

HORTICULTURE



VALIDATED REPORT 2016-2017



AGRICULTURE AND FOOD AUTHORITY
HORTICULTURAL CROPS DIRECTORATE



Foreword

The Horticultural Crops Directorate (HCD) of the Agriculture and Food Authority (AFA), in conjunction with industry stakeholders undertook a data validation exercise on the performance of the horticulture subsector in the period 2016 and 2017. The findings are presented in this report, which covers the performance of the fruits, vegetables and flowers grown in all the Counties. The performance of the sub-sector is important considering that it provides income, food security and foreign exchange to the economy. The data provided herein is obtained from the sub-County level by the Sub-County agriculture staff, hence improving country-wide representation. 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.

The main challenge remains the non-standardized methodology of collecting the data at the county level, sometimes giving notable variations in production per unit area and average farm gate prices within neighboring Sub-Counties. Data validation is undertaken by a multi-disciplinary team which is able to interrogate anomalies in submissions made in order to improve on accuracy. Another notable challenge was under-reporting for some crops particularly those grown by large-scale estates. Sub-county agriculture staffs generally do not have access to these estates and are therefore unable to vouch for the statistics provided.

Overall, there is need to develop the capacity of the data validation team as well as that of the county extension staff to enhance the validity of the data collected.

Acknowledgement

This report is a product of wide consultations among horticulture sector stakeholders whose input has been invaluable.

Special acknowledgement goes to the Kenya National Bureau of Statistics (KNBS), which provided financial and technical support towards data collection from the counties. Members of the data validation team drawn from the Ministry of Agriculture, Livestock and Fisheries (MoALF) and are herewith acknowledged.

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 offered vital support in availing data for scrutiny and organizing meetings to deliberate respective reports. This support is highly acknowledged.

With the guidance and facilitation of Mr. Nehemiah Chepkwon the Interim Head of Directorate, the coordination of data collection and compilation of this report was undertaken by a team of dedicated technical officers - Grace Kyallo, the Interim Manager Technical and Advisory Services James Kamau Paul, Gilbert Kipyegon, Jemimah Ndabarua and Caleb Yatich of HCD; John G. Mburu 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.

James Kamau Paul

Methodology

The data collection exercise was preceded by development of data capturing templates. The templates were forwarded to the County Directors of Agriculture prior to the field visits. The data validation team was trained on the use of the templates and data collection procedures prior to the field visits.

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. A workshop was the convened to clean out the data and subject it to analytical tools.

The report generated from the workshop was discussed and validated by stakeholders before production of the 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

1 CHAPTER ONE

1.1 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 2017 amounted to Ksh236.45 Billion compared to 213.11 Billion in 2016; this is equivalent to an increase of 11 percent. Over the same period, cultivated area increased by 7 percent from 546,936 Ha to 584,597 Ha with a total production of 8.589 Million Tons in 2017 compared to 7.89 million tons in 2016. This was a 9 percent increase in production that was attributed to improved production and farm gate prices.

Table 1: Summary of Performance of Horticultural products per category for the years 2016-2017

Crop	YEAR 2016			YEAR 2017			%of Total Value
	Area (Ha)	Volume (MT)	Value(KES)	Area (Ha)	Volume (MT	Value (KES)	
Cut Flowers	13,265	133,658	70,829,466,905	13,265	159,961	82,248,862,888	34.8
Exotic Veg	283,615	4,145,900	72,207,881,315	295,089	4,404,171	75,494,122,090	32.0
Fruits	163,624	3,039,773	53,243,534,127	185,211	3,396,582	60,737,692,228	25.7
Indigenous Veg	63,314	229,492	6,831,329,005	66,879	265,267	8,010,604,378	3.4
Summer flowers	8,257	194,284	3,453,496,751	8,267	198,358	3,487,496,127	1.5
Aromatic	12,383	124,642	5,791,117,070	12,359	129,253	5,204,057,996	2.2
Asian Veg	1,980	19,043	632,104,760	3,067	32,292	938,043,881	0.4
Medicinal	498	3,989	125,650,500	460	3,492	128,330,500	0.1
Total	546,936	7,890,781	213,114,580,433	584,597	8,589,376	236,249,210,088	100.0

Source: HCD

1.2 Review of Performance of Horticultural Crops by Category

1.2.1 Floriculture

In 2017, floriculture contributed Ksh82.248 billion up from 70.829 in 2016. This was a 16 percent increase in value or 11.42 billion as compared with the year 2016. The volume increased from 133,658,334 tons in 2016 to 159,961,194 tons in 2017 representing 20 percent increase.

Table 2: Performance of Flowers in 2015-2017

Flower Type	2016		2015		2017		%of Total Value
	Volume (Kilograms)	Value (KES)	Volume (Kilograms)	Value (KES)	Volume (Kilograms)	Value (KES)	
Roses	132,767,950	44,205,855,724	114,285,596	50,384,447,171	132,767,950	57,506,227,038	69.9
Cuttings	2,609,222	8,710,295,551	1,362,282	8,797,717,890	3,113,738	10,887,146,831	13.2
Mixed Flowers	2,913,116	1,730,486,138	5,487,176	2,850,841,279	9,846,092	6,340,022,717	7.71
Gypsophilla / Million Stars	1,602,302	601,446,431	1,624,830	793,626,398	2,265,958	1,551,458,270	1.89
Carnation / Dianthus	3,085,351	1,880,241,293	2,741,710	1,321,319,154	2,146,707	1,090,117,908	1.33
Hypericum	1,399,608	738,303,338	1,792,984	705,354,785	1,970,048	933,880,990	1.14
Statice/Limonium	802,623	273,115,176	1,015,230	2,545,315,319	719,525	696,822,222	0.85
Alstroemeria	891,350	405,560,676	1,205,935	496,493,977	1,674,082	630,441,621	0.77
Solidago	736,624	451,867,391	736,624	405,494,583	796,050	335,323,196	0.41
Pelargonium Cuttings	14,472	24,170,197	22,151	50,382,485	29,628	334,874,062	0.41
Veronica	406,498	125,920,308	353,907	134,804,345	924,660	276,623,955	0.34
Hydrangea	198,791	95,617,963	398,913	199,139,017	427,721	274,372,991	0.33
Calla Lillies	236,197	257,757,724	272,128	214,464,762	579,058	270,902,916	0.33
Eryngium	195,130	96,206,647	223,304	111,023,898	248,206	162,104,547	0.20
DELPHINIUM	67,854	30,373,330	26,392	15,281,484	239,911	112,018,384	0.14
Chrysanthemums	126,875	83,057,690	250,120	560,612,019	702,199	107,916,488	0.13
Mathiola	285,278	183,102,212	249,876	139,919,488	172,283	104,056,930	0.13
Geranium Cuttings	14,607	1,888,000,778	22,292	382,718,114	2,410	91,042,779	0.11
Lilies/Longiflora	331,240	245,080,827	276,721	159,407,134	139,225	76,920,137	0.09
Others	122,125,850	911,073,019	1,310,162	561,103,602	1,195,742	466,588,906	0.57
TOTAL	122,862,474	62,937,532,413	133,658,334	70,829,466,905	159,961,194	82,248,862,888	100

1.2.2 Exotic Vegetables

In 2017, the area under Exotic vegetables increased from 283,615ha to 295,089 ha while, production increased from 4,145,900tons to 4,404,171tons representing 4.0 and 6.2 percent increase respectively. The value on the other hand increased from Kshs72, 208billion in 2016 to Kshs75.494 in 2017 a 4.6percent increase. The leading vegetables in production and value were Irish potatoes, tomatoes and cabbages accounting for 45.32, 20.13 and 11.02 percent respectively of the total value of exotic vegetables.

Table 3: Summary of Performance of Exotic Vegetables in 2016-2017

Crop	2016			2017			% of Total Value
	Area (Ha)	Volume (MT)	Value(KES)	Area (Ha)	Volume (MT	Value (KES)	

Potatao	155,929	2,178,315	31,799,178,942	164,231	2,382,799	34,213,641,976	45.32
Tomato	24,111	341,026	13,687,162,311	29,294	509,465	15,199,459,224	20.13
Cabbage	26,931	775,994	9,667,526,306	24,303	671,139	8,322,940,003	11.02
Kales	32,347	435,121	6,615,870,235	30,534	413,599	5,942,132,348	7.87
Gardern peas	21,151	105,934	3,250,538,967	22,289	109,416	3,657,515,632	4.84
Carrots	6,106	93,860	1,468,289,712	6,744	96,968	1,763,089,803	2.34
French beans	5,948	46,222	1,968,975,817	5,682	45,263	2,060,156,025	2.73
Spinach	6,359	128,947	1,879,393,574	6,977	129,730	2,108,989,995	2.79
Snow peas	1,951	11,784	710,907,000	2,049	14,627	967,559,848	1.28
Butter nuts	926	12,506	394,137,141	967	14,258	461,096,308	0.61
Snap peas	385	2,708	139,797,300	395	2,988	145,170,200	0.19
Baby corn	367	3,612	91,361,960	464	3,457	81,587,604	0.11
Lettuce	120	2,184	47,282,050	122	2,392	59,819,500	0.08
Brocolli	63	757	29,768,000	84	874	34,341,000	0.05
Cauliflower	54	565	17,122,000	69	723	25,996,500	0.03
Runner beans	757	5,272	400,786,000	757	5,299	404,045,700	0.54
Beetroots	84	634	25,186,000	100	707	31,685,424	0.04
Celery	26	459	14,598,000	28	467	14,895,000	0.02
Total	283,615	4,145,900	72,207,881,315	295,089	4,404,171	75,494,122,090	100.00

1.2.3 Fruit Production

In 2017, fruits contributed Ksh60.737 billion. The area under fruit was 185,211Ha with a production of 3.39 million tons. The area production and value increased by 1 percent, 12 percent and 14 percent, respectively. The major fruits grown in order of importance were; banana, mangoes, pineapples, avocado, pawpaw, water melon, oranges and passion fruit.

Table 4: Performance of Fruit in 2016-2017

CROP	YEAR 2016			YEAR 2017			% of Total Value
	Area (Ha)	Volume (MT)	Value(KES)	Area (Ha)	Volume (MT	Value (KES)	
Bananas	63,299	1,288,588	16,977,130,503	76,608	1,586,792	21,778,033,350	35.86
Mango	49,098	781,147	11,892,258,419	50,550	705,195	11,713,206,615	19.28
Pineapples	8,956	376,811	10,939,497,861	9,239	403,055	10,977,753,692	18.07
Avocado	13,017	246,057	4,632,454,856	14,992	287,268	5,413,241,240	8.91
Pawpaw	8,112	107,591	2,205,138,840	9,907	135,924	3,020,362,099	4.97
Water Melon	6,345	87,307	1,966,293,771	7,017	119,991	2,897,394,293	4.77
Oranges	7,268	85,234	2,166,297,973	8,976	89,542	2,408,321,080	3.97
Purple Passion	2,151	22,031	1,058,742,346	2,096	17,561	920,712,317	1.52

Tamarillo	863	8,158	412,670,375	918	10,089	434,974,195	0.72
Tangerines	891	8,087	160,137,640	1,247	12,775	299,961,712	0.49
Apples	473	4,778	222,183,500	474	4,686	275,432,000	0.45
Lemon	1,346	11,618	215,841,968	1,361	10,764	217,863,354	0.36
Yellow Passion	751	5,203	176,604,495	639	4,422	134,222,101	0.22
Guava	412	3,027	66,565,775	500	3,328	79,980,877	0.13
Strawberry	34	447	67,100,800	43	427	65,958,368	0.11
Plums	216	1,971	31,064,887	233	2,282	36,948,410	0.06
Custard Apple	132	609	14,058,004	127	1,171	22,956,577	0.04
Loquats	168	769	15,646,560	185	908	16,778,112	0.03
Grapes	46	147	14,525,000	46	138	13,624,000	0.02
White Sapote	46	193	9,320,554	53	264	9,967,836	0.02
Total	163,624	3,039,773	53,243,534,127	185,211	3,396,582	60,737,692,228	100.00

1.2.4 Indigenous Vegetables (African Leafy Vegetables)

The preference for the indigenous vegetable popularly known as African leafy vegetables (ALVs) has been on the increase because of increased awareness on the health and nutritional benefits.

During 2017 the area under these vegetables increased by 6 percent from 63,314ha to 66,879ha. The yields and value increased from 229,492tons to 265,267tons and Kshs6.83billion to Kshs8.01billion a 16 and 17percent increase respectively. In this category of vegetables, Cow peas contributed 38.97percent followed by African Nightshade and spider plant that contributed 23.75 and 12.41 percent respectively.

Table 5: Production of Indigenous vegetables for the year 2016-2017

County	Year 2016			Year 2017			% of Total Value
	Area (Ha)	Volume (MT)	Value(KES)	Area (Ha)	Volume (MT	Value (KES)	
Cow peas	50,357	124,957	2,942,678,963	52,199	135,116	3,121,462,213	38.97
African night shade	4,285	38,757	1,607,628,095	4,615	43,794	1,902,495,754	23.75
Spider plants	2,854	15,128	579,399,199	3,285	24,055	993,915,145	12.41
Pumpkin fruit	1,164	16,349	511,767,494	1,394	20,698	575,680,191	7.19
Leaf Amarathus	1,867	15,760	479,795,068	2,053	17,979	575,291,185	7.18
Slender	403	4,052	193,430,500	641	7,104	228,546,000	2.85
Jute mallow	842	5,384	161,993,950	937	5,829	189,044,400	2.36
Pumpkin leaves	711	5,553	126,849,112	821	6,546	146,024,400	1.82
Grain amaranth	500	1,594	113,493,624	487	1,474	137,069,000	1.71
Vine spine	103	1,520	66,712,000	208	2,268	91,609,000	1.14
Tunguja	160	150	42,000,000	168	160	44,000,000	0.55
Malabor	20	65	2,261,000	23	72	2,464,090	0.03
Stinging neetle	46	98	2,093,000	46	107	2,378,000	0.03

Russian	2	125	1,227,000	2	65	625,000	0.01
Total	63,314	229,492	6,831,329,005	66,879	265,267	8,010,604,378	100.00

1.2.5 Aromatic Plants

Aromatics crops accounted for of the total value of horticultural products by value. The area under production decreased from 12,383ha in 2016 to 12,359ha in 2017 a 0.2percent drop while the value dropped from 5.79billion to 5.20billion a 10.1percent decline due to depressed farm gate prices of bulb onions. Production on the other hand increased from 124,642 tons in 2016 to 129,253 tons in 2017 representing a 3.7 percent increase. The leading crops in this category were Bulb onions, spring onions, bell pepper, Coriander and garlic accounting for 68.38, 10.63, 5.12, 3.48 and 3.34percent respectively.

Table 6: Summary of the performance of Aromatics for the years 2016-2017

County	Year 2016			Year 2017			% of Total Value
	Area (Ha)	Volume (MT)	Value(KES)	Area (Ha)	Volume (MT	Value (KES)	
Bulb onion	7,205	82,202	4,365,720,329	6,590	80,602	3,558,538,599	68.38
Spring onion	1,846	17,582	454,578,681	2,259	21,831	553,354,135	10.63
Coriander	1,153	6,165	177,913,348	1,218	6,372	180,851,071	3.48
Bell pepper	648	4,046	196,667,193	776	5,008	266,451,504	5.12
Leeks	334	3,360	62,398,240	297	3,221	67,136,751	1.29
Long cayenne	327	2,821	151,814,204	331	3,258	162,572,075	3.12
African Birds Eye	87	1,297	74,698,000	112	1,648	91,789,500	1.76
Bullet chillies	135	799	40,403,160	132	820	41,256,885	0.79
Chives	32	192	13,524,900	43	283	20,661,070	0.40
Celery	21	339	11,704,275	25	452	15,308,000	0.29
Garlic	223	2,204	171,020,000	254	2,379	173,700,000	3.34
Rosemary	334	3,360	62,398,240	297	3,221	67,136,751	1.29
Tumeric	7	140	1,404,500	3	60	605,600	0.01
Ginger	19	64	3,285,000	8	22	930,055	0.02
Parsley	8	47	2,187,000	8	49	2,397,000	0.05
Mint	4	24	1,400,000	6	27	1,369,000	0.03
Total	12,383	124,642	5,791,117,070	12,359	129,253	5,204,057,996	100.0

1.2.6 Asian Vegetables

Asian vegetables are grown for sale to the Asian community living in Kenya as well as for the export market. During the period under review, the area under production increased by 55percent from 1,980 Ha in 2016 to 3,067 Ha in 2017 while production increased by 70 percent

from 19,043 tons to 32,292 tons in 2017. The value of the vegetables increased from Kshs632.1 million in 2016 to Kshs938.04 million in 2017 representing a 48 percent increase.

