441	234,074,960	717	10,740	296,250,000	<b>9.8</b>
<b>Meru</b>	346	7,896	241,440,000	363	7,525	256,735,000	<b>8.5</b>
<b>Lamu</b>	380	5,516	207,875,000	430	6,600	248,200,000	<b>8.2</b>
<b>Tharaka Nithi</b>	954	7,708	134,170,000	920	6,775	174,850,000	<b>5.8</b>
<b>Migori</b>	417	5,721	111,594,000	241	3,770	133,194,531	<b>4.4</b>
<b>E Marakwet</b>	199	3,274	101,527,173	215	3,291	126,707,536	<b>4.2</b>

<b>Kwale</b>	505	5,105	60,550,000	700	10,330	112,800,000	<b>3.7</b>
<b>Kitui</b>	228	1,822	68,976,000	279	3,108	105,937,500	<b>3.5</b>
<b>Embu</b>	441	3,608	68,087,500	538	4,313	96,812,500	<b>3.2</b>
<b>Murang'a</b>	180	1,707	82,534,820	229	2,050	94,785,670	<b>3.1</b>
<b>Kirinyaga</b>	231	2,066	24,360,450	210	4,219	92,855,000	<b>3.1</b>
<b>Homabay</b>	357	2,016	52,435,000	313	3,353	73,381,250	<b>2.4</b>
<b>Tana River</b>	230	2,877	54,915,000	274	3,336	54,600,000	<b>1.8</b>
<b>Mandera</b>	166	1,609	95,455,000	168	1,692	52,083,333	<b>1.7</b>
<b>Baringo</b>	171	2,214	63,180,000	155	2,156	46,550,000	<b>1.5</b>
<b>Others</b>	1,596	17,958	513,055,845	1,128	13,925	409,973,155	<b>13.6</b>
<b>Total</b>	<b>9,507</b>	<b>105,432</b>	<b>2,753,707,748</b>	<b>9,105</b>	<b>109,436</b>	<b>3,020,420,535</b>	<b>100.0</b>

#### **4.1.12 Water Melon (*Cucumis melo* sp.)**

Melon is one of the most popular fruits in Kenya. The area under melons increased by 486 Ha, producing 149,693Tons valued at Kshs 3.66 billion. The area, production and value increased by 13, 7 and 8 percent respectively in 2018.

Melons are mainly grown in arid and semi-arid counties. Irrigation and use of hybrid seeds has also contributed to high productivity of this crop. The main producing counties were Tana River, Lamu, Machakos and Baringo that led in value.

Major challenges in melon production are pests and diseases. Some common pests include melon fruit fly, aphids and thrips and disease is powdery mildew.

**Table 65: Production of Water Melons in major Counties 2017- 2018**

COUNTY	2017			2018			% Of total
	Area (Ha)	Volume (Tons)	Value (Kshs)	Area (Ha)	Volume (Tons)	Value (Kshs)	
<b>Tana River</b>	440	11,647	254,478,000	753	21,000	410,560,000	<b>11.4</b>
<b>Lamu</b>	1,102	16,537	462,267,350	917	16,760	376,840,000	<b>10.4</b>

<b>Machakos</b>	1,363	13,618	366,460,000	1,390	13,925	338,774,000	<b>9.4</b>
<b>Baringo</b>	379	7,606	156,670,000	708	14,164	284,780,000	<b>7.9</b>
<b>Migori</b>	384	9,574	220,950,110	320	9,350	223,362,001	<b>6.2</b>
<b>Kirinyaga</b>	237	7,360	201,100,000	248	7,640	219,061,971	<b>6.1</b>
<b>Kajiado</b>	143	3,157	93,255,000	328	6,770	175,400,740	<b>4.9</b>
<b>Homabay</b>	299	6,539	180,450,000	322	7,177	170,970,000	<b>4.7</b>
<b>Meru</b>	206	5,239	114,289,728	228	5,786	161,300,000	<b>4.5</b>
<b>Makueni</b>	409	10,385	242,240,000	339	6,115	138,140,000	<b>3.8</b>
<b>Kitui</b>	122	2,250	45,740,000	219	5,335	122,280,000	<b>3.4</b>
<b>Mandera</b>	200	2,200	121,000,000	200	2,600	104,000,000	<b>2.9</b>
<b>Taita Taveta</b>	105	2,729	83,351,250	99	2,620	103,012,000	<b>2.8</b>
<b>Kisumu</b>	113	2,783	89,550,000	106	2,533	82,250,000	<b>2.3</b>
<b>Elgeyo Marakwet</b>	183	3,360	84,797,338	197	3,638	67,838,000	<b>1.9</b>
<b>Garissa</b>	186	1,814	65,352,000	171	1,683	64,380,000	<b>1.8</b>
<b>Others</b>	1,537	25,358	576,115,005	1,351	22,597	572,521,027	<b>15.8</b>
<b>Total</b>	<b>7,409</b>	<b>132,155</b>	<b>3,358,065,781</b>	<b>7,895</b>	<b>149,693</b>	<b>3,615,469,738</b>	<b>100.0</b>