Table 7: Performance of Asian Vegetables in 2016-2017

County	Year 2016			Year 2017			% of Total Value
	Area (Ha)	Volume (MT)	Value(KES)	Area (Ha)	Volume (MT)	Value (KES)	
Egg plant	689	7,630	240,823,530	996	11,381	329,311,082	35.1
Karella	642	6,668	190,131,030	1,262	14,185	307,197,082	32.7
Okra	506	3,793	167,687,040	663	5,740	272,217,013	29.0
Dudhi	104	797	26,191,600	108	827	27,111,600	2.9
Valore	30	115	4,624,560	35	143	1,732,104	0.2
Tindori	9	40	2,647,000	3	16	475,000	0.1
Total	1,980	19,043	632,104,760	3,067	32,292	938,043,881	100.0

1.2.7 Medicinal Plants

During the period under review, medicinal plants showed a decrease in the area under production as well as the quantity produced from 490ha in 2016 to 460ha and 3,989 tons to 3,492 tons. This decrease is attributed low replanting. The crop value however increased from Ksh125 Million to Ksh128 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 8: Performance of Medicinal Plants in 2016-2017

Crop	Year 2016			Year 2017			% of Total Value
	Area (Ha)	Volume (MT)	Value(KES)	Area (Ha)	Volume (MT)	Value (KES)	
Tunguja	148	1,696	70,800,000	148	1,696	70,800,000	55
Curci	240	1,944	36,627,500	183	1,244	31,640,000	25
Aloe	12	126	3,691,000	41	240	11,208,000	9
Stevia	72	99	10,394,000	46	87	8,620,000	7
Bixa	16	75	1,880,000	26	172	3,660,000	3
Moringa	9	37	1,225,500	15	41	1,370,000	1
Methi	2	13	1,032,500	2	13	1,032,500	1
Total	498	3,989	125,650,500	460	3,492	128,330,500	100

Table 9: Horticulture Production by top 24 Crops, 2016-2017

Crop	Year 2016	Year 2017	
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	Area (Ha)	Volume (MT)	Value(KES)	Area (Ha)	Volume (MT	Value (KES)	% of Total Value
Irish Potatoes	155,929	2,178,315	31,799,178,942	164,231	2,382,799	34,213,641,976	0.235
Bananas	75,374	1,519,968	19,493,018,257	76,608	1,580,792	21,098,563,350	0.145
Tomatoes	24,111	341,026	13,687,162,311	29,294	509,465	15,199,459,224	0.104
Pineapples	8,956	376,811	10,939,497,861	9,239	403,055	10,977,753,692	0.075
Cabbages	26,931	775,994	9,667,526,306	24,303	671,139	8,322,940,003	0.057
Mango	44,033	512,077	7,852,505,930	42,756	514,101	8,166,730,640	0.056
Kales	32,347	435,121	6,615,870,235	30,534	413,599	5,942,132,348	0.041
Avocado	16,478	249,912	4,398,758,203	16,091	267,523	4,530,713,523	0.031
Gardern Peas	21,151	105,934	3,250,538,967	22,289	109,416	3,657,515,632	0.025
Bulb Onions	7,205	82,202	4,365,720,329	6,590	80,602	3,558,538,599	0.024
Cowpeas	50,357	124,957	2,942,678,963	52,199	135,116	3,121,462,213	0.021
Pawpaws	8,112	107,591	2,205,138,840	9,907	135,924	3,020,362,099	0.021
Water Melons	6,345	87,307	1,966,293,771	7,017	119,991	2,897,394,293	0.020
Oranges	7,268	85,234	2,166,297,973	8,976	89,542	2,408,321,080	0.017
Spinach	6,359	128,947	1,879,393,574	6,977	129,730	2,108,989,995	0.014
French Beans	5,948	46,222	1,968,975,817	5,682	45,263	2,060,156,025	0.014
African Night Shade	4,285	38,757	1,607,628,095	4,615	43,794	1,902,495,754	0.013
Carrots	6,106	93,860	1,468,289,712	6,744	96,968	1,763,089,803	0.012
Spider Plant	2,854	15,128	579,399,199	3,285	24,055	993,915,145	0.007
Snow Peas	1,951	11,784	710,907,000	2,049	14,627	967,559,848	0.007
Purple Passion	2,151	22,031	1,058,742,346	2,096	17,561	920,712,317	0.006
Pumpkin Fruits	1,164	16,349	511,767,494	1,394	20,698	575,680,191	0.004
Leaf Amaranth	1,867	15,760	479,795,068	2,053	17,979	575,291,185	0.004
Spring Onions	1,770	16,478	446,563,190	2,229	21,594	557,673,995	0.004
Others	20,065	146,075	4,802,716,614	23,072	190,772	6,059,790,074	0.042
Total	539,117	7,533,840	136,864,364,997	560,230	8,036,105	145,600,883,004	1.000

1.3 Horticultural Exports 2015-2017

The total value of Horticultural produce exported increased by 13.6 percent in 2017 from 101.5Bilion to Ksh115.32 Billion realized from 304.15 tons of produce. Production registered a 16.5 percent increase in 2017 compared to 2016. The quantity of flowers, fruits and vegetables increased by 20, 17 and 11 percent, respectively compared to the 2016 quantities. The marked increase in vegetables exports was attributed to compliance with the export market requirements by majority of exporters especially to the European Union. In 2017 the value of flowers, fruits and vegetables increased by 16, 23 and 3 percent respectively as compared to 2016. 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 10: Summary of Horticultural Exports

Commodity	2015		2016		2017		% of Total Value
	Volume (Tons)	(Kshs) (KES)	Volume (Tons)	Value (Kshs)	Volume (Tons)	Value (Kshs)	
Flowers	122,825,252	62,937,532,229	133,658,334	70,829,466,905	159,961,194	82,248,862,888	71.3
Fruits	46,246,350	6,561,800,699	48,657,815	7,317,269,942	56,945,367	9,009,319,074	7.8
Vegetable	68,942,415	20,939,486,522	78,790,593	23,366,771,795	87,240,279	24,064,640,429	20.9
Total	238,014,016	90,438,819,450	261,106,742	101,513,508,642	304,146,840	115,322,822,391	100.0

1.3.1 Vegetable exports

During the period under review vegetable exports increased from 78,790,023 tons in 2016 to 87,240,279 tons in 2017 representing 11 percent increase. The value also increased from Ksh23.36 billion to Ksh24.06 billion in 2017 that was 3 percent increase. Mixed vegetables, fine beans and processed beans were the leading products accounting for 48.86, 21.27 and 11.98 percent respectively of total value of vegetable exports. Herbs rose to the fourth position while Broccoli entered the list of top 22 for the first time.

Table 11: Summary of vegetable exports 2015-2017

Type of Vegetable	2015		2016		2017		% of Total Value
	Volume (Kilograms)	Value (KES)	Volume (Kilograms)	Value (KES)	Volume (Kilograms)	Value (KES)	
Mixed Vegetables	28,129,938	9,122,920,193	29,533,334	10,543,733,171	30,545,851	11,758,610,439	48.86
Fine Beans	23,090,599	7,109,920,896	20,100,179	5,386,523,836	20,208,846	5,117,431,712	21.27
Bean Processed	9,155,306	1,377,034,672	20,463,614	4,277,472,739	26,964,246	2,883,807,927	11.98
Herbs	1,090,169	596,880,092	1,133,189	731,876,331	1,727,001	1,377,926,492	5.73
Snow/Mangetout	2,608,956	983,973,569	2,666,583	827,285,127	2,332,652	1,150,056,268	4.78
Chilies	925,675	294,343,279	902,672	434,655,696	1,388,462	374,617,575	1.56
Aubergines	993,636	226,736,136	1,357,063	394,019,334	1,176,129	287,962,343	1.20
Snap Peas	1,065,624	465,296,066	1,088,506	343,578,595	898,328	302,791,820	1.26
Broccoli					672,025	272,603,743	1.13
Basil	206,397	81,596,167	214,552	96,436,210	445,408	211,229,114	0.88
Garden Peas	166,361	76,365,718	258,549	109,080,932	296,343	112,565,092	0.47
Chives	80,303	38,251,851	103,061	51,048,691	134,307	61,954,063	0.26
Runner Beans	391,104	140,622,086	112,287	36,517,618	115,931	32,414,077	0.13
Baby Corn	74,911	27,157,949	60,126	23,558,438	35,229	15,601,039	0.06
Tomato					8,252	11,935,868	0.05

Thyme	13,281	5,743,717	13,844	6,235,825	23,553	10,092,017	0.04
Pepper Mint	26,223	10,377,465	26,422	11,247,542	25,038	10,062,258	0.04
Okra	52,013	13,804,657	39,483	13,727,279	35,656	8,524,191	0.04
Patra/Arrow Root Leaves	17,415	6,202,449	29,626	10,515,491	23,025	7,944,533	0.03
Dudhi	18,823	6,068,929	41,725	14,382,833	19,344	6,585,222	0.03
Others	835,323	355,459,315	645,208	54,271,337	164,653	49,924,636	0.21
Total	68,942,057	20,938,755,206	78,790,023	23,366,167,025	87,240,279	24,064,640,429	100.0

1.3.2 Fruits Exports

During the period under review fruits contributed Ksh7.3 Billion by value of horticultural exports. Avocado contributed Ksh5.4billion accounting for 74 percent of fruits exports by value while mango export was Ksh1.4billion accounting for 19.4percent of fruits exports. Raspberries have moved to position three in export values and the potential for the fruits is high. The average price of raspberries was the highest among the fruits exported.

Table 12: Summary of Fruits Exports 2015-2017

Type of Vegetable	2015		2016		2017		% of Total Value
	Volume (Kilograms)	Value (KES)	Volume (Kilograms)	Value (KES)	Volume (Kilograms)	Value (KES)	
Avocado	31,225,860	4,278,199,690	38,701,698	5,415,855,214	46,647,630	7,263,421,418	80.62
Mango	14,047,648	1,612,449,629	9,020,933	1,420,018,795	9,306,896	1,427,842,382	15.84
Passion	403,581	111,609,294	529,367	167,610,375	524,270	157,694,455	1.75
Raspberries	151,004	238,076,738	296,151	274,241,083	188,587	140,720,450	1.56
Pineapple	10,065	1,086,230	27,288	3,932,982	202,485	11,376,180	0.126
Banana	2,540	807,213	7,282	2,197,320	42,454	2,933,881	0.0326
Custard Apple	82,834	14,799,266	25,556	5,342,162	13,392	1,529,557	0.0170
Pineapple	10,065	1,086,230	27,288	3,932,982	8,499	1,514,190	0.0168
Apple	10,819	2,694,164	2,674	578,544	6,776	1,207,937	0.0134
Pawpaw	2,778	744,125	7,282	2,042,214	1,592	700,161	0.0078
Lemon	6,597	4,129,456	2,455	1,609,955	2,212	214,775	0.0024
Passion Fruit Juice	700	215,026	410	179,130	390	126,504	0.0014
Strawberry	1,175	218,049	1,175	218,049	48	19,600	0.0002
Others	290,684	295,685,589	9,431	19,676,180	137	17,584	0.0002
Total	46,246,350	6,561,800,699	48,658,990	7,317,434,985	56,945,367	9,009,319,074	100.00

2 CHAPTER TWO

2.1 EXOTIC VEGETABLES PERFORMANCE

2.2 Summary of Performance of exotic vegetables for the years 2016-2017

In 2017, the area, production and value were 295,089Ha, Ksh4.4 million tons and Ksh75.49 Billion respectively. The area and production increased by 4 percent 6.2 percent while the value increased by 4.6 percent as compared to 2016. The leading vegetables in production and value were Irish potatoes, tomatoes, cabbages and Kales accounting for 45.3, 20.13, 11.02 and 7.87 percent of the total value of exotic vegetables respectively. These are the most popular and widely consumed vegetables in the country accounting jointly 84.35 percent of all exotic vegetables as shown in the Table below. Initiatives by the government to ensure planting materials are accessible especially to vegetables that have a bearing on food security and nutrition such as potatoes also resulted in the increase. However, the main challenge has always been inaccessibility to quality seeds for other vegetables, lack of value addition technologies and high post-harvest losses.

Table 13: Performance of exotic vegetables for the years 2016-2017

Crop	2016			2017			% of Total Value
	Area (Ha)	Volume (MT)	Value(KES)	Area (Ha)	Volume (MT	Value (KES)	
Potatao	155,929	2,178,315	31,799,178,942	164,231	2,382,799	34,213,641,976	45.32
Tomato	24,111	341,026	13,687,162,311	29,294	509,465	15,199,459,224	20.13
Cabbage	26,931	775,994	9,667,526,306	24,303	671,139	8,322,940,003	11.02
Kales	32,347	435,121	6,615,870,235	30,534	413,599	5,942,132,348	7.87
Gardern peas	21,151	105,934	3,250,538,967	22,289	109,416	3,657,515,632	4.84
Carrots	6,106	93,860	1,468,289,712	6,744	96,968	1,763,089,803	2.34
French beans	5,948	46,222	1,968,975,817	5,682	45,263	2,060,156,025	2.73
Spinach	6,359	128,947	1,879,393,574	6,977	129,730	2,108,989,995	2.79
Snow peas	1,951	11,784	710,907,000	2,049	14,627	967,559,848	1.28
Butter nuts	926	12,506	394,137,141	967	14,258	461,096,308	0.61
Snap peas	385	2,708	139,797,300	395	2,988	145,170,200	0.19
Baby corn	367	3,612	91,361,960	464	3,457	81,587,604	0.11
Lettuce	120	2,184	47,282,050	122	2,392	59,819,500	0.08
Broccoli	63	757	29,768,000	84	874	34,341,000	0.05
Cauliflower	54	565	17,122,000	69	723	25,996,500	0.03
Runner beans	757	5,272	400,786,000	757	5,299	404,045,700	0.54
Beetroots	84	634	25,186,000	100	707	31,685,424	0.04
Celery	26	459	14,598,000	28	467	14,895,000	0.02

Total	283,615	4,145,900	72,207,881,315	295,089	4,404,171	75,494,122,090	100.00
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2.1.1 Irish potatoes (*Solanum tuberosum*)

Table 6: Performance of Irish Potatoes in selected counties for the years 2016-2017

County	Year 2016			Year 2017			% of Total Value
	Area (Ha)	Volume (MT)	Value(KES)	Area (Ha)	Volume (MT	Value (KES)	
Nyandarua	32,420	539,985	6,352,035,350	35,255	601,825	7,609,825,000	22%
Nakuru	35,376	403,080	5,051,468,802	37,249	396,174	4,633,155,350	14%
Kiambu	16,734	119,809	1,844,436,800	17,154	193,182	4,280,195,500	13%
Narok	12,065	141,542	1,767,460,967	16,865	268,193	4,090,604,409	12%
ElgeyoMarakwet	16,050	289,487	3,489,319,925	13,008	362,940	3,543,353,902	10%
Meru	5,727	80,662	2,388,823,754	11,061	163,926	2,089,752,020	6%
Nyeri	15,424	175,905	3,380,878,000	12,332	90,166	1,645,495,268	5%
Baringo	3,449	57,437	1,406,825,000	3,475	56,197	1,394,749,000	4%
Murang'a	6,648	35,081	813,097,700	5,825	39,081	1,014,952,700	3%
Bungoma	818	12,850	409,625,020	1,181	29,392	746,500,000	2%
Bomet	4,960	79,262	1,454,740,000	2,170	41,780	691,380,000	2%
Kisii	1,003	29,591	379,510,500	1,555	45,205	653,940,000	2%
Laikipia	1,082	5,410	129,840,000	1,612	31,670	633,400,000	2%
UasinGishu	1,049	11,880	402,554,080	1,011	13,656	408,982,000	1%
Nandi	806	16,643	203,235,695	277	6,115	130,480,000	0%
Embu	217	4,340	78,400,000	275	5,005	106,100,000	0%
Others	153,828	2,002,964	29,552,251,593	3,925	38,292	540,776,827	2%
Total	155,929	2,178,315	31,799,178,942	164,231	2,382,799	34,213,641,976	100%

Irish potato is one of the staple foods in Kenya and accounted for 23.5 percent of the total value of horticultural produce. The area under potato production increased from 155,929ha in 2016 to 164,231ha in 2017 5percent increase. The volume increased from 2.17Milion tones to 2.38Milion tones while the value increase from 31.799Bilion to 34.213bilion representing 9percent and 8percent increase respectively compared with 2017. Lack of clean planting materials and bacterial wilt are still the major challenges in Irish potato production. The average farm gate price of Irish potatoes per kg declined from an average of Kshs14.60 in 2016 to Kshs14.36 in 2017 as a result of the high volumes achieved. There was also a marginal increase in yield per unit area from 13.97 tons/ha in 2016 to 14.51 tons per Ha in 2017 representing a 1.6 increase.

2.1.2 Tomatoes (*Lycopersicon esculentum*)

Tomato is the most important exotic vegetable by value. In 2017, the area, volumes and values went up by 21%, 49% and 11% respectively. This can be attributed to high enterprise returns, irrigation expansion, and recovery from drought of 2016. The production per unit area increased from 14 to 17 tons /Ha, which is partly because more farmers are opting for hybrid varieties rather than the traditional conventional ones. High cost of inputs and Insect pest and diseases are the major challenges in tomato production. Tomato leaf miner *Tutaabsoluta* is an important insect pest in tomato production so are bacterial wilt and late blight diseases.

The most common varieties are Anna F1, Tilka F1, Rambo F1 among others.

Table 7: Performance of Tomatoes in selected counties for the years 2016-2017

County	Year 2016			Year 2017			% of Total Value
	Area (Ha)	Volume (MT)	Value(KES)	Area (Ha)	Volume (MT	Value (KES)	
Kajiado	1,452	32,789	1,612,592,000	2,157	55,156	2,097,687,000	14
Narok	1,561	20,744	596,402,394	2,277	54,220	1,700,200,000	11
Kirinyaga	3,128	54,185	2,323,140,000	2,245	46,594	1,081,130,000	7
Machakos	689	12,765	380,772,000	2,453	39,255	1,029,775,000	7
Makueni	101	1,954	90,920,000	573	22,590	910,600,000	6
Trans Nzoia	733	16,660	638,237,500	758	21,257	678,210,000	4
Kisii	1,069	17,648	485,941,190	1,236	18,730	648,818,483	4
Meru	1,050	9,951	322,565,018	1,237	15,371	592,615,018	4
Kisumu	646	8,545	397,342,500	663	16,341	542,320,000	4
Bungoma	811	21,305	951,330,000	551	10,111	461,710,000	3
Siaya	584	7,825	263,970,000	741	10,674	442,675,000	3
Murang'a	510	8,378	187,803,500	1,307	11,680	416,513,500	3
Nakuru	810	16,432	491,990,000	998	18,255	407,705,000	3
Laikipia	583	14,070	986,420,000	321	10,999	376,500,000	2
Kwale	368	4,830	156,750,000	458	8,589	368,023,000	2
Kiambu	965	9,132	327,305,000	544	7,099	270,033,750	2
Homabay	669	8,249	393,580,000	1,151	7,998	264,202,150	2
Migori	1,080	6,805	326,055,290	1,094	5,385	215,400,000	1
Others	7,302	68,760	2,754,045,919	8,532	129,162	2,695,341,323	18
Total	24,111	341,026	13,687,162,311	29,294	509,465	15,199,459,224	100

2.1.3 Cabbage (*Brassica oleracea var. capitata*)

Cabbage is mainly grown for the domestic market. In 2017, there was general decline in area (9%), volume (13.5%), and value (14%). This can be attributed to the drought of early 2017 given that the crop is mainly rain fed. Cabbage is one of the highly consumed vegetables in Kenya, has a long shelf life and is easy to transport thus increasing its demand. High cost of farm inputs and pests like the diamond back moth are major challenges in cabbage production. Moreover, the crop prices tend to be low especially during rainy season due to the glut and bad roads in the main production areas leading exploitation by middlemen.

Table 8: Performance of cabbages in selected counties for the years 2016-2017

County	Year 2016			Year 2017			% of Total Value
	Area (Ha)	Volume (MT)	Value(KES)	Area (Ha)	Volume (MT	Value (KES)	
Nyandarua	8,340	232,725	1,779,735,792	5,155	133,568	1,464,415,150	18%
Meru	2,589	107,231	2,112,732,120	3,210	93,009	1,160,986,320	14%
Kiambu	1,942	41,874	379,655,000	2,836	52,346	873,043,100	10%
Narok	1,636	39,413	543,066,700	1,315	58,410	731,500,000	9%
Nakuru	2,096	63,342	577,228,302	2,168	62,023	677,385,000	8%
Nyeri	2,292	55,928	813,014,000	2,035	41,392	574,949,080	7%
ElgeyoMarakwet	959	31,798	608,045,018	1,016	26,033	549,635,217	7%
Kisii	974	38,833	582,100,000	607	26,792	322,236,853	4%
Trans Nzoia	560	11,807	215,614,800	625	12,980	249,951,800	3%
Bomet	668	34,383	394,260,000	620	24,800	248,000,000	3%
Makueni	201	3,794	113,220,000	288	6,825	168,575,000	2%
Bungoma	1,033	26,222	591,722,500	427	10,997	147,490,000	2%
Murang'a	384	6,415	116,970,000	387	5,586	127,687,500	2%
UasinGishu	87	4,131	116,700,000	254	7,275	124,565,000	1%
TaitaTaveta	87	4,131	116,700,000	77	3,902	116,357,143	1%
Others	3,083	73,967	606,762,074	3,285	105,201	786,162,840	9%
Total	26,931	775,994	9,667,526,306	24,303	671,139	8,322,940,003	100%

2.1.4 Kales (*Brassica oleracea*)

Kales or “Sukuma wiki” as commonly referred to is produced for the domestic market. It is the most popular leafy vegetable and highly consumed vegetable in the country and is grown in all the 47 counties. There was decline in area(6%), volumes(5%)and value(10%). This is due long dry spell experienced in the main production areas during the early months of 2017. Just like other brassica vegetable, high cost of farm inputs and pests like the diamond back moth are major challenges in kales production. Moreover, the crop prices tend to be low especially during rainy season due to the glut and bad roads in the main production areas leading exploitation by middlemen.

Table 9: Performance of kales in selected counties for the years 2016-2017

County	Year 2016			Year 2017			% of Total Value
	Area (Ha)	Volume (MT)	Value(KES)	Area (Ha)	Volume (MT	Value (KES)	
Kiambu	3,325	93,037	1,187,629,000	3,325	82,142	1,175,721,071	20%
Kisii	1,801	27,807	467,174,250	1,789	34,204	616,487,305	10%
Narok	973	25,127	416,220,000	1,100	54,610	575,182,000	10%
Nyamira	1,835	21,027	394,819,300	1,097	31,520	446,780,000	8%
Kisumu	1,073	18,937	331,397,500	1,141	19,020	300,610,000	5%
Siaya	1,380	22,025	239,096,350	1,691	10,325	286,115,000	5%
Trans Nzoia	1,803	15,328	235,662,200	925	20,822	263,087,000	4%
Machakos	806	8,426	225,645,000	1,614	16,184	262,380,000	4%
Bomet	287	11,720	197,930,000	947	22,470	247,284,000	4%
Lamu	1,070	16,531	186,550,000	262	7,413	246,120,000	4%
Meru	579	9,584	184,137,750	822	15,540	237,937,200	4%
Nakuru	1,060	9,322	181,390,000	1,583	26,280	235,610,000	4%
Bungoma	917	13,121	177,250,000	795	10,095	230,100,000	4%
Kericho	380	8,405	162,430,000	332	12,583	222,131,500	4%
Murang'a	1,006	9,449	161,400,000	587	9,734	203,347,750	3%
Migori	1,158	19,487	327,017,200	1,083	6,265	198,264,500	3%
Makueni	291	5,420	140,520,000	576	9,391	194,450,000	3%
Others	12,603	100,368	1,399,601,685	10,866	25,001	525,021	0%
Total	32,347	435,121	6,615,870,235	30,534	413,599	5,942,132,348	100%

2.1.5 Garden peas (*Pisum sativum*)

Garden pea is largely grown for the domestic market with some being exported in mixed pre-packs. The area increased from 21,151ha to 22,289ha (5%), production grew from 105,934 tons to 109,419 tons (3%). There was a 12percent increase in the value from 3.25 to 3.66billion.The major producing counties were Nyandarua, Nakuru, Meru and Kiambu. The major challenge in garden pea production is powdery mildew, black spot and African boll worm.

Table 10: Performance of Garden peas in selected counties for the years 2016-2017

County	Year 2016			Year 2017			% of Total Value
	Area (Ha)	Volume (MT)	Value(KES)	Area (Ha)	Volume (MT	Value (KES)	
Nyandarua	12,023	38,244	1,131,576,550	13,900	71,100	2,145,800,000	58.67
Nakuru	513	9,284	415,600,000	5,913	20,966	646,930,000	17.69
Meru	79	765	21,531,240	639	5,255	287,463,600	7.86
Kiambu	513	9,284	415,600,000	535	2,523	147,947,143	4.05

Trans Nzoia	67	302	8,129,002	155	2,099	101,233,800	2.77
Narok	240	1,102	66,000,000	541	1,812	80,280,000	2.19
ElgeyoMarakwet	128	1,076	10,215,482	105	860	59,549,920	1.63
TaitaTaveta	24	545	35,370,000	24	587	38,571,884	1.05
Baringo	59	463	27,250,000	70	540	37,714,286	1.03
UasinGishu	52	392	17,820,919	76	718	27,640,200	0.76
Kirinyaga	500	3,050	98,000,000	114	1,460	19,350,000	0.53
Nyeri	55	413	16,797,500	55	352	18,146,648	0.50
Nandi	25	217	11,340,000	31	246	11,146,000	0.30
Kajiado	20	128	1,960,000	50	249	9,400,000	0.26
Laikipia	43	435	11,750,000	15	150	9,000,000	0.25
Bungoma	25	18	980,000	20	300	6,000,000	0.16
Kericho	13	25	3,280,000	15	31	3,680,000	0.10
West Pokot	9	42	1,740,000	13	62	2,740,000	0.07
Others	6,764	40,150	955,598,274	18	106	4,922,151	0.13
Total	21,151	105,934	3,250,538,967	22,289	109,416	3,657,515,632	100.00

2.1.6 Carrots (*Daucus carota*)

Carrots are mainly produced for domestic market although there is a small volume that is exported in mixed vegetable pre-packs. There was an increase in the area under carrot production by 10.4 percent from 6,106ha in 2016 to 6,744ha in 2017. During the years under review, the volume and value increased from 93,860tons to 96,968tons and from Ksh1.468billion to Ksh1.763billion a 3.3percent and 20.1percent increase in production and value in 2017 compared to 2016.

Table 11: Performance of Carrots in selected counties for the years 2016-2017

County	Year 2016			Year 2017			% of Total Value
	Area (Ha)	Volume (MT)	Value(KES)	Area (Ha)	Volume (MT)	Value ((KES)	
Nyandarua	1,655	31,487	324,324,000	1,921	35,745	470,928,000	26.71
Meru	1,180	13,363	246,301,395	1,221	10,195	301,441,395	17.10
Kiambu	832	18,954	329,172,860	871	12,300	287,166,000	16.29
Nyeri	530	5,578	92,346,000	438	12,969	255,527,348	14.49
Nakuru	1,111	13,007	159,465,000	1,207	13,980	188,757,000	10.71
Narok	120	1,896	52,720,000	286	1,976	44,650,000	2.53
Baringo	43	290	10,900,000	86	597	26,480,000	1.50
Kisii	50	722	18,140,000	72	849	22,697,896	1.29
Trans Nzoia	74	602	18,700,000	61	631	19,200,000	1.09
Bomet	49	544	40,560,000	68	900	18,750,000	1.06
Bungoma	70	2,112	63,150,000	54	1,185	13,105,000	0.74

Kirinyaga	45	509	9,915,750	47	635	13,007,250	0.74
Kajiado	47	775	5,955,750	104	1,180	11,375,100	0.65
Nandi	22	210	11,000,000	21	204	10,920,000	0.62
Siaya	19	98	8,900,000	20	100	10,000,000	0.57
ElgeyoMarakwet	49	917	9,445,039	59	949	9,396,380	0.53
Nyamira	53	883	18,825,000	47	514	8,360,000	0.47
Murang'a	20	172	4,566,764	27	316	6,984,600	0.40
UasinGishu	15	127	2,690,600	23	227	6,738,000	0.38
Embu	15	390	8,700,000	12	320	6,500,000	0.37
Others	109	1,226	32,511,554	100	1,196	31,105,834	1.76
Total	6,106	93,860	1,468,289,712	6,744	96,968	1,763,089,803	100.00

2.1.7 French beans (*Phaseolus sp.*)

French beans are grown mainly for the export market where they are exported as fresh or canned. The area under French beans production was 5,682 Ha in 2017 compared to 5,948 Ha in 2016 Ha which is a 4% decrease. There was also a 2% decrease on productivity in 2017 at 45,263 Tons compared to 46,222 Tons in 2016. However, the value increased by 5% from Kshs 1.97 billion in 2016 to 2.06 billion in 2017. The decrease in hectareage can be attributed to challenges in marketing and shift to other less risky enterprises such as banana production. The value for fresh beans was however high due to depressed supply. The leading counties in terms of value in 2017 were Machakos, Kirinyaga, Murang'a and Meru that accounted for 28.4%, 17.3%, 10.7% and 10.7% respectively. Production and marketing of French beans in Kenya has continually been faced with the challenge of pests and diseases which have resulted to high rejection rate or interception in the exported market because of pesticide residues. Some common pests in beans are white flies, mites and aphids. Diseases include bean rust and bean spot.

Table 12: Performance of French Beans in selected counties for the years 2016-2017

County	Year 2016			Year 2017			% of Total Value
	Area (Ha)	Volume (MT)	Value(KES)	Area (Ha)	Volume (MT	Value (KES)	
Machakos	961	9,270	536,150,000	1,029	9,890	584,900,000	28.4
Kirinyaga	2,488	10,740	509,175,000	1,729	7,822	356,350,000	17.3
Murang'a	888	6,547	237,457,350	842	6,048	220,747,350	10.7
Meru	619	5,850	213,654,000	637	5,923	220,264,000	10.7
Trans Nzoia	70	340	13,600,000	174	3,260	132,000,000	6.4
Narok	258	5,755	140,100,000	311	2,605	104,250,000	5.1
Makueni	38	950	57,000,000	70	1,400	86,000,000	4.2
Laikipia	40	635	23,800,000	92	1,940	76,000,000	3.7
Nakuru	216	1,799	66,645,000	247	1,399	69,450,000	3.4
Nyeri	50	310	15,116,000	135	990	56,389,464	2.7

TaitaTaveta	53	1,075	38,197,500	59	1,143	36,429,559	1.8
Kiambu	41	578	27,920,000	100	836	33,600,000	1.6
Kajiado	19	236	11,350,500	70	686	27,850,500	1.4
Embu	48	540	20,400,000	53	351	15,870,000	0.8
Others	160	1,598	58,410,467	136	971	40,055,152	1.9
Total	5,948	46,222	1,968,975,817	5,682	45,263	2,060,156,025	100.0

2.1.8 Spinach (*Spinacia oleracea*)

Spinach is an important vegetable especially among people living in major towns. During the period under review the area under spinach production increased by 21% volume went up by 6% while the values grew by 12%. This general increase was attributed to by the high demand for the spinach although it is highly susceptible to rust and has a low shelf life compared to the other leafy vegetables. Kiambu and Nakuru Counties were leading in value at 20 percent and 17 percent of the country's total value in 2016.

Table 13: Performance of Spinach in selected counties for the years 2016-2017

County	Year 2016			Year 2017			% of Total Value
	Area (Ha)	Volume (MT)	Value(KES)	Area (Ha)	Volume (MT)	Value (KES)	
Narok	907	7,289	78,553,644	746	39,843	415,180,000	19.7
Kiambu	794	17,738	268,808,000	842	16,778	359,956,000	17.1
Nakuru	695	11,118	160,154,759	1,504	17,830	245,219,999	11.6
Machakos	176	862	31,977,800	388	4,216	152,950,000	7.3
Meru	177	3,328	67,775,012	282	6,753	142,222,012	6.7
Kajiado	285	3,667	27,090,000	361	5,287	93,282,150	4.4
Nyeri	214	2,805	35,176,100	257	5,192	88,339,948	4.2
Nyandarua	751	9,302	86,051,020	731	9,639	85,922,000	4.1
Embu	60	2,100	52,500,000	65	2,600	63,000,000	3.0
Trans Nzoia	51	432	5,680,000	190	2,955	59,100,000	2.8
TaitaTaveta	102	3,021	71,775,000	56	2,467	57,296,196	2.7
Makueni	46	410	20,017,920	183	1,390	35,680,000	1.7
Kisumu	55	2,228	33,725,000	53	2,218	33,740,000	1.6
Murang'a	193	2,149	39,938,650	190	1,754	30,535,450	1.4
Kitui	44	945	18,300,000	72	1,426	30,484,375	1.4
ElgeyoMarakwet	108	1,355	28,099,899	128	1,460	24,471,465	1.2
Kirinyaga	84	725	14,175,000	174	1,167	23,520,000	1.1
Others	4,741	59,474	839,595,770	755	6,756	168,090,400	8.0
Total	6,359	128,947	1,879,393,574	6,977	129,730	2,108,989,995	100.0

2.1.9 Snow peas (*Pisum sativum* var. *saccharatum*)

Snow peas are mainly grown for the export market with only a very small quantity being consumed locally. The value of snow peas produced in 2017 increased by 5percent from Ksh710.9 Million in 2016to Ksh967.56 Million. Meru, Nyeri and Nyandarua Counties were leading and contributed to 61.9, 15.9 and 13.3 respectively of the total value in 2017. The main challenges in snow peas are Powderly mildew disease and leaf miner pest.