#### **4.1.13 Loquats (*Eriobotrya japonica*)**

Loquat is mainly grown for household consumption and a little surplus finds its way to the local market. During the year under review the area and volumes decreased slightly from 166ha to 159 and 1,201, tons 1,118 tons respectively. The value increased from 20 Milion to 26 Milion a 29 percent increase. The major counties in production of loquat by value were Meru, Kiambu and Kisumu accounting for 163, 15.9 and 11.5 percent respectively of the country's total value. The major constraints of loquat are prevalence of insect pests and diseases and lack of market.

**Table 66: Production of Loquats in major Counties 2017- 2018**

COUNTY	2017			2018			% Of total
	Area (Ha)	Volume (Tons)	Value (Kshs)	Area (Ha)	Volume (Tons)	Value (Kshs)	
<b>Meru</b>	25	284	6,400,000	17	190	4,236,012	<b>16.3</b>

<b>Kiambu</b>	19	69	2,220,000	17	30	4,150,000	<b>15.9</b>
<b>Kisumu</b>	9	280	250,000	10	300	3,000,000	<b>11.5</b>
<b>Uasin Gishu</b>	4	62	2,160,000	5	80	2,970,000	<b>11.4</b>
<b>Makueni</b>	10	105	2,075,000	11	125	2,475,000	<b>9.5</b>
<b>Vihiga</b>	15	71	2,112,000	15	82	2,216,000	<b>8.5</b>
<b>Nakuru</b>	16	78	1,058,102	11	50	1,690,001	<b>6.5</b>
<b>Bungoma</b>	9	90	940,000	9	90	1,400,000	<b>5.4</b>
<b>Kisii</b>	9	50	975,000	4	20	1,160,000	<b>4.5</b>
<b>Nyeri</b>	3	13	144,741	12	60	1,114,000	<b>4.3</b>
<b>Others</b>	47	99	1,877,000	48	93	1,642,000	<b>6.3</b>
<b>Total</b>	<b>166</b>	<b>1,201</b>	<b>20,211,843</b>	<b>159</b>	<b>1,118</b>	<b>26,053,013</b>	<b>100.0</b>

### **3.1.17: TREE TOMATO (*Cyphomandrabetacea*)**

Tree tomato also known as Tamarillo is an emerging cash crop in Kenya. The main varieties grown in Kenya are the Gold-mine, Inca red, Rothamer, Solid gold and Ruby Red. Tree tomatoes are gaining popularity in the urban centers due to the health benefits associated with it. The fruits are eaten fresh when ripe or processed into juice.

The area under production was 927 Ha in 2018, a 1 percent increase from 918 Ha in 2017. Productivity increased by 8 percent from 10,201 MT in 2017 to 10,948 MT in 2018. The value was 459 million in 2018.

A major challenge in tree tomato production is infestation by red spider mites. The crop is also affected by aphids which can be vectors of virus diseases. Access to quality and high yielding planting materials is a major challenge facing farmers.

The top five tree tomato producing counties are Kiambu, Narok, Kirinyaga, Nakuru and Nyandarua in 2018.