Table 14: Performance of Snow Peas in selected counties for the years 2016-2017

County	Year 2016			Year 2017			% of Total Value
	Area (Ha)	Volume (MT)	Value(KES)	Area (Ha)	Volume (MT	Value (KES)	
Meru	1,377	7,478	457,840,000	1,205	8,513	598,540,977	61.9
Nyeri	280	2,044	122,525,000	227	1,940	153,848,746	15.9
Nyandarua	100	600	30,000,000	430	2,580	129,000,000	13.3
Laikipia	30	516	40,474,000	15	280	21,600,000	2.2
Trans Nzoia	50	206	11,760,000	54	378	16,020,000	1.7
Narok	55	275	16,500,000	50	250	15,900,000	1.6
Taita Taveta	14	252	11,200,000	14	275	11,450,000	1.2
Kiambu	13	120	7,970,000	14	120	8,100,000	0.8
Nakuru	10	98	6,268,000	7	66	4,500,000	0.5
Kajiado	3	25	1,450,000	12	60	3,050,125	0.3
Murang'a	4	9	620,000	5	34	2,990,000	0.3
Bungoma	3	50	3,000,000	2	30	1,200,000	0.1
Makueni	2	42	700,000	2	40	800,000	0.1
Elgeyo Marakwet	10	70	600,000	11	62	560,000	0.1
Total	1,951	11,784	710,907,000	2,049	14,627	967,559,848	100.0

2.1.10 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 the crop was 967 ha up from 926 while the production increased from 12,506tons to 14,258tons compared to 2016. Volume produced and value all increased in 2017 by 4, 14 and 17 percent respectively compared to 2016. Meru, Homabay and Kirinyaga Counties are the leading producers accounting for 20.3, 18.6 and 11.6percent of the country's total value in 2017. The major challenge in butter nut production is melon fly

Table 15: Performance of Butter nut in selected counties for the years 2016-2017

County	Year 2016			Year 2017			% of Total Value
	Area (Ha)	Volume (MT)	Value(KES)	Area (Ha)	Volume (MT)	Value (KES)	
Kirinyaga	145	2,018	80,540,000	145	2,039	93,690,000	20.3
Homabay	205	2,665	68,476,000	196	3,514	85,720,000	18.6
Meru	106	2,316	53,895,800	111	2,466	53,410,800	11.6
Machakos	137	1,328	65,500,000	107	1,028	50,500,000	11.0
Siaya	27	393	12,840,000	33	696	39,840,000	8.6
Nakuru	44	417	8,002,000	50	841	33,902,000	7.4
Murang'a	24	211	9,670,400	59	566	25,722,400	5.6
Tharaka Nithi	32	364	12,740,000	32	364	12,740,000	2.8
Embu	42	735	13,650,000	45	525	12,250,000	2.7
Elgeyo Marakwet	15	232	8,565,424	17	297	9,553,308	2.1
Baringo	34	120	2,800,000	48	252	9,060,000	2.0
Bomet	26	650	5,600,000	35	700	7,000,000	1.5
Narok	6	120	6,000,000	7	120	6,000,000	1.3
Laikipia	8	160	6,000,013	8	152	4,500,000	1.0
Kwale	13	130	5,200,000	7	105	4,200,000	0.9
Bungoma	16	234	9,468,500	14	166	3,335,000	0.7
Kericho	5	69	1,656,000	8	92	2,212,800	0.5
Others	42	343	23,533,004	47	336	7,460,000	1.6
Total	926	12,506	394,137,141	967	14,258	461,096,308	100.0

2.1.11 Snap peas (*Pisum sativum var. macrocarpon*)

Snap peas is mainly grown for the export market. During the year under review the area under Snap pea's production increased from 385ha to 395ha and value from Ksh139.8million to Ksh145.17million representing 3 and 4percent increase compared to 2016. The leading county was Nyeri which accounted for 62.2 percent 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 2016-2017

County	Year 2016			Year 2017			% of Total Value
	Area (Ha)	Volume (MT)	Value(KES)	Area (Ha)	Volume (MT)	Value (KES)	
Nyeri	227	1,787	89,397,300	230	2,045	90,345,200	62.2
Nakuru	58	310	15,900,000	61	324	16,750,000	11.5
Narok	30	160	10,000,000	32	165	12,500,000	8.6
Laikipia	20	170	9,800,000	21	175	10,500,000	7.2

Nyandarua	24	115	6,000,000	25	116	6,100,000	4.2
Meru	8	58	3,840,000	8	59	3,950,000	2.7
Elgeyo Marakwet	11	65	3,000,000	12	58	3,100,000	2.1
Trans Nzoia	6	40	1,700,000	6	42	1,750,000	1.2
Murang'a	1	3	160,000	1	4	175,000	0.1
Total	385	2,708	139,797,300	395	2,988	145,170,200	100.0

2.1.12 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 increased by 27 percent from 3,606Ha in 2015 to 3,457Ha in 2016. However, the volume and value decreased by 4 and 11 percent in 2017 compared to 2016.

Table 25: Performance of Baby Corn in selected counties for the years 2016-2017

County	Year 2016			Year 2017			% of Total Value
	Area (Ha)	Volume (MT)	Value(KES)	Area (Ha)	Volume (MT)	Value (KES)	
Makueni	142	1,280	29,200,000	140	1,274	27,775,204	34.0
Laikipia	57	930	30,800,000	57	860	23,050,000	28.3
Kirinyaga	108	815	14,810,000	212	858	17,280,000	21.2
Meru	35	312	9,795,960	39	353	11,084,400	13.6
Kiambu	16	232	5,568,000	4	60	1,320,000	1.6
Kajiado	8	37	1,048,000	10	42	858,000	1.1
Murang'a	1	6	140,000	2	10	220,000	0.3
Total	367	3,612	91,361,960	464	3,457	81,587,604	100.0

2.1.13 Lettuce (*Lactuca sativa*)

The area under lettuce production decreased from 120ha in 2016 to 122ha in 2017. The volume increased from 2,184 to 2,392 tons while value increased from 47.28million to 59.12million representing 9 and 6 percent increase respectively 2017 compared to 2016. The leading counties were Kisumu, Kiambu and Nakuru accounting for 56.8, 18.2 and 13.5percent of the total value.

Table 26: Performance of Lettuce in selected counties for the years 2016-2017

County	Year 2016			Year 2017			% of Total Value
	Area (Ha)	Volume (MT)	Value(KES)	Area (Ha)	Volume (MT)	Value (KES)	
Kisumu	70	1,750	35,000,000	70	1,850	34,000,000	56.8
Kiambu	34	280	6,902,750	33	291	10,910,000	18.2
Nakuru	4	21	51,800	5	82	8,103,000	13.5
Taita Taveta	9	90	2,700,000	9	110	3,300,000	5.5

Nairobi	1	20	1,607,500	3	36	2,446,000	4.1
Homabay	2	20	800,000	2	20	800,000	1.3
Nyeri	1	3	220,000	1	3	260,500	0.4
Total	120	2,184	47,282,050	122	2,392	59,819,500	100.0

2.1.14 Broccoli (*Brassica oleraceae var. italica*)

Broccoli is produced for the upscale markets in the urban centers and hotels as well as for export. During the year under review the area under broccoli production increased from 63ha to 84ha while production increased from 757tons to 874 tons and value increased from Kshs29.7 million to Kshs34.3million a 33, 15 and 15percent increase respectively. The demand for Broccoli is increasing due to its high nutrition value and medicinal attributes.

Table 27: Performance of Broccoli in selected counties for the years 2016-2017

County	Year 2016			Year 2017			% of Total Value
	Area (Ha)	Volume (MT)	Value(KES)	Area (Ha)	Volume (MT	Value (KES)	
Kiambu	41	492	15,248,000	58	585	14,736,000	43
Nairobi	2	42	2,220,000	5	117	8,220,000	24
Laikipia	8	160	9,600,000	10	105	7,875,000	23
Nyandarua	3	35	1,750,000	3	25	2,000,000	6
Murang'a	6	11	440,000	5	25	1,000,000	3
Nakuru	4	17	510,000	4	17	510,000	1
TOTAL	63	757	29,768,000	84	874	34,341,000	100

2.1.15 Cauliflower (*Brassica oleracea var. botrytis*)

During the year under review the area under production increased from 52ha in 2016 to 69ha in 2017 and value from Kshs17.12million to Kshs25.99 million. Kiambu, Nairobi and Kakamega were the leading counties in value in 2017 accounting for 82.0, 10.6 and 3.1 percent of the total value respectively.

Table 16: Performance of Cauliflower in selected counties for the years 2016-2017

County	Year 2016			Year 2017			% of Total Value
	Area (Ha)	Volume (MT)	Value(KES)	Area (Ha)	Volume (MT	Value (KES)	
Kiambu	41	436	13,292,000	56	589	21,326,400	82.0
Nairobi	4	48	1,900,000	4	52	2,760,000	10.6
Kakamega	4	40	800,000	4	40	800,000	3.1
Murang'a	3	25	720,000	3	24	690,100	2.7
Trans Nzoia	2	16	410,000	2	18	420,000	1.6
Total	54	565	17,122,000	69	723	25,996,500	100.0

2.1.16 Runner beans (*Phaseolus coccineus*)

During the year under review the area remained the same while production increased marginally from 5,272tons to 5,299tons. The value increased from 400.76million in 2016 to 404.04 million in 2017 representing a percent increase. The leading counties in production of runner beans were Meru and Nakuru counties accounting for 91.18 and 5.05 percent of the total value.

Table 29: Performance of Runner Beans in selected counties for the years 2016-2017

County	Year 2016			Year 2017			% of Total Value
	Area (Ha)	Volume (MT)	Value(KES)	Area (Ha)	Volume (MT)	Value (KES)	
Meru	650	4,654	365,400,000	650	4,754	368,400,000	91.18
Nakuru	30	240	19,200,000	30	180	20,400,000	5.05
Bomet	60	316	13,787,200	58	295	12,556,200	3.11
Vihiga	12	37	1,500,000	13	40	1,600,000	0.40
Elgeyo Marakwet	2	9	645,000	3	14	817,500	0.20
Uasin Gishu	1	4	160,000	1	4	158,000	0.04
Machakos	2	11	40,000	2	11	40,000	0.01
Nairobi	0	2	53,800	0	2	74,000	0.02
Total	757	5,272	400,786,000	757	5,299	404,045,700	100.00

2.1.17 Beetroot (*Beta vulgaris*)

During the year under review, the area under production, volume and value decreased from 84ha to 100ha, 634tons to 707tons and Kshs25.18million to Kshs31.68milion representing 19, 11 and 26percent decline respectively compared to the previous year. The leading county by value was Nyeri, Kiambu and Nandi accounting for 27.6, 23.1 and 12.5 percent respectively of the country's value.

Table 30: Performance of Beetroots in selected counties for the years 2016-2017

County	Year 2016			Year 2017			% of Total Value
	Area (Ha)	Volume (MT)	Value(KES)	Area (Ha)	Volume (MT)	Value (KES)	
Nyeri	31	235	8,266,000	31	217	8,756,924	27.6
Kiambu	19	114	4,260,000	32	186	7,304,000	23.1
Nandi	8	58	3,220,000	9	70	3,950,000	12.5
Nakuru	9	63	2,010,000	9	64	3,775,000	11.9
Nyamira	2	27	1,620,000	3	32	1,695,000	5.3
Kisii	2	31	1,700,000	2	27	1,620,000	5.1
Machakos	3	30	1,500,000	3	30	1,500,000	4.7
Meru	4	30	900,000	3	30	900,000	2.8
Kericho	2	12	660,000	3	14	742,500	2.3
Bungoma	2	14	90,000	2	12	480,000	1.5

Elgeyo Marakwet	1	3	170,000	1	3	160,000	0.5
Murang'a	2	15	630,000	2	19	640,000	2.0
Busia	1	3	160,000	1	4	162,000	0.5
Total	84	634	25,186,000	100	707	31,685,424	100.0

2.1.18 Celery (*Apium graveolens*)

Celery leaves are mainly used for making soups and salads. During the year under review, the area under production, volume and value increased from 26Ha to 28Ha, 459tons to 467tons and Ksh14.598million to Ksh14.895million. The leading county in production during the year under review was Kiambu accounting for 90.6 percent of the county's total value.

Table 31: Performance of Celery in selected counties for the years 2016-2017

County	Year 2016			Year 2017			% of Total Value
	Area (Ha)	Volume (MT)	Value(KES)	Area (Ha)	Volume (MT)	Value (KES)	
Kiambu	20	411	13,228,000	21	414	13,500,000	90.6
Bungoma	4	31	750,000	5	35	750,000	5.0
Nairobi	1	9	320,000	1	10	345,000	2.3
Nakuru	1	8	300,000	1	8	300,000	2.0
Total	26	459	14,598,000	28	467	14,895,000	100.0

2.2 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 increased awareness on the health as well as nutritional benefits.

During 2017 the area under these vegetables increased by 6 percent from 63,314ha to 66,879ha. The yields and value increased from 229,492tons to 265,267tons and Kshs6.83billion to Kshs8.01billion a 16 and 17percent increase respectively. In this category of vegetables, Cow peas contributed 38.97percent followed by African Nightshade and spider plant that contributed 23.75 and 12.41 percent respectively.

Table 32: Production of Indigenous vegetables for the year 2016-2017

County	Year 2016			Year 2017			% of Total Value
	Area (Ha)	Volume (MT)	Value(KES)	Area (Ha)	Volume (MT)	Value (KES)	
Cow peas	50,357	124,957	2,942,678,963	52,199	135,116	3,121,462,213	38.97
African night shade	4,285	38,757	1,607,628,095	4,615	43,794	1,902,495,754	23.75
Spider plants	2,854	15,128	579,399,199	3,285	24,055	993,915,145	12.41
Pumpkin fruit	1,164	16,349	511,767,494	1,394	20,698	575,680,191	7.19
Leaf Amarathus	1,867	15,760	479,795,068	2,053	17,979	575,291,185	7.18
Slender	403	4,052	193,430,500	641	7,104	228,546,000	2.85
Jute mallow	842	5,384	161,993,950	937	5,829	189,044,400	2.36

Pumpkin leaves	711	5,553	126,849,112	821	6,546	146,024,400	1.82
Grain amaranth	500	1,594	113,493,624	487	1,474	137,069,000	1.71
Vine spine	103	1,520	66,712,000	208	2,268	91,609,000	1.14
Tunguja	160	150	42,000,000	168	160	44,000,000	0.55
Malabor	20	65	2,261,000	23	72	2,464,090	0.03
Stinging nettle	46	98	2,093,000	46	107	2,378,000	0.03
Russian	2	125	1,227,000	2	65	625,000	0.01
Total	63,314	229,492	6,831,329,005	66,879	265,267	8,010,604,378	100.00

2.2.1 Cowpeas (*Vigna unguiculata*)

Cowpeas are grown mainly for the domestic market for leaves as a vegetable. During the year under review, the area under cow peas was 52,199 Ha producing 135, 116 Tons valued at Ksh3.1 Billion. This represented an increase in area, volume and value by 4%, 8% and 6% respectively compared to 2016. The increase in production is attributed to favorable rains in 2017 compared to 2016.

Cow peas are a drought resistance crop mainly grown in arid and arid and semi-arid counties. The main producing counties are Makueni, TharakaNithi, Kwale, Siaya, Kitui and Machakos among others. The major challenge is pests especially the aphids.

Table 33: Performance of Cowpeas in selected counties for the years 2016-2017

County	Year 2016			Year 2017			% of Total Value
	Area (Ha)	Volume (MT)	Value(KES)	Area (Ha)	Volume (MT	Value (KES)	
Makueni	14,980	43,600	811,422,600	15,980	43,600	841,422,600	27.0
TharakaNithi	1,167	1,350	363,750,000	1,177	1,750	383,750,000	12.3
Kwale	3,175	4,261	162,628,000	4,128	13,482	309,338,000	9.9
Siaya	1,086	7,612	290,960,000	1,173	5,647	263,900,000	8.5
Kitui	21,400	33,130	363,540,000	21,050	31,463	253,030,000	8.1
Machakos	2,231	6,717	149,256,200	2,324	6,987	165,216,200	5.3
Nyamira	104	641	39,112,000	263	4,184	123,596,000	4.0
Busia	893	2,352	93,005,000	905	2,223	115,205,556	3.7
Bungoma	220	1,548	36,415,000	269	3,465	103,890,000	3.3
Homabay	690	2,799	82,857,500	575	2,614	97,855,000	3.1
Kakamega	309	778	22,603,000	547	1,811	46,836,000	1.5
Vihiga	240	786	44,030,000	235	1,095	46,150,000	1.5
Kilifi	630	3,559	79,002,750	555	3,153	46,028,023	1.5
TaitaTaveta	544	3,876	65,115,000	451	2,481	37,215,000	1.2
Meru	931	1,837	51,347,360	657	989	34,777,360	1.1
Kisii	194	1,695	47,999,003	195	1,203	31,354,725	1.0

Kisumu	120	380	27,600,000	133	455	29,100,000	0.9
Others	1,444	8,038	212,035,550	1,582	8,516	192,797,750	6.2
Total	50,357	124,957	2,942,678,963	52,199	135,116	3,121,462,213	100.0

2.2.2 African Nightshade (*Solanum nigrum complexes*)

African Nightshade is a popular vegetable in Kenya and was the second most important African vegetable. During the year under review, the area under production was 4,615 Ha producing 43,794 Tons valued at Ksh 1.9 Billion. In 2017, Area, volume and value increased by 8%, 13% and 18% respectively compared to the previous year.

The two leading growing counties are Kisii and Nyamira Counties in value contributing to 31% and 22.5% of the total value in 2017.

Table 17: Performance of African Nightshade in selected counties for the years 2016-2017

County	Year 2016			Year 2017			% of Total Value
	Area (Ha)	Volume (MT)	Value(KES)	Area (Ha)	Volume (MT	Value (KES)	
Kisii	708	10,049	405,644,067	746	11,632	593,270,725	31.2
Nyamira	672	8,719	393,025,000	862	9,124	427,750,000	22.5
Migori	337	2,229	112,844,500	235	1,286	136,109,000	7.2
Busia	115	684	88,750,000	137	743	110,000,000	5.8
Bungoma	308	2,155	150,698,000	216	2,604	102,710,000	5.4
Bomet	23	440	10,000,000	139	2,780	86,800,000	4.6
Kisumu	180	1,900	72,000,000	249	2,450	74,512,500	3.9
Kiambu	118	1,281	37,545,000	227	2,219	59,640,000	3.1
Homabay	385	1,473	65,615,000	338	1,477	57,895,000	3.0
Trans Nzoia	171	2,381	69,635,000	186	2,740	45,494,380	2.4
Kakamega	198	702	23,530,000	219	707	28,630,000	1.5
Siaya	142	575	15,500,000	169	698	22,722,000	1.2
Nyandarua	159	715	21,400,000	160	720	21,600,000	1.1
Nandi	99	597	18,145,000	90	580	17,362,500	0.9
UasinGishu	56	297	10,250,000	70	631	16,660,000	0.9
Nakuru	73	503	14,659,000	87	534	16,463,500	0.9
West Pokot	65	154	9,385,000	78	221	13,462,000	0.7
Kericho	46	465	12,689,000	47	484	13,162,000	0.7
Others	431	3,439	76,313,528	360	2,163	58,252,149	3.1
Total	4,285	38,757	1,607,628,095	4,615	43,794	1,902,495,754	100.0

2.2.3 Spider plant (*Cleome gynandra*)

Spider plant is locally known as “Sagaa” and is grown for the domestic market. During the year under review, the area, volume and value increased by 15, 59 and 72 percent respectively. 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 safety and healthy. The counties that led in production of this crop were Kisii, Nyamira, Homabay and Bungoma.