**Table 68: Production of Tamarilo in major Counties 2017- 2018**

COUNTY	2017			2018			% Of total
	Area (Ha)	Volume (Tons)	Value (Kshs)	Area (Ha)	Volume (Tons)	Value (Kshs)	
<b>Narok</b>	102	2,028	70,305,005	101	1,969	172,015,000	<b>34.0</b>
<b>Nyeri</b>	21	138	8,242,484	42	266	16,450,500	<b>12.5</b>
<b>Kirinyaga</b>	50	764	22,640,000	60	1,296	59,860,000	<b>11.8</b>
<b>Kiambu</b>	145	2,673	150,136,200	91	990	49,515,500	<b>9.8</b>
<b>Nyandarua</b>	68	520	22,690,000	83	555	22,290,060	<b>4.4</b>
<b>Homabay</b>	40	400	20,000,000	44	450	21,000,000	<b>4.2</b>
<b>Nakuru</b>	131	1,075	39,633,571	74	388	19,805,000	<b>3.9</b>
<b>Laikipia</b>	33	374	9,288,000	30	328	13,620,000	<b>2.7</b>
<b>Meru</b>	15	198	7,221,000	48	371	13,030,000	<b>2.6</b>
<b>Uasin Gishu</b>	9	63	3,146,600	28	234	11,705,600	<b>2.3</b>
<b>Baringo</b>	47	230	7,796,735	38	304	11,236,000	<b>2.2</b>
<b>Tharaka Nithi</b>	12	158	10,190,000	12	156	10,070,000	<b>2.0</b>
<b>Murang'a</b>	44	123	7,352,000	55	171	9,949,250	<b>2.0</b>
<b>Elgeyo Marakwet</b>	81	603	12,079,800	22	207	6,255,000	<b>1.2</b>
<b>Nandi</b>	2	8	375,000	12	90	5,195,000	<b>1.0</b>
<b>Bomet</b>	10	200	8,000,000	7	130	5,100,000	<b>1.0</b>
<b>Makueni</b>	10	200	4,000,000	12	240	4,800,000	<b>0.9</b>
<b>Others</b>	92	446	7,830,300	53	339	7,434,000	<b>1.5</b>
<b>Total</b>	<b>918</b>	<b>10,201</b>	<b>410,926,695</b>	<b>927</b>	<b>10,984</b>	<b>459,330,910</b>	<b>100.0</b>

#### 4.1.14 Guavas

Guava is grown for fresh consumption and processing of juice. The area under production, volume and value decreased by 9, 11 and 8 percent respectively in 2018 compared to 2017. The leading guava growing counties in 2018 were Homabay, Kisumu and Makueni contributing to 87, 6 and 2 percent of the total value.

There is lack of commercialization in guava that has attributed to decline in production due to neglect of orchards.

**Table 69: Production of Guavas in selected counties 2017-2018**

COUNTY	2017			2018			% Of total
	Area (Ha)	Volume (Tons)	Value (Kshs)	Area (Ha)	Volume (Tons)	Value (Kshs)	
Homabay	5,844	87,440	876,600,000	5,030	75,300	765,000,000	87.0
Kisumu	16	128	1,920,000	110	1,950	53,700,000	6.1
Makueni	40	800	16,000,000	41	820	16,400,000	1.9
Siaya	408	2,008	8,800,000	403	1,808	9,400,000	1.1
Kilifi	204	615	9,225,000	204	615	9,225,000	1.0
Vihiga	60	278	5,445,000	93	307	3,330,000	0.4
Bungoma	11	80	2,650,000	18	55	2,500,000	0.3
Kiambu	12	118	4,350,000	5	60	2,400,000	0.3
Taita taveta	4	57	752,000	35	165	2,379,050	0.3
Kisii	13	102	2,011,250	10	100	2,000,000	0.2
Nyamira	10	100	2,000,000	10	90	1,800,000	0.2
Mandera	35	350	17,500,000	35	140	1,748,000	0.2
Trans nzoia	16	80	900,000	18	120	1,200,000	0.1
Embu	17	120	1,200,000	17	120	1,200,000	0.1
Isiolo	4	16	480,000	7	35	1,050,000	0.1
Others	120	379	6,721,949	155	439	6,351,731	0.7
Total	6,814	92,670	956,555,199	6,191	82,125	879,683,781	100.0

## 4.2 NATIONAL SUMMARY

The total area under production in 2018 was **399,775ha** up from **383,407ha** achieved in 2017 while production was **6,283,699tons** compared to **5,885,682tons** that was produced in 2017. The value increased from **kshs122,108Billion** to **132.383Billion**. This was a 4.3 percent increase in area, 6.8 percent increase in production and 8.4 per cent increase in value from what was achieved in 2017.