Table 36: Performance of spider plant in selected counties for the years 2016-2017

County	Year 2016			Year 2017			% of Total Value
	Area (Ha)	Volume (MT)	Value(KES)	Area (Ha)	Volume (MT)	Value (KES)	
Kisii	218	1,638	95,100,000	545	4,651	235,824,525	23.7
Nyamira	492	2,493	108,610,000	680	6,396	200,778,000	20.2
Homabay	762	2,276	75,901,667	523	2,513	105,937,763	10.7
Bungoma	155	1,228	29,289,000	134	1,758	68,860,000	6.9
Kisumu	192	1,878	63,762,925	189	1,845	130,802,687	13.2
Migori	262	1,539	64,790,118	238	1,586	50,384,200	5.1
Kiambu	101	898	30,705,000	101	1,162	32,330,000	3.3
Kakamega	136	506	17,180,000	219	750	30,952,500	3.1
Bomet	18	145	6,200,000	39	395	28,400,000	2.9
Busia	97	408	19,500,000	108	307	21,765,000	2.2
Siaya	75	309	11,155,000	93	420	16,650,000	1.7
Kericho	41	244	12,150,000	46	270	13,334,000	1.3
Nandi	49	282	9,762,395	47	264	9,960,000	1.0
Vihiga	22	99	5,315,000	34	160	8,763,333	0.9
Baringo	34	173	4,959,000	54	259	7,764,000	0.8
UasinGishu	25	111	3,167,500	41	329	7,055,000	0.7
Others	177	903	21,851,594	195	990	24,354,137	2.5
Total	2,854	15,128	579,399,199	3,285	24,055	993,915,145	100.0

2.2.4 Pumpkin leaves (*Cucurbita maxima*)

Pumpkin leaves are a common vegetable in 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 821Ha producing 6,546tons valued at Kshs146Million. This represented an increase in area and volume by 15.4, 17.9 and 15.1 percent respectively compared to 2016. The county's leading in values were Kisii, Bungoma and Kakamega with 31.5, 8.0 and 6.3 percent of the total value.

Table 18: Performance of Pumpkin Leaves in selected counties for the years 2016-2017

County	Year 2016			Year 2017			% of Total Value
	Area (Ha)	Volume (MT)	Value(KES)	Area (Ha)	Volume (MT	Value (KES)	
Kisii	146	1,890	45,560,000	148	1,920	46,004,000	31.5
Bungoma	41	278	5,758,000	57	543	11,690,000	8.0
Kakamega	18	235	6,617,500	25	441	9,240,000	6.3
Kisumu	30	240	7,240,000	32	250	8,240,000	5.6
Migori	97	452	9,900,162	98	514	7,660,000	5.2
Nyamira	36	353	4,642,750	52	402	7,426,000	5.1
Siaya	30	360	8,400,000	40	340	7,400,000	5.1
Meru	46	229	6,044,000	43	228	5,874,000	4.0
Homabay	27	140	4,200,000	28	192	5,760,000	3.9
Machakos	33	93	3,181,200	46	132	4,741,200	3.2
Embu	34	286	3,160,000	39	329	4,040,000	2.8
Nairobi	22	220	3,300,000	23	230	3,400,000	2.3
Kirinyaga	3	18	393,000	13	106	3,060,000	2.1
Kiambu	5	100	3,000,000	5	100	3,000,000	2.1
Busia	30	107	2,665,000	31	107	2,812,000	1.9
Elgeyo Marakwet	24	98	2,735,000	25	99	2,750,000	1.9
Vihiga	23	94	2,060,000	20	92	2,040,000	1.4
Nandi	11	57	1,485,000	13	66	1,730,000	1.2
Baringo	4	17	52,500	20	88	1,672,500	1.1
West Pokot	5	66	1,420,000	5	74	1,585,000	1.1
Nakuru	9	60	1,037,000	13	100	1,557,000	1.1
Kwale	14	69	1,445,000	15	78	1,520,000	1.0
Others	26	93	2,553,000	34	117	2,822,700	1.9
Total	711	5,553	126,849,112	821	6,546	146,024,400	100.0

2.2.5 Leaf Amaranth (*Amaranthus Sp*)

Leaf Amaranth also known as African Spinach and 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 2,053Ha producing 17,979tons valued at Kshs575.291Million. This represented an increase in area volume and value by 10, 14 and 20percent respectively compared to 2016.

Table 19: Performance of Leaf Amaranth in selected counties for the years 2016-2017

County	Year 2016			Year 2017			% of Total Value
	Area (Ha)	Volume (MT)	Value(KES)	Area (Ha)	Volume (MT	Value (KES)	
Kwale	220	2,700	106,000,000	230	2,820	106,200,000	18.5
Nyamira	74	2,193	107,580,000	92	2,664	105,860,000	18.4
Kisii	205	2,569	59,490,000	138	2,025	92,400,000	16.1
Bomet	77	634	14,527,200	100	2,480	72,000,000	12.5
Kiambu	105	1,057	32,660,000	140	1,440	40,930,000	7.1
Kilifi	171	1,282	17,722,000	238	1,219	25,113,805	4.4
Bungoma	56	300	16,956,000	53	655	24,350,000	4.2
Migori	193	928	16,324,000	195	939	18,234,000	3.2
Vihiga	55	264	13,095,000	60	286	13,465,000	2.3
Mombasa	120	735	14,869,805	173	333	10,400,007	1.8
Homabay	116	474	10,603,750	110	458	9,450,000	1.6
Busia	74	262	9,940,008	69	196	9,005,000	1.6
Kakamega	109	269	6,126,000	100	247	8,812,500	1.5
Machakos	40	170	5,100,000	40	170	5,100,000	0.9
Tana River	16	135	4,700,000	16	142	4,935,000	0.9
Nandi	21	163	3,377,429	28	207	4,435,314	0.8
Nairobi	9	71	1,885,907	10	150	3,969,686	0.7
Others	206	1,556	38,837,970	263	1,549	20,630,873	3.6
Total	1,867	15,760	479,795,068	2,053	17,979	575,291,185	100.0

2.2.6 Grain Amaranth (*Amaranthus Sp.*)

Grain Amaranth is largely produced for making flour and as a food additive. . In 2017, the area under grain amaranth was 487Ha producing 1,474tons valued at Ksh137.09Million. The leading counties were Migori and Kisumu accounting for 80.85 and 10.58 percent of the country's total value.

Table 20: Performance of Grain Amaranth in selected counties for the years 2016-2017

County	Year 2016			Year 2017			% of Total Value
	Area (Ha)	Volume (MT)	Value(KES)	Area (Ha)	Volume (MT	Value (KES)	
Migori	222	572	54,000,110	200	563	83,400,000	60.85
Kisumu	10	400	16,000,000	11	320	14,500,000	10.58
Trans Nzoia	4	16	1,133,333	11	82	8,100,000	5.91
Siaya	45	84	3,555,000	88	199	8,015,000	5.85
Homabay	43	128	10,000,000	28	89	7,100,000	5.18
Busia	21	58	5,700,000	16	48	4,800,000	3.50
Kakamega	63	115	7,390,000	69	72	4,550,000	3.32

Meru	21	50	2,650,000	18	41	2,530,000	1.85
Kisii	4	12	800,000	4	12	920,000	0.67
Tana River	4	16	800,000	4	17	840,000	0.61
Bungoma	32	38	2,560,000	29	11	676,000	0.49
Tharaka Nithi	2	6	500,000	2	7	500,000	0.36
Nakuru	4	29	2,650,000	1	5	450,000	0.33
Nyandarua	4	5	420,000	4	5	430,000	0.31
Vihiga	21	60	5,150,000	2	2	160,000	0.12
Uasin Gishu	1	1	60,000	1	1	62,000	0.05
Nairobi	1	3	125,181	0	1	36,000	0.03
Total	500	1,594	113,493,624	487	1,474	137,069,000	100.00

2.2.7 Pumpkin fruit (*Cucurbita maxima*)

Pumpkin fruit has gained popularity as a baby food, snack and is also used as a food security crop. During the year under review, the area under production increased by 20% from 1,164 Ha in 2016 to 1,394 Ha in 2017. The volume of pumpkin fruit and value in 2017 was 20,698 Tons and Ksh575.7 million respectively. This being an increase of 27% and 12% respectively compared with the previous year. Main production counties are Bomet, Kirinyaga, Siaya, Baringo, Migori and Kakamega.

Table 21: Performance of Pumpkin Fruits in selected counties for the years 2016-2017

COUNTY	YEAR 2016			YEAR 2017			% of Total Value
	AREA (HA)	VOLUME (Tons)	VALUE(KES)	AREA (HA)	VOLUME (Tons)	VALUE(KES)	
Bomet	30	812	29,002,500	153	3,060	63,900,000	11
Kirinyaga	54	1,188	38,811,024	79	1,904	60,490,000	11
Siaya	30	900	45,000,000	40	1,300	58,000,000	10
Baringo	65	1,950	56,553,000	68	2,260	49,885,000	9
Migori	73	1,122	42,554,000	77	1,878	44,451,000	8
Kakamega	55	2,384	47,582,000	55	1,119	35,435,500	6
Meru	63	490	16,300,000	65	812	22,992,500	4
Bungoma	38	420	13,700,000	54	906	19,005,000	3
Homabay	171	659	27,460,000	108	937	18,795,000	3
ElgeyoMarakwet	40	749	18,138,000	40	760	18,738,000	3
Kisii	19	225	6,005,000	60	649	16,000,000	3
Murang'a	31	621	31,923,750	81	401	15,727,000	3
Machakos	70	205	8,985,000	68	408	14,520,000	3
TaitaTaveta	20	380	7,003,000	18	420	13,800,000	2
Kericho	33	480	12,900,000	36	360	13,349,000	2
Kitui	72	522	13,958,000	74	480	13,300,000	2
Others	301	3,243	95,892,220	320	3,045	97,292,191	17

TOTAL	1,164	16,349	511,767,494	1,394	20,698	575,680,191	100
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2.3 Aromatic Plants

Aromatics crops accounted for of the total value of horticultural products by value. The area under production increased from 8,702Ha in 2015 to 9,387 due to good returns per unit weight while production increased from 90,256tons to 94,491 representing 8 and 6 percent growth respectively. The value increased form 3.2Bilion in 2015 to 3.34Billion in 2016 representing 3 percent increase. The leading crops in this category were Bulb onions, spring onions and Coriander accounting for 58, 16 and 10 percent respectively.

Table 22: Summary of the performance of Aromatics for the years 2016-2017

Crops	Year 2016			Year 2017			% of Total Value
	Area (Ha)	Volume (MT)	Value(KES)	Area (Ha)	Volume (MT	Value (KES)	
Bulb onion	7,205	82,202	4,365,720,329	6,590	80,602	3,558,538,599	58.0
Spring onion	1,846	17,582	454,578,681	2,259	21,831	553,354,135	16.3
Coriander	1,153	6,165	177,913,348	1,218	6,372	180,851,071	9.6
Bell pepper	648	4,046	196,667,193	776	5,008	266,451,504	7.1
Leeks	334	3,360	62,398,240	297	3,221	67,136,751	2.9
Long cayenne	327	2,821	151,814,204	331	3,258	162,572,075	2.3
African Birds Eye	87	1,297	74,698,000	112	1,648	91,789,500	1.27
Bullet chillies	135	799	40,403,160	132	820	41,256,885	0.57
Chives	32	192	13,524,900	43	283	20,661,070	0.51
Celery	21	339	11,704,275	25	452	15,308,000	0.46
Garlic	223	2,204	171,020,000	254	2,379	173,700,000	0.37
Rosemary	334	3,360	62,398,240	297	3,221	67,136,751	0.2
Tumeric	7	140	1,404,500	3	60	605,600	0.16
Ginger	19	64	3,285,000	8	22	930,055	0.15
Parsley	8	47	2,187,000	8	49	2,397,000	0.07
Mint	4	24	1,400,000	6	27	1,369,000	0.04
Total	8,702	90,256	3,257,445,439	9,387	94,491	3,347,433,934	100

2.3.1 Bulb onion(*Allium cepa* L.)

Production of Bulb onion is mainly done for the domestic market. The demand of onions in Kenya surpasses the local supply resulting to the importation of bulb onion from the neighboring countries especially Tanzania. During the year under review, 2017 the area under production was 6,590 Ha producing 80,602 Tons valued at Ksh3.6 Billion. However, this represented a decrease of 9%, 2% and 18% respectively to the previous year. The decrease is attributed competition from Tanzania. Poor quality of the Kenyan onions also results to poor prices as compared to Tanzanian onions. There is potential to

increase production by expanding the area under irrigable agriculture and enhancing 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 Meru, Nyeri, Bungoma, Siaya, Narok and Kajiado.

Table 23: Performance of Bulb onions in major counties for the years 2016-2017

COUNTY	YEAR 2016			YEAR 2017			% of Total Value
	AREA (HA)	VOLUME (Tons)	VALUE(KES)	AREA (HA)	VOLUME (Tons)	VALUE(KES)	
Meru	1,201	9,807	454,445,000	837	11,316	607,385,507	17
Nyeri	1,181	16,823	601,665,000	1,198	16,429	496,137,454	14
Bungoma	427	5,889	258,700,000	549	8,529	399,450,000	11
Siaya	74	973	67,460,000	204	5,041	291,671,740	8
Narok	916	7,750	289,300,025	840	5,880	276,150,000	8
Mandera	250	3,150	194,500,000	305	3,903	230,053,000	6
Lamu	138	2,368	136,800,000	138	2,436	143,640,000	4
West Pokot	309	4,620	183,300,000	353	3,765	113,550,000	3
Trans Nzoia	194	2,604	988,224,400	153	2,524	103,458,400	3
Homabay	490	3,828	160,385,000	291	2,202	99,240,000	3
Kajiado	147	1,822	51,435,650	190	2,358	67,620,650	2
Kiambu	54	706	42,662,500	90	1,178	65,989,500	2
Kisii	200	2,754	136,220,007	144	1,480	62,498,755	2
Laikipia	58	928	49,223,606	90	1,351	56,880,000	2
Machakos	125	1,522	62,550,008	111	1,196	56,800,000	2
Nakuru	91	679	30,461,250	104	1,334	48,810,000	1
Others	1,351	15,979	658,387,883	995	9,680	439,203,593	12
TOTAL	7,205	82,202	4,365,720,329	6,590	80,602	3,558,538,599	100

Production of Bulb onion is mainly done for the domestic market. The demand of onions in Kenya surpasses the local supply resulting to the importation of bulb onion from the neighboring countries especially Tanzania. During the year under review, 2017 the area under production was 6,590 Ha producing 80,602 Tons valued at Ksh3.6 Billion. However, this represented a decrease of 9%, 2% and 18% respectively to the previous year. The decrease is attributed competition from Tanzania. Poor quality of the Kenyan onions also results to poor prices as compared to Tanzanian onions. There is potential to increase production by expanding the area under irrigable agriculture and enhancing 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 Meru, Nyeri, Bungoma, Siaya, Narok and Kajiado.

2.3.2 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 22, 24 and 22percent respectively. The leading counties were Nakuru, Narok, Elgeyo Marakwet, and Bungoma.

Table 24: Performance of Spring onions in selected counties for the years 2016-2017

County	Year 2016			Year 2017			% of Total Value
	Area (Ha)	Volume (MT)	Value(KES)	Area (Ha)	Volume (MT	Value (KES)	
Nakuru	260	3,160	73,036,000	212	2,045	72,577,000	13.1
Narok	179	1,960	36,000,004	254	3,020	66,800,002	12.1
ElgeyoMarakwet	164	1,780	62,622,500	163	1,495	59,797,500	10.8
Bungoma	22	170	4,010,400	166	2,439	51,030,000	9.2
Meru	28	821	25,332,500	143	1,879	39,432,500	7.1
Homabay	185	1,173	37,705,000	147	1,094	36,915,000	6.7
Nyamira	94	911	12,220,000	123	1,506	27,028,000	4.9
Kisii	176	1,944	57,776,003	159	1,818	25,920,134	4.7
Nandi	114	1,029	24,522,384	125	1,169	24,241,352	4.4
Nyandarua	22	330	6,885,000	39	585	23,405,000	4.2
Kiambu	73	291	11,312,000	84	461	14,624,000	2.6
Kirinyaga	14	270	10,500,000	15	300	12,000,000	2.2
Embu	34	420	9,600,000	39	530	11,100,000	2.0
Vihiga	33	213	11,540,000	31	213	10,490,000	1.9
Kericho	35	314	8,703,000	39	344	9,683,600	1.7
Migori	49	348	14,392,000	40	272	9,368,008	1.7
Baringo	28	156	3,012,857	72	454	9,048,571	1.6
Others	339	2,293	45,409,034	409	2,207	49,893,467	9.0
Total	1,846	17,582	454,578,681	2,259	21,831	553,354,135	100.0

2.3.3 Coriander (*Coriandrum sativum*)

Coriander is a popular herb grown for its aromatic leaves mainly for the domestic market. The herb is also slowly gaining interest in export market as a combination with other herbs and spices. During the year under review, the area under production was 1,218 Ha, producing 6,372 Tons valued at Ksh180.8 Million. This represented a slight increase in area, volume and value of 6%, 3% and 2% respectively compared with 2016. Kiambu County still remained the leading county in production accounting for 70% of the total production and value.