**Table 70: Leading horticultural crops performance for 2017-2018**

Crop	Year 2017			Year 2018			% of Total Value
	Area (Ha)	Volume (MT )	Value(KES)	Area (Ha)	Volume (MT	Value ( KES)	
Banana	69,376	1,357,162	20,382,744,592	68,248	1,419,176	22,237,751,288	<b>16.81</b>
Tomatoes	27,053	507,275	17,379,279,182	28,263	574,458	19,903,552,256	<b>15.04</b>
Mango	50,550	705,195	11,713,206,615	48,541	746,377	12,846,113,214	<b>9.71</b>
Pineapple	10,263	359,467	9,058,677,980	10,757	369,931	9,902,687,834	<b>7.48</b>
Kales	30,687	491,815	7,976,519,848	35,034	600,766	9,583,285,962	<b>7.24</b>
Cabbage	26,807	713,360	8,604,558,042	22,892	620,523	7,646,157,500	<b>5.78</b>
Avocado	15,353	297,122	5,638,000,680	16,501	318,087	5,972,104,428	<b>4.51</b>
Bulb Onions	6,479	101,955	4,539,546,087	7,001	105,585	4,096,410,715	<b>3.10</b>
Water melons	7,409	132,155	3,358,065,781	7,895	149,693	3,615,469,738	<b>2.73</b>
French beans	6,220	42,596	2,052,370,850	7,942	66,765	3,309,256,570	<b>2.50</b>
Pawpaw	9,507	105,432	2,753,707,748	9,105	109,436	3,020,420,535	<b>2.28</b>
Garden peas	22,178	88,917	3,291,242,474	22,840	88,685	2,992,671,573	<b>2.26</b>
Spinach	6,478	121,997	2,212,692,098	9,163	169,356	2,890,646,508	<b>2.18</b>
Cow peas	31,353	79,345	2,335,372,492	36,745	119,326	2,495,426,701	<b>1.89</b>
African night shade	4,634	48,643	1,817,129,275	6,849	68,828	2,378,251,829	<b>1.80</b>
Orange	7,661	77,437	2,223,314,560	8,332	93,321	2,360,678,031	<b>1.78</b>
Carrot	6,339	199,172	1,801,710,977	6,305	199,019	1,720,446,255	<b>1.30</b>
Snowpeas	2,590	18,399	1,403,230,874	2,866	22,786	1,672,493,373	<b>1.26</b>
Purple Passion	2,157	34,320	1,237,582,081	2,296	21,821	1,128,937,640	<b>0.85</b>

<b>Spider plants</b>	3,427	27,299	1,054,324,056	3,758	28,932	1,051,113,259	<b>0.79</b>
<b>Leaf Amaranth</b>	2,277	23,079	788,770,073	3,264	31,843	927,658,213	<b>0.70</b>
<b>Guavas</b>	6,814	92,670	956,555,199	6,191	82,125	879,683,781	<b>0.66</b>
<b>Coriander</b>	610	7,745	668,991,503	707	7,070	668,520,308	<b>0.51</b>
<b>Spring Onions</b>	2,530	20,319	508,497,192	3,448	35,340	618,017,755	<b>0.47</b>
<b>Pumpkin fruit</b>	1,293	21,993	568,311,788	1,380	24,267	569,098,694	<b>0.43</b>
<b>Tamarillo</b>	1,844	11,983	463,389,069	1,743	10,161	505,931,730	<b>0.38</b>
<b>Okra</b>	1,344	9,734	459,721,613	1,396	10,671	463,641,693	<b>0.35</b>
<b>Rosemary</b>	561	8,381	429,768,090	567	8,270	422,562,797	<b>0.32</b>
<b>Yellow Passion</b>	947	10,072	346,113,746	1,075	12,153	388,578,238	<b>0.29</b>
<b>Asparagus</b>	639	5,511	332,897,083	709	4,820	374,901,524	<b>0.28</b>
<b>Bell pepper</b>	1,105	7,414	328,678,975	1,167	7,894	372,752,337	<b>0.28</b>
<b>Butternuts</b>	949	18,929	432,957,308	920	18,787	362,496,450	<b>0.27</b>
<b>Snap peas</b>	538	4,657	254,496,500	626	4,328	339,686,124	<b>0.26</b>
<b>Slender</b>	521	6,789	294,698,000	767	7,092	302,511,741	<b>0.23</b>
<b>Garlic</b>	241	2,712	249,975,000	282	3,113	279,539,575	<b>0.21</b>
<b>Tangerines</b>	1,441	13,906	325,861,030	1,134	11,807	259,266,701	<b>0.20</b>
<b>Broccoli</b>	428	4,378	217,554,455	509	4,886	251,710,000	<b>0.19</b>
<b>Egg plant</b>	1,151	12,607	301,381,793	900	9,059	251,337,642	<b>0.19</b>
<b>Babycorn</b>	1,392	10,194	167,135,002	1,287	15,095	244,309,103	<b>0.18</b>
<b>Lemons</b>	1,462	11,485	237,510,140	1,488	11,722	243,752,592	<b>0.18</b>
<b>Long cayenne</b>	504	5,476	194,569,332	558	6,568	219,583,800	<b>0.17</b>
<b>Others</b>	8,295	66,585	2,746,985,152	8,324	63,757	2,557,508,634	<b>1.93</b>
<b>Total</b>	<b>383,407</b>	<b>5,885,682</b>	<b>122,108,094,335</b>	<b>399,775</b>	<b>6,283,699</b>	<b>132,326,924,641</b>	<b>100.00</b>

**NB: This is exclusive of Cut flowers that are valued at FOB prices**