Table 44: Performance of coriander in selected counties for the years 2016-2017

County	Year 2016			Year 2017			% of Total Value
	Area (Ha)	Volume (MT)	Value(KES)	Area (Ha)	Volume (MT	Value (KES)	
Kiambu	888	4,856	126,460,300	942	4,976	126,623,400	70.0
Kajiado	20	220	4,000,000	30	250	7,500,000	4.1
Meru	7	63	2,515,200	25	186	5,914,927	3.3
Murang'a	25	91	6,123,600	26	98	5,679,840	3.1
Nakuru	37	162	4,527,500	26	110	4,987,500	2.8
Machakos	36	96	4,650,000	31	98	4,875,000	2.7
Makueni	18	178	8,340,000	20	150	4,250,000	2.3
Nairobi	5	36	3,634,148	10	44	2,794,368	1.5
Baringo	10	38	2,100,000	12	46	2,300,000	1.3
Homabay	13	13	1,950,000	15	15	2,250,000	1.2
Kericho	6	30	1,675,000	9	40	2,215,000	1.2
UasinGishu	3	14	437,000	9	46	2,172,000	1.2
Bungoma	5	14	600,000	8	28	1,400,000	0.8
Migori	21	60	750,000	4	48	1,231,500	0.7
Mombasa	2	20	600,000	4	40	1,200,000	0.7
TaitaTaveta	19	134	5,410,000	1	45	920,000	0.5
Kwale	3	20	640,000	2	20	680,000	0.4
Embu	4	10	400,000	3	15	600,000	0.3
Others	32	110	3,100,600	42	117	3,257,536	1.8
Total	1,153	6,165	177,913,348	1,218	6,372	180,851,071	100.0

2.3.4 Long cayenne (*Capsicum annum*)

This is a hot type of pepper produced for domestic and export markets. During the year under review, the area under long cayenne increased by 1.5 percent from 327Ha to 331Ha. The volume produced increased by 15.5 percent from 2,821tons in 2016 to 3,258tons in 2017 with the values earned increasing by 7.1 percent in 2017 compared to 2016. The counties with the highest values were Taita Taveta, Kajiado, Makueni and Machakos accounting for 20.9, 13.5, 10.9 and 9.8 percent respectively of the country's total value.

Table 25: Performance of Long Cayenne in selected counties for the years 2016-2017

County	Year 2016			Year 2017			% of Total Value
	Area (Ha)	Volume (MT)	Value(KES)	Area (Ha)	Volume (MT	Value (KES)	
Taita Taveta	69	826	38,785,000	43	671	33,935,002	20.9
Kajiado	20	140	18,400,000	20	400	22,000,000	13.5
Makueni	17	234	16,445,000	18	240	17,700,000	10.9

Machakos	12	120	12,000,000	16	160	16,000,000	9.8
Migori	14	196	11,760,000	20	294	13,718,400	8.4
Kwale	27	244	9,453,000	28	264	9,920,000	6.1
Tana River	18	270	7,100,000	18	284	7,455,000	4.6
Laikipia	16	147	8,704,000	12	112	6,400,000	3.9
Bungoma	15	30	1,800,000	17	112	5,600,000	3.4
Bomet	5	48	3,200,000	6	60	3,600,000	2.2
Elgeyo Marakwet	18	142	3,520,000	15	123	3,334,000	2.1
Garissa	28	80	2,990,000	28	84	3,139,500	1.9
Meru	7	62	2,820,000	14	99	3,043,824	1.9
Mandera	4	15	1,000,000	11	46	2,990,000	1.8
Busia	2	18	1,200,000	12	54	2,960,000	1.8
Nakuru	20	64	3,405,000	11	55	1,974,000	1.2
Trans Nzoia	14	52	2,480,004	14	35	1,740,500	1.1
Others	20	134	6,752,200	28	166	7,061,850	4.3
Total	327	2,821	151,814,204	331	3,258	162,572,075	100.0

2.3.5 Bullet chilies (*Capsicum annum*)

In the year 2017, the area under Bullet chilies declined by 2%, while the volumes and values increased by 2.6 and 2 % respectively. The growth of this enterprise has been slowed down by the export self-burn 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 2016 were Kajiado, Machakos, Meru and Taita Taveta.

Table 26: Performance of Bullet Chilies in selected counties for the years 2016-2017

County	Year 2016			Year 2017			% of Total Value
	Area (Ha)	Volume (MT)	Value(KES)	Area (Ha)	Volume (MT)	Value ((KES)	
Kajiado	8	120	6,800,000	10	150	9,000,000	21.8
Machakos	8	80	8,000,000	8	80	8,000,000	19.4
Meru	15	94	4,685,000	17	133	6,053,085	14.7
Kiambu	6	69	5,000,000	6	80	5,000,000	12.1
TaitaTaveta	9	102	3,366,000	9	102	3,366,000	8.2
Kilifi	18	64	3,732,000	18	66	2,872,800	7.0
Kwale	9	98	2,300,000	8	80	2,000,000	4.8
Makueni	5	13	1,350,660	4	11	1,254,000	3.0
Bomet	2	23	1,105,000	2	20	1,200,000	2.9
Homabay	31	62	1,240,000	33	50	990,000	2.4
Nakuru	12	40	2,000,000	2	13	650,000	1.6
Embu	2	10	250,000	3	13	310,000	0.8
Kakamega	3	9	270,000	3	9	277,500	0.7

West Pokot	6	14	260,000	8	12	240,000	0.6
Vihiga	1	2	44,500	1	2	43,500	0.1
Total	135	799	40,403,160	132	820	41,256,885	100.0

2.3.6 African birds eye chillies (*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 African bird's eye chillies, volume and value increased by 28.7, 27.1 and 22.9 percent respectively compared to 2016. In 2017 Meru, Kwale and Kilifi were the leading counties accounting for 52.36, 16.34 and 14.66 percent of the countries value respectively.

Table 27: Performance of African birds eye chillies in selected counties for the years 2016-2017

County	Year 2016			Year 2017			% of Total Value
	Area (Ha)	Volume (MT)	Value(KES)	Area (Ha)	Volume (MT	Value (KES)	
Meru	16	789	47,340,000	18	801	48,060,000	52.36
Kwale	14	240	12,000,000	15	300	15,000,000	16.34
Kilifi	9	24	1,575,000	30	262	13,459,000	14.66
Kisumu	4	53	3,150,000	5	58	3,150,000	3.43
Turkana	7	26	2,300,000	8	30	3,000,000	3.27
Kajiado	4	2	120,000	6	60	2,600,000	2.83
Tana River	16	42	1,880,000	16	44	1,924,000	2.10
West Pokot	8	64	3,600,000	3	25	1,400,000	1.53
Bomet	2	18	1,000,000	2	20	1,200,000	1.31
TharakaNithi	6	15	900,000	6	15	900,000	0.98
Nandi	2	18	540,000	2	25	750,000	0.82
Kisii	1	5	250,000	2	6	300,000	0.33
Kakamega	0	0	18,000	0	1	24,000	0.03
Vihiga	1	1	25,000	1	1	22,500	0.02
Total	87	1,297	74,698,000	112	1,648	91,789,500	100.00

2.3.7 Bell pepper (*Capsicum annum 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. The area under production increased from 648ha in 2016 to 776ha while production rose from 4,046tons to 5,008tones representing 19.7 and 23.8percent increase. The value increased from 196.67million to 266.45million in 2017 a 35.5percent increase.

Table 28: Performance of Bell pepper in selected counties for the years 2016-2017

County	Year 2016			Year 2017			% of Total Value
	Area (Ha)	Volume (MT)	Value(KES)	Area (Ha)	Volume (MT	Value (KES)	
Kwale	28	268	7,200,000	90	600	47,500,000	17.8
Makueni	63	520	43,900,000	53	480	37,670,000	14.1
Kiambu	80	621	30,788,400	62	494	29,192,000	11.0
Murang'a	57	242	11,840,000	59	395	26,400,000	9.9
Machakos	44	142	3,060,000	76	458	16,740,000	6.3
Kajiado	41	249	12,850,250	51	258	12,450,125	4.7
Nyeri	44	241	8,244,000	50	264	9,525,646	3.6
Turkana	14	18	10,000,000	15	18	9,000,000	3.4
Tana River	22	340	7,300,000	22	357	7,665,000	2.9
Mandera	22	64	10,240,000	25	73	7,260,000	2.7
Garissa	59	235	6,560,000	59	247	6,888,000	2.6
Nandi	18	135	6,150,000	19	160	6,867,500	2.6
Nairobi	5	28	1,514,043	10	118	6,595,028	2.5
Kilifi	21	173	5,499,000	46	158	6,099,405	2.3
Trans Nzoia	3	4	290,000	12	120	6,000,000	2.3
Nakuru	14	77	4,311,000	19	128	6,000,000	2.3
Laikipia	19	202	9,980,200	13	142	4,900,000	1.8
Embu	10	118	3,000,000	11	123	3,460,000	1.3
Meru	5	30	1,800,000	10	60	3,300,000	1.2
Others	79	340	12,140,300	73	355	12,938,800	4.9
Total	648	4,046	196,667,193	776	5,008	266,451,504	100.0

2.3.8 Leeks (*Allium ampeloprasum*)

The area under production decreased from 113ha in 2016 to 104 in 2017 while production decreased from 720tons to 671tons. However, the value increased from 19.6million to 22.65million in 2017 representing a 15.5percent increase due to improved farm gate prices.

Table 29: Performance of Leeks in selected counties for the years 2016-2017

County	Year 2016			Year 2017			% of Total Value
	Area (Ha)	Volume (MT)	Value(KES)	Area (Ha)	Volume (MT	Value (KES)	
Taita Taveta	39	270	7,506,000	38	267	7,604,166	33.6
Nakuru	56	366	9,150,000	37	233	7,490,000	33.1
Kirinyaga	10	50	1,250,000	20	130	5,700,000	25.2

Nairobi	1	13	743,900	2	20	847,503	3.7
Nyeri	1	4	236,500	1	4	280,468	1.2
Meru	4	7	259,976	4	6	269,998	1.2
Migori	1	4	240,000	1	4	220,000	1.0
Bungoma	1	2	80,000	1	2	94,000	0.4
Uasin Gishu	1	4	146,000	1	4	150,000	0.7
Total	113	720	19,612,376	104	671	22,656,135	100.0

2.3.9 Garlic (*Allium sativum*)

Garlic is a leading source of income among the herbs and spices farmers. In 2017 the area under production was 254Ha producing 2,379tons valued at Kshs 173.7Million. This represented an increase in area, volume and value by 14, 15 and 4 percent respectively compared to 2016. The leading counties were Meru, Isiolo and Nyeri that accounted for 46.6, 28.5 and 10.0 percent of the country total value.

Table 30: Performance of Garlic in selected counties for the years 2016-2017

County	Year 2016			Year 2017			% of Total Value
	Area (Ha)	Volume (MT)	Value(KES)	Area (Ha)	Volume (MT	Value (KES)	
Meru	102	1,100	88,500,000	102	1,010	81,000,000	46.6
Isiolo	46	554	38,250,000	69	758	49,500,000	28.5
Nyeri	35	198	17,250,000	36	210	17,400,000	10.0
Kakamega	8	110	10,200,000	8	110	10,200,000	5.9
Narok	10	78	6,800,000	13	93	7,960,000	4.6
Kisii	8	59	2,900,000	6	50	2,500,000	1.4
Bungoma	2	12	3,600,000	8	70	2,000,000	1.2
Bomet	6	48	1,680,000	7	51	1,880,000	1.1
Kirinyaga	4	20	1,050,000	5	22	1,070,000	0.6
Uasin Gishu	3	25	790,000	1	5	190,000	0.1
Total	223	2,204	171,020,000	254	2,379	173,700,000	100.0

2.3.10Rosemary (*Rosamarinus officinalis*)

During the year under review, the area under production decreased from 334ha to 297ha and production from 3,360tons to 3,221 tons in 2017 representing a 11 and 4 percent drop while the value increased from 62.4million in 2016 to 67.13million in 2017 a 8 percent increase. The leading counties in value in 2017 were Homabay, Narok and Kajiado accounting for 33.8, 31.4 and 14.3 percent of the countries value respectively.

Table 31: Performance of Rosemary in selected counties for the years 2016-2017

County	Year 2016	Year 2017	
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	Area (Ha)	Volume (MT)	Value(KES)	Area (Ha)	Volume (MT)	Value (KES)	% of Total Value
Homabay	119	747	22,396,500	80	480	22,680,000	33.8
Narok	30	670	20,100,000	33	710	21,100,000	31.4
Kajiado	122	1,605	8,045,740	147	1,800	9,600,650	14.3
Nairobi	0	3	2,400,000	1	5	4,100,000	6.1
Kiambu	13	44	2,892,000	6	33	2,545,200	3.8
Kakamega	1	11	305,000	6	43	2,105,000	3.1
West Pokot	5	85	174,000	6	90	1,890,000	2.8
Trans Nzoia	4	18	900,000	4	20	1,300,000	1.9
Embu	6	42	1,365,000	4	17	550,000	0.8
Bomet	2	12	355,000	3	13	420,000	0.6
Nakuru	29	117	3,070,000	5	3	345,000	0.5
Kisii	0	4	160,000	1	6	293,721	0.4
Nyeri	0	1	155,000	0	1	167,180	0.2
Vihiga	2	2	80,000	1	1	40,000	0.1
Total	334	3,360	62,398,240	297	3,221	67,136,751	100.0

2.4 Asian Vegetables

Table 32: Summary of the Performance of Asian Vegetables for the years 2016-2017

County	Year 2016			Year 2017			% of Total Value
	Area (Ha)	Volume (MT)	Value(KES)	Area (Ha)	Volume (MT)	Value (KES)	
Egg plant	689	7,630	240,823,530	996	11,381	329,311,082	35.1
Karella	642	6,668	190,131,030	1,262	14,185	307,197,082	32.7
Okra	506	3,793	167,687,040	663	5,740	272,217,013	29.0
Dudhi	104	797	26,191,600	108	827	27,111,600	2.9
Valore	30	115	4,624,560	35	143	1,732,104	0.2
Tindori	9	40	2,647,000	3	16	475,000	0.1
Total	1,980	19,043	632,104,760	3,067	32,292	938,043,881	100.0

2.4.1 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 particularly at the coastal region particularly in tourist hotels.

In 2017, the area under production went up by 45% from 689ha in 2016 to 996 in 2017 while production increased from 7,630 tons to 11,381 representing 49% increase. The value increased from 240.8 million to 329.3 million a 37% increase.

Table 33: Performance of Eggplant in selected counties for the years 2016-2017

County	Year 2016			Year 2017			% 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
Machakos	91	1,422	50,370,000	109	1,726	59,470,000	18.1
Kirinyaga	60	1,030	38,700,000	72	1,327	46,145,000	14.0
Kilifi	57	604	13,678,000	134	1,342	32,518,442	9.9
Meru	81	961	33,938,400	73	864	31,558,400	9.6
Makueni	26	560	13,416,020	111	1,135	18,134,000	5.5
Kiambu	19	301	7,209,200	33	394	10,444,000	3.2
Murang'a	42	307	7,450,000	43	364	7,782,240	2.4
Baringo	4	72	4,200,000	11	116	6,500,000	2.0
Trans Nzoia	45	270	8,100,000	35	210	6,300,000	1.9
Kajiado	26	265	5,809,390	31	250	6,025,000	1.8
Mombasa	9	76	3,240,000	11	140	5,000,000	1.5
Bungoma	11	630	19,620,000	14	142	4,320,000	1.3
TaitaTaveta	26	348	18,840,000	17	111	1,680,000	0.5
ElgeyoMarakwet	7	56	1,400,000	7	56	1,400,000	0.4
Others	15	159	3,452,500	11	30	2,034,000	0.6
Total	689	7,630	240,823,530	996	11,381	329,311,082	100.0

2.4.2 Dudhi (*Lagenaria siceraria*)

Dudhi is also known as bottle gourd and is grown for export market as well as small high end market. The area under production increased from 104ha to 108ha while production increased from 797tons to 827tons a 4.1percent and 3.8percent increase respectively. The value also increased from 26.19Milion to Kshs 27.11 as compared to 2016 a 3.5 percent increase.

Table 34: Performance of Dudhi in selected counties for the years 2016-2017

County	Year 2016			Year 2017			% of Total Value
	Area (Ha)	Volume (MT)	Value(KES)	Area (Ha)	Volume (MT	Value (KES)	
Meru	41	420	11,726,600	43	429	11,926,600	44.0
Murang'a	34	216	7,560,000	35	231	7,950,000	29.3
Machakos	10	70	2,800,000	10	70	2,800,000	10.3
Mombasa	6	21	1,785,000	6	22	1,860,000	6.9
Tharaka Nithi	9	51	1,275,000	9	53	1,375,000	5.1

Kajiado	4	19	1,045,000	5	22	1,200,000	4.4
Total	104	797	26,191,600	108	827	27,111,600	100.0

2.4.3 Karella (*Momordica charantia*)

Bitter guard (Karella) is grown for both export and domestic market. During the year under review, the area, volume and value increased from 642Ha to 1,2624Ha while production increased from 6,668tons to 14,185tons. The value of karella increased from 190.1million to 307.2million in 2017 as compared to 2016.

Table 35: Performance of Karella in selected counties for the years 2016-2017

County	Year 2016			Year 2017			% 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	28.8
Machakos	91	1,422	50,370,000	109	1,726	59,470,000	19.0
Kirinyaga	60	630	8,700,000	372	4,327	46,145,000	14.8
Meru	81	961	33,938,400	73	864	31,558,400	10.1
Makueni	26	560	13,416,020	111	1,135	18,134,000	5.8
Kilifi	57	604	13,678,000	134	1,342	12,518,442	4.0
Kiambu	19	301	7,209,200	33	394	10,444,000	3.3
Baringo	4	72	7,200,000	11	116	9,500,000	3.0
Murang'a	42	307	7,450,000	43	364	7,782,240	2.5
Trans Nzoia	45	270	8,100,000	35	210	6,300,000	2.0
Kajiado	26	265	5,809,390	31	250	6,025,000	1.9
Mombasa	9	76	3,240,000	11	140	5,000,000	1.6
Bungoma	11	630	19,620,000	14	142	4,320,000	1.4
Total	642	6,668	190,131,030	1,262	14,185	307,197,082	100.0

2.4.4 Okra(*Hibiscus esculentus*)

Okra is produced for export market as well as locally especially by the coastal people. There is a growing market in the hotel industry. The area under production in 2017 was 663 Ha producing 5,740 Tons valued Ksh. 272.2 million. The crop is mainly grown in ASAL counties. Major producing counties are Kwale, Kilifi, Makueni, Murang'a, Machakos among others.

Table 36: Performance of Okra in selected counties for the years 2016-2017

County	Year 2016	Year 2017	
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	Area (Ha)	Volume (MT)	Value(KES)	Area (Ha)	Volume (MT	Value (KES)	% of Total Value
Kwale	190	1,802	83,650,020	202	2,507	112,957,000	41.5
Kilifi	171	877	32,798,000	264	1,434	88,829,743	32.6
Makueni	21	153	7,335,420	81	633	21,735,420	8.0
Mombasa	38	216	10,800,000	24	330	16,500,000	6.1
Murang'a	30	314	16,550,000	29	315	15,750,000	5.8
Machakos	7	82	3,000,000	15	172	7,280,000	2.7
Turkana	5	42	3,650,000	5	29	2,862,250	1.1
Kitui	20	165	2,500,000	20	155	2,400,000	0.9
Kajiado	9	74	4,845,000	10	109	1,780,000	0.7
TaitaTaveta	8	18	712,000	8	16	800,000	0.3
Homabay	2	20	800,000	2	20	780,000	0.3
Meru	5	30	1,034,600	4	20	534,600	0.2
Vihiga	0	1	12,000	0	0	8,000	0.0
Total	506	3,793	167,687,040	663	5,740	272,217,013	100.0

2.5 Medicinal Plants

During the year under review, medicinal plants showed a decrease in the land under production as well as the quantity produced from 490ha in 2016 to 460ha in 2017 and 3,989tons to 3,492tons. This decrease is attributed to harvesting of the plants without planting more due to increased demand for the products. However the value increased from 125M to 128M due to increased farm gate prices. Farmers should be encouraged to plant more of medicinal plants to supply the growing demand for medicinal crops.

Table 37: Summary of the Performance of Medicinal Plants for the years 2016-2017

Crop	Year 2016			Year 2017			% of Total Value
	Area (Ha)	Volume (MT)	Value(KES)	Area (Ha)	Volume (MT	Value (KES)	
Tunguja	148	1,696	70,800,000	148	1,696	70,800,000	55
Curci	240	1,944	36,627,500	183	1,244	31,640,000	25
Aloe	12	126	3,691,000	41	240	11,208,000	9
Stevia	72	99	10,394,000	46	87	8,620,000	7
Bixa	16	75	1,880,000	26	172	3,660,000	3
Moringa	9	37	1,225,500	15	41	1,370,000	1
Methi	2	13	1,032,500	2	13	1,032,500	1
Total	498	3,989	125,650,500	460	3,492	128,330,500	100

3 CHAPTER THREE

3.1 FRUITS

3.1.1 Overall performance

In 2017, fruits contributed Ksh60.7 billion from 3.396 million tons of produce that came from 185,211 hectares orchards. During the year under review, the area, yields and value increased from 163,624Ha in 2016 to 185,211Ha in 2017 a 13percent increase, while production increased from 3,039,773 tons in 2016 to 3,396,582tons a 12 percent increase. The value on the other hand increased from 53.24 billion to 60.73billion a 14 percent increase compared to 2016. This was due to a marginal increase in farm gate prices.

The major fruit grown in order of importance are; banana 35.86percent, mangoes 19.28percent, pineapples 18.07percent, avocado 8.91percent, water melon 4.77percent paw paw 4.97percent, oranges 3.97percent, passion fruit 1.52percent and tamarillo 0.72percent of the total value of fruits. The potential of most fruits remain unexploited. However, there is potential for growth due to increasing demand both in domestic and export market for fresh fruits and fruit products such as juices and concentrates. In addition there are a number of initiatives to support fruit production and value addition. Challenges in fruit cultivation include low adoption of modern technologies, inadequate quality planting materials, high post-harvest losses and prevalence of pests and diseases.

Table 38: Fruits Production in selected Counties 2016-2017

CROP	YEAR 2016			YEAR 2017			% of Total Value
	Area (Ha)	Volume (MT)	Value(KES)	Area (Ha)	Volume (MT	Value (KES)	
Bananas	63,299	1,288,588	16,977,130,503	76,608	1,586,792	21,778,033,350	35.86
Mango	49,098	781,147	11,892,258,419	50,550	705,195	11,713,206,615	19.28
Pineapples	8,956	376,811	10,939,497,861	9,239	403,055	10,977,753,692	18.07
Avocado	13,017	246,057	4,632,454,856	14,992	287,268	5,413,241,240	8.91
Pawpaw	8,112	107,591	2,205,138,840	9,907	135,924	3,020,362,099	4.97
Water Melon	6,345	87,307	1,966,293,771	7,017	119,991	2,897,394,293	4.77
Oranges	7,268	85,234	2,166,297,973	8,976	89,542	2,408,321,080	3.97
Purple Passion	2,151	22,031	1,058,742,346	2,096	17,561	920,712,317	1.52
Tamarillo	863	8,158	412,670,375	918	10,089	434,974,195	0.72
Tangerines	891	8,087	160,137,640	1,247	12,775	299,961,712	0.49
Apples	473	4,778	222,183,500	474	4,686	275,432,000	0.45
Lemon	1,346	11,618	215,841,968	1,361	10,764	217,863,354	0.36
Yellow Passion	751	5,203	176,604,495	639	4,422	134,222,101	0.22
Guava	412	3,027	66,565,775	500	3,328	79,980,877	0.13
Strawberry	34	447	67,100,800	43	427	65,958,368	0.11
Plums	216	1,971	31,064,887	233	2,282	36,948,410	0.06

Custard Apple	132	609	14,058,004	127	1,171	22,956,577	0.04
Loquats	168	769	15,646,560	185	908	16,778,112	0.03
Grapes	46	147	14,525,000	46	138	13,624,000	0.02
White Sapote	46	193	9,320,554	53	264	9,967,836	0.02
Total	163,624	3,039,773	53,243,534,127	185,211	3,396,582	60,737,692,228	100.00

3.1.2 Banana (*Musa* sp)

Banana (*Musa* sp)

Banana is one of the most important fruits in the country accounting for 14.49 percent of total value of horticulture. It is a major source of income and food security among smallholders and large scale farmers. In 2017, there was an increase in the area (21%), volume (23%), and value (28%). This positive increase in area, volume and value can partly be attributed to good enterprise income and promotion by most county governments. The main varieties grown include: dessert banana cultivars - Grand Nain, Gross Mitchel, Williams's hybrid, Valery, Chinese Cavendish, Giant Cavendish, Dwarf Cavendish and Apple banana. Cooking cultivars include: GradiShisikame, Mutahato, Uganda green and Ng'ombe and multipurpose cultivars such as Muraru and Gold finger. The leading counties in banana production were. The main challenges in banana production are nematodes and diseases like panama, sigatoka and bacterial wilt.

Table 39: Production of Bananas 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)	
Meru	7,503	276,919	2,911,079,680	10,265	291,262	3,135,449,680	14
Kisii	3,919	77,415	1,337,769,300	6,165	111,062	2,039,860,000	9
Murang'a	5,987	154,172	1,611,924,000	6,181	186,468	1,978,373,000	9
Kiambu	4,288	63,300	895,420,000	6,233	117,951	1,621,226,500	7
Kirinyaga	6,670	145,036	1,864,092,640	6,263	117,356	1,608,706,400	7
TaitaTaveta	2,954	78,329	810,836,100	2,625	69,114	1,397,831,618	6
Nyamira	2,259	42,475	553,600,086	3,943	65,300	1,268,482,819	6
TharakaNithi	3,734	76,633	967,680,000	3,742	76,860	1,100,400,000	5
Embu	862	27,584	644,464,000	2,826	75,450	986,637,500	5
Homabay	567	6,095	107,941,500	1,478	40,552	928,500,825	4
Tana River	1,852	23,091	683,615,000	1,861	24,246	717,795,750	3
Kakamega	3,824	34,717	608,156,000	2,210	31,742	713,162,770	3
Lamu	1,998	27,805	47,435,593	2,008	29,290	495,448,721	2
Bungoma	1,987	40,098	522,038,000	3,165	39,167	437,705,000	2
Nyeri	1,876	37,230	294,865,460	1,340	28,986	421,053,759	2

Others	13,019	177,689	3,116,213,144	16,304	281,987	2,927,399,008	13
TOTAL	63,299	1,288,588	16,977,130,503	76,608	1,586,792	21,778,033,350	100

3.1.3 Mango (*Mangifera indica*)

Mangoes production has been on the increase due to increased demand for fresh market, fruits processing, and health concerns. In 2017, the area under mangoes was 50,550Ha with a production of 705,195 Metric tons, valued at Kshs11.73 billion as compared to Kshs11.89 billion achieved in 2016 from 781,147 tons of mangoes in 2016. The area under production increased by 1,452ha a 3.0% rise while production and value decreased by 75,952tons and Kshs179.051million a 9.7% and 1.5% drop respectively. This decrease can be attributed to poor rains received in 2017 as mangoes are mainly produced under rain fed conditions. The leading counties in mangoes ranked by value were; Makueni, Machakos, Kilifi and Kwale whose contribution to the total value was 28.2, 21.5, 15.0 and 7.7 percent of the country's total value respectively. The main challenges in mango are fruit flies, rust, disease free seedlings that are true to type and marketing of the fruits especially during periods of glut.

Table 40: Production of Mango in selected Counties, 2016-2017

COUNTY	2016			2017			% of Total Value
	AREA (HA)	VOLUME (Tons)	VALUE(KES)	AREA (HA)	VOLUME (Tons)	VALUE(KES)	
Makueni	12,422	225,300	3,617,524,000	12,344	179,978	3,297,988,000	28.2
Machakos	6,387	168,552	2,764,574,500	6,475	135,345	2,523,955,000	21.5
Kilifi	9,155	108,139	1,844,181,000	9,733	107,328	1,751,980,000	15.0
Kwale	3,898	53,339	934,555,000	4,181	54,075	904,175,490	7.7
Lamu	2,543	40,566	607,723,820	2,555	42,594	639,610,011	5.5
Meru	3,025	27,742	533,531,950	3,550	32,824	427,613,950	3.7
Tana River	1,356	32,066	211,268,000	1,363	33,669	221,831,400	1.9
ElgeyoMarakwet	751	14,343	132,782,530	881	16,308	221,768,720	1.9
Embu	850	14,450	332,000,000	947	14,733	215,040,000	1.8
Kitui	1,359	12,580	122,331,600	1,405	15,370	187,170,000	1.6
Murang'a	926	9,192	130,583,000	911	9,660	155,960,500	1.3
Tharaka Nithi	1,165	10,233	124,448,750	1,257	12,950	142,580,000	1.2
Siaya	258	4,885	107,300,000	276	4,819	117,069,000	1.0
West Pokot	331	4,118	83,040,000	332	5,259	99,350,400	0.8
Busia	408	4,643	86,282,250	450	5,002	82,049,548	0.7
Migori	393	4,295	63,978,000	438	5,109	71,792,400	0.6
Garissa	589	5,186	67,052,500	592	5,445	70,405,125	0.6
Mombasa	152	2,040	36,800,000	162	2,330	47,400,000	0.4
Homabay	238	2,330	44,254,000	250	2,549	40,365,225	0.3

Others	2892	37148	48047519	2448	19,848	495,101,846	4.2
Total	49,098	781,147	11,892,258,419	50,550	705,195	11,713,206,615	100.0

3.1.4 Avocado (*Persea americana*)

In 2017, avocado contributed Kshs5.41 billion from 287,268 tons of fruits accounting for 8 percent by value of the fruit sub-sector. The value increased from Kshs4.63Billion in 2016 to Kshs5.41 Billion in 2017 which was a 16.9 percent increase from 2016. This was due to improved prices in the international market as well as opening of the Russian market that demands high volumes of Fuertes avocados which were not very popular in the European market.

The area under production increased from 13,017 Ha in 2016 to 14,992 in 2017 a 15.2 percent change that was attributed to planting of new orchards in non-traditional areas of the rift valley and western. Production increased from 246,057 tons to 287,262 in 2017 representing 16.7 percent increase. The leading county was Murang'a that accounted for 46.9 by value of produce followed by Kiambu Kisii and Nyamira that contributed 10.5, 9.2 and 5.5 percent respectively of the total value.

Table 61: Production of Avocado in selected Counties, 2016-2017

COUNTY	2016			2017			% of Total Value
	AREA (HA)	VOLUME (Tons)	VALUE(KES)	AREA (HA)	VOLUME (Tons)	VALUE(KES)	
Murang'a	4,310	118,356	2,438,827,000	4,319	120,645	2,537,654,000	46.9
Kiambu	677	12,382	407,352,500	1,505	29,004	570,675,000	10.5
Kisii	1,519	29,383	487,573,500	1,529	31,383	497,573,500	9.2
Nyamira	1,454	24,435	198,640,199	1,474	28,435	298,640,199	5.5
Meru	458	4,671	66,462,112	743	15,253	225,268,512	4.2
Embu	702	13,388	204,125,000	692	13,180	195,000,000	3.6
Kirinyaga	422	5,023	100,172,000	433	5,282	120,532,000	2.2
Bungoma	266	4,275	78,103,900	268	3,802	105,552,100	1.9
Machakos	519	4,172	112,439,000	526	3,467	104,964,000	1.9
Migori	297	3,365	72,589,182	407	4,585	88,778,515	1.6
ElgeyoMarakwet	276	2,477	58,821,600	277	2,992	72,063,400	1.3
Nyeri	295	4,425	70,270,402	279	4,117	67,736,000	1.3
Bomet	209	2,602	35,055,000	235	3,383	52,962,000	1.0
Homabay	131	856	27,570,000	168	1,389	52,212,000	1.0
Kericho	76	1,413	43,073,750	78	1,373	42,913,750	0.8
Vihiga	196	6,039	103,284,667	244	1,907	41,780,000	0.8
Nakuru	116	1,464	36,369,000	127	1,574	38,359,666	0.7

Narok	115	1,071	38,260,000	121	1,225	37,730,000	0.7
Nandi	123	1,718	39,485,375	105	1,478	36,966,475	0.7
Others	856	4,542	13,980,669	1,462	12,794	225,880,123	4.2
Total	13,017	246,057	4,632,454,856	14,992	287,268	5,413,241,240	100.0

3.1.5 Oranges (*Citrus sinensis*)

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 1.65 percent of horticulture. As compared to 2016, there was increase in area (23%), volumes (5%) and values (11%). However, the productivity decreased in 2017 from 12tons/ha to 10 tons/ha. This is attributed to long dry spell in 2017.

The main challenges in oranges production are citrus greening, aphids, scales and clean planting materials.

Table 41: Production of Oranges 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)	
Machakos	1,098	20,030	737,245,000	1,290	21,480	751,600,000	31
Kwale	1,840	26,320	489,900,000	3,080	31,120	616,800,000	26
Lamu	822	8,233	247,084,000	826	8,645	259,438,200	11
Kilifi	834	6,689	174,092,084	1,574	5,900	143,646,000	6
Kitui	3	4	259,200	240	3,310	116,000,000	5
Trans Nzoia	158	1,124	10,339,939	178	3,510	111,128,000	5
Murang'a	352	5,761	101,895,000	353	5,992	106,080,000	4
Makueni	1,171	9,334	189,529,880	423	3,057	75,425,000	3
Elgeyo Marakwet	205	1,688	49,234,550	210	1,646	48,037,048	2
Kisumu	25	185	4,993,895	69	427	22,113,250	1
Meru	70	390	18,231,500	81	394	21,739,850	1
Mombasa	62	456	13,320,000	62	496	14,520,000	1
Embu	25	364	17,520,000	39	458	12,975,000	1
Laikipia	24	261	13,250,000	19	209	11,800,000	0
Siaya	24	33	2,525,000	31	251	10,945,000	0
Others	554	4,362	96,877,925	502	2,649	86,073,732	4
Total	7,268	85,234	2,166,297,973	8,976	89,542	2,408,321,080	100

3.1.6 Lemons (*Citrus limon*)

The demand for lemon fruits has been on the increase due to health concerns among the middle class of Kenya. During the year under review, there was increase in area (1%), and Value (1%). However, there was decline in Volumes (7%). This decrease in volumes, like in many other rain dependent crops was as a result of the long drought of late 2016 and early 2017.

Table 42: 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)	
Kwale	244	2,500	32,875,000	349	3,490	53,300,000	24
Lamu	149	1,788	35,760,000	150	1,877	37,548,000	17
Tana River	100	562	7,610,000	101	770	27,405,000	13
Elgeyo Marakwet	138	1,093	20,509,600	137	1,044	19,593,846	9
Homabay	17	218	10,061,228	40	277	18,965,000	9
Kilifi	160	1,274	40,460,022	94	550	10,069,500	5
Machakos	84	616	9,900,000	85	342	8,690,000	4
Makueni	119	947	16,987,444	83	698	7,394,000	3
Migori	6	53	1,325,000	15	143	5,825,000	3
Meru	36	232	2,914,000	39	158	4,011,200	2
West Pokot	13	85	2,315,750	16	109	3,185,750	1
Baringo	55	255	3,110,000	56	258	2,915,000	1
Embu	14	270	2,800,000	17	281	2,894,375	1
Taita Taveta	105	1,253	15,422,000	12	125	2,775,000	1
Kajiado	16	99	1,946,000	18	79	2,320,000	1
Others	90	373	11,845,924	149	564	10,971,683	5
Total	1,346	11,618	215,841,968	1,361	10,764	217,863,354	100

3.1.7 Tangerines (*Citrus tangerina*)

Tangerines production in the country is majorly done in Kwale, Makueni and Kilifi counties accounting for 83.6, 6.7, and 4.3 percent respectively. During 2017, the area, production and value were higher as compared to 2016. The area under production increased by 40 percent while the quantities produced rose by 58 percent as compared to 2016. On the other hand, the value increased by 87 percent as a result of increased production and improved farm gate prices.

Table 43: Production of Tangerines in selected Counties, 2016-2017

COUNTY	2016			2017			% of Total Value
	AREA (HA)	VOLUME (Tons)	VALUE(KES)	AREA (HA)	VOLUME (Tons)	VALUE(KES)	

Kwale	378	5,225	110,250,000	720	9,840	250,640,000	83.6
Makueni	123	627	19,161,000	128	645	20,223,000	6.7
Kilifi	264	1,393	14,371,860	270	1,475	12,973,000	4.3
Elgeyo Marakwet	22	159	3,192,500	22	136	2,722,379	0.9
Embu	13	250	2,700,000	15	248	2,648,333	0.9
Taita Taveta	16	107	2,179,000	17	109	2,260,000	0.8
Meru	27	90	2,014,000	28	91	1,991,000	0.7
Mombasa	10	60	1,500,000	10	60	1,500,000	0.5
Kiambu	2	35	960,000	3	36	1,110,000	0.4
Bungoma	2	20	800,000	2	21	805,000	0.3
Machakos	9	45	800,000	9	45	800,000	0.3
Kajiado	7	9	320,000	7	10	400,000	0.1
Others	19	67	1,889,280	17	59	1,889,000	0.6
Total	891	8,087	160,137,640	1,247	12,775	299,961,712	100.0

3.1.8 Passion fruit (*Passiflora edulis*)

Passion fruit is an important commercial fruit in Kenya. The major passion fruit varieties grown are the purple and the yellow passion. The fruits are used for juice, both fresh juice and processed juice. The Purple passion fruit is also exported mainly to Europe and Middle East.

During the years under review, the area under production decreased from 2,151ha in 2016 to 2,096 in 2017 a 2.6percent decrease. Production and value also dropped by 4,470 tons and Kshs138million which represented a 25.5 percent and 15.0percent decrease respectively.

The decline is mainly contributed to diseases such as fusarium wilt, dieback and woodiness virus disease. Quality of passion fruit is another challenge facing farmers especially the brown spot and poor post-harvest handling. This has affected the global competitiveness of the passion fruit from Kenya.

The leading counties in production of purple passion are Elgeyo Marakwet, Uasin Gishu, Kirinyaga, Embu and Baringo counties.

Table 44: Production of Purple Passion Fruits in major Counties, 2016-2017

COUNTY	YEAR 2016			YEAR 2017			% of Total Value
	AREA (HA)	VOLUME (Tons)	VALUE(KES)	AREA (HA)	VOLUME (Tons)	VALUE(KES)	
ElgeyoMarakwet	438	4,809	205,760,000	381	4,672	206,600,000	22
UasinGishu	82	1,023	72,980,000	128	1,132	60,076,000	7
Kirinyaga	70	943	46,890,000	75	1,112	53,120,000	6
Embu	47	752	41,400,000	60	934	52,700,000	6
Baringo	33	307	15,235,000	88	1,114	49,020,000	5
Kiambu	51	548	32,964,000	55	743	43,212,000	5
Meru	87	540	25,050,000	100	806	42,890,000	5

Kitui	12	44	2,200,000	24	66	42,000,000	5
Machakos	112	607	41,766,000	108	620	41,950,000	5
Narok	84	870	38,880,005	92	848	41,130,000	4
Bomet	114	1,790	107,400,000	134	484	29,040,000	3
Nyamira	59	323	21,737,000	62	616	28,580,200	3
Trans Nzoia	43	442	26,890,000	41	380	22,690,000	2
Kericho	30	500	27,927,500	28	435	22,270,750	2
Siaya	34	143	9,572,800	52	392	21,792,000	2
Others	857	8,392	342,090,041	670	3,207	163,641,367	18
TOTAL	2,151	22,031	1,058,742,346	2,096	17,561	920,712,317	100

3.1.9 Passion fruit (*Passiflora edulis*) Yellow passion

Yellow passion is gaining prominence due to its demand in fruit juice processing. During the years under review, the area under production increased from 639ha in 2016 to 751 in 2017 a 17.5percent increase. Production and value also increased by 781 tons and Kshs42.38million which represented a 17.7 percent and 31.6percent increase respectively.

Major counties producing yellow passion are Kwale, Meru, Bungoma, Kilifi, and Embu.

Table 66: Production of Yellow Passion Fruits in major Counties, 2016-2017

COUNTY	YEAR 2016			YEAR 2017			% of Total Value
	AREA (HA)	VOLUME (Tons)	VALUE(KES)	AREA (HA)	VOLUME (Tons)	VALUE(KES)	
Kwale	63	706	21,680,000	115	1,075	30,450,000	23
Meru	102	848	41,755,000	41	443	21,645,000	16
Bungoma	50	450	14,500,000	55	475	13,500,000	10
Embu	31	247	10,770,000	36	261	11,670,000	9
Kilifi	27	163	4,890,000	47	516	11,267,440	8
Kitui	12	44	1,300,000	50	400	10,000,000	7
Migori	205	920	19,134,000	98	395	9,100,000	7
Busia	21	239	6,147,166	20	172	4,613,332	3
Taita Taveta	35	146	3,474,170	46	177	4,094,170	3
Kisumu	51	94	3,803,159	53	106	3,803,159	3
Siaya	4	18	400,000	20	128	3,640,000	3
Kisii	39	457	16,610,000	15	98	3,440,000	3
Tharaka Nithi	15	60	2,600,000	15	60	2,600,000	2
Vihiga	4	22	1,150,000	9	51	2,400,000	2
Kakamega	16	52	3,040,000	18	53	1,338,000	1
Others	77	738	25,351,000	3	14	661,000	0
TOTAL	751	5,203	176,604,495	639	4,422	134,222,101	100

3.1.10 Pineapples (*Ananas comosus*)

Pineapple is grown for both fresh market and processing market. The main variety grown is smooth cayenne. During the year under review, the area, production and value of the crop were 9,239Ha, 403,055Tons and Kshs10.98 Billion respectively.

The major counties accounting for 90 of total value of pineapple were Murang'a, Kiambu, Homabay, Kericho and Machakos and individually accounting for 42.8percent, 17.0percent, 12.3percent, 10.0 percent and 5.1 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 67: Production of Pineapples in selected Counties, 2016-2017

County	Year 2016			Year 2017			% of Total Value
	Area (Ha)	Volume (MT)	Value(KES)	Area (Ha)	Volume (MT)	Value ((KES)	
Murang'a	3,507	161,855	4,693,795,000	3,507	161,855	4,693,795,000	42.8
Kiambu	1,326	58,680	1,825,218,000	1,344	59,659	1,865,650,000	17.0
Homabay	851	25,957	1,663,712,000	916	40,086	1,353,570,000	12.3
Kericho	1,242	72,990	1,095,220,000	1,250	73,076	1,097,974,000	10.0
Machakos	400	21,000	565,000,000	619	27,753	565,000,000	5.1
Migori	421	15,665	362,035,034	482	15,394	370,661,000	3.4
Kilifi	215	2,925	133,532,800	230	6,624	269,173,100	2.5
Nyamira	102	1,350	79,780,000	209	5,345	210,110,000	1.9
Kwale	27	285	16,630,000	35	432	139,540,000	1.3
Busia	75	1,898	75,850,000	69	1,890	73,430,000	0.7
Bomet	67	3,092	57,843,000	64	2,200	64,000,000	0.6
Nandi	109	2,599	64,579,000	99	2,268	53,918,000	0.5
Kisii	64	1,651	58,200,067	63	1,390	52,000,000	0.5
Siaya	50	500	29,000,000	54	1,032	37,280,000	0.3
TharakaNithi	48	730	29,000,000	60	1,030	30,900,000	0.3
Others	452	5,636	190,102,961	239	3,023	100,752,592	0.9
TOTAL	8,956	376,811	10,939,497,861	9,239	403,055	10,977,753,692	100.0

3.1.11 Pawpaw (*Carica papaya*)

In year 2017, pawpaw contributed Ksh. 3.02 billion up from Ksh. 2.21 billion in 2016 accounting for 22% increase. Pawpaw accounted for 2 percent by value of the subsector. The area and production increased from 8,112 Ha in 2016 to 9,907 Ha in 2017. Productivity was estimated at 135,924 Tons in 2017, representing 37% increase from 107,591 Tons in 2016. The increased hectareage and productivity was attributed to better rains in 2017 compared to 2016.

Pawpaw is mainly grown in the arid and semi- arid counties. The leading counties in pawpaw by value in 2017 were Kilifi, Meru, Machakos, Migori, Kwale, Kitui, ElgeyoMarakwt and TharakaNithi. The main varieties grown include Mountain, Solo, Sunrise, Honey dew and Hawaii. Other varieties include Red Royal, Sunrise hybrid, Sunrise Pekerra and Solo Sunset.

The major challenges facing pawpaw production are lack of quality planting material arising from genetic erosion due to open pollination. Kenya has no established seed producers for pawpaw and mainly imports basic seed for multiplication. Other serious challenge in pawpaw are insect pests especially spider mites and diseases such as powdery mildew and papaya ring spot virus

Table 68: Production of Pawpaw in Major counties 2016-2017

COUNTY	YEAR 2016			YEAR 2017			% of Total Value
	AREA (HA)	VOLUME (Tons)	VALUE(KES)	AREA (HA)	VOLUME (Tons)	VALUE(KES)	
Kilifi	450	22,537	172,748,592	780	18,362	477,775,000	16
Meru	532	9,944	289,175,000	502	10,479	310,451,500	10
Machakos	1,742	15,108	326,068,000	1,616	14,283	287,950,000	10
Migori	240	3,412	58,830,850	434	9,005	270,559,000	9
Kwale	814	7,862	94,230,000	1,345	20,005	209,550,000	7
Kitui	138	1,931	27,627,480	415	9,320	206,313,650	7
Elgeyo Marakwet	187	4,921	136,362,282	199	6,274	171,527,173	6
Tharaka Nithi	1,093	9,150	187,300,000	976	8,588	160,570,000	5
Makueni	506	7,430	225,510,000	273	5,195	118,384,960	4
Embu	8	72	1,000,000	441	3,608	68,087,500	2
Baringo	186	2,135	35,106,667	200	2,681	66,257,548	2
Homabay	167	2,054	71,753,120	286	2,466	63,435,000	2
Siaya	121	1,104	42,520,000	166	1,545	60,500,000	2
West Pokot	266	1,824	54,766,000	285	1,940	58,220,000	2
Tana River	229	2,740	52,300,000	230	2,877	54,915,000	2
Others	1,433	15,367	429,840,849	1,759	19,297	435,865,768	14
TOTAL	8,112	107,591	2,205,138,840	9,907	135,924	3,020,362,099	100

3.1.12 Melon (*Cucumis melo* sp.)

The area under Melons was 7,017 Ha in 2017 up from 6,345 Ha in 2016, producing 119,991 Tons valued at Kshs2.897 billion. The area, production and value increase by 11%, 37% and 47% respectively in 2017. Melons are grown mainly in arid and semi-arid counties under irrigation in irrigation schemes and near rivers. Use of hybrid seeds has also contributed high productivity. The main production counties are Lamu, Machakos, Tana River, Garissa, Makueni, Kilifi, Migori, Kwale, Elgeyo Marakwet, Embu and Meru.

The main market for Melons is in cities, other urban centers and hotels. The demand for Melons is high during dry seasons.

Major challenges in melon production are pests and diseases. Some common pests include melon fly, aphids and thrips and diseases include powdery mildew and fusarium wilt. High cost of seeds especially the hybrid seeds is a challenge to farmers.

Table 69: Production of Water Melons in major Counties 2016- 2017

COUNTY	YEAR 2016			YEAR 2017			% of Total Value
	AREA (HA)	VOLUME (Tons)	VALUE(KES)	AREA (HA)	VOLUME (Tons)	VALUE(KES)	
LAMU	1,097	7,785	140,013,000	1,102	19,174	430,136,550	15
Machakos	1,477	14,758	342,660,000	1,363	13,618	366,460,000	13
Tana River	438	11,092	242,360,000	440	11,647	254,478,000	9
Migori	368	6,154	90,980,000	384	9,574	234,950,000	8
Makueni	149	3,610	92,350,160	394	10,010	230,365,000	8
Homabay	310	6,060	140,075,000	339	6,923	207,082,000	7
Baringo	199	3,972	84,900,000	379	7,606	156,670,000	5
Kitui	176	2,982	60,076,000	240	4,665	103,420,000	4
Meru	212	4,852	107,438,928	247	4,894	98,678,928	3
Elgeyo Marakwet	149	2,952	74,023,885	183	3,360	84,797,338	3
Narok	92	2,440	64,000,000	118	2,839	74,605,000	3
Embu	212	3,595	61,900,000	202	4,083	66,962,500	2
Busia	166	2,022	38,690,000	147	2,104	65,750,000	2
Garissa	185	1,728	62,240,000	186	1,814	65,352,000	2
Kwale	40	1,200	21,600,000	130	3,150	61,950,000	2
Others	1,076	12,106	342,986,798	1,163	14,531	395,736,977	14
TOTAL	6,345	87,307	1,966,293,771	7,017	119,991	2,897,394,293	100

3.1.13 Custard apple (*Annona reticulata*)

During the year under review, the area under custard apples decreased from 132Ha in 2016 to 127Ha representing a 43percentgrowth. The quantity produced also increased from 609 tons in 2016 to 1,171 tons in 2017 while the value increased from Kshs14.058 million to Kshs22.96 million in 2017 representing 5 percent and 7 percent growth respectively. Custard apple popularity has increased in the resent past due to the health benefits associated with its consumption.

Table 70: Production of Custard apple in selected Counties 2016-2017

COUNTY	YEAR 2016			YEAR 2017			% of Total Value
	AREA (HA)	VOLUME (Tons)	VALUE(KES)	AREA (HA)	VOLUME (Tons)		
Taita Taveta	50	225	6,750,000	50	800	16,000,000	69.7
Nakuru	9	49	1,430,000	11	54	1,592,000	6.9
Kilifi	38	120	735,000	26	105	826,000	3.6
Trans Nzoia	3	30	600,000	8	40	800,000	3.5
Nandi	2	20	760,000	2	21	779,000	3.4
Elgeyo Marakwet	8	80	1,698,004	5	59	777,577	3.4
Kakamega	4	18	580,000	5	18	534,000	2.3
Makueni	5	25	500,000	5	28	500,000	2.2
Samburu	1	6	200,000	3	11	400,000	1.7
Baringo	5	14	400,000	4	11	300,000	1.3
Embu	2	4	100,000	2	5	150,000	0.7
Laikipia	2	4	123,000	2	4	123,000	0.5
Tharaka Nithi	2	4	100,000	2	4	90,000	0.4
Vihiga	1	3	50,000	1	4	53,000	0.2
Kitui	2	8	32,000	2	8	32,000	0.1
Total	132	609	14,058,004	127	1,171	22,956,577	100.0

3.1.14 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 increased from 168ha to 185 while production increased from 769tons to 908tons representing 11 and 18 percent increase respectively. The value increased from 15.6Milion to 16.77Milion a 7percent increase. The major counties in production of loquat by value were Meru, Kiambu, Vihiga and Makueni accounting for 14.4, 13.2 12.6 and 11.9 percent respectively of the country's total value. The major constraints to increased production of loquat are prevalence of insect pests and diseases, high postharvest losses, lack of suitable varieties and unavailability of quality planting material.

Table 45: Production of Loquats in selected counties 2016-2017

COUNTY	2016			2017			% of Total Value
	AREA (HA)	VOLUME (Tons)	VALUE(KES)	AREA (HA)	VOLUME (Tons)	VALUE(KES)	
Meru	47	178	2,325,880	49	187	2,415,880	14.4
Kiambu	18	77	1,600,000	19	69	2,220,000	13.2
Vihiga	14	70	2,104,000	15	71	2,112,000	12.6
Makueni	4	90	1,800,000	5	100	2,000,000	11.9
Kisii	11	78	1,626,680	11	80	1,575,000	9.4
Bungoma	5	17	830,000	11	100	1,200,000	7.2
Nakuru	14	60	880,000	16	78	1,058,102	6.3
Nyamira	10	50	970,000	10	50	970,000	5.8
Nairobi	8	48	960,000	8	48	960,000	5.7
Uasin Gishu	3	11	956,000	6	17	546,000	3.3
Nandi	2	4	400,000	2	5	460,000	2.7
Kericho	1	15	390,000	1	16	403,000	2.4
Kirinyaga	1	2	280,000	2	16	320,000	1.9
Nyeri	11	47	236,000	11	51	248,130	1.5
Laikipia	7	5	100,000	7	5	100,000	0.6
Embu	6	6	60,000	6	6	60,000	0.4
Tharaka Nithi	2	2	40,000	2	2	40,000	0.2
Trans Nzoia	1	4	40,000	1	4	40,000	0.2
Narok	2	4	28,000	2	4	30,000	0.2
Kakamega	1	1	20,000	1	1	20,000	0.1
Total	168	769	15,646,560	185	908	16,778,112	100.0

3.1.15 White sapote (*Casimiroa edulis*)

White sapote is mainly grown in the high and medium altitudes areas of the country. During the year under review, the area increased from 46Ha to 52Ha representing a 15 percent growth. The production and value also increased from 193 tons in 2016 to 256 tons in 2017 while the value increased from Kshs9.32M to Kshs9.96M representing 37percent and 7percent growth respectively.

The major counties in production of white sapote were Nairobi, Narok, Meru and Kakamega accounting for 40percent, 15.4 percent 10.5percent and 10 percent of the country's total value. The major constraint to increased production of white sapote are lack of suitable varieties, unavailability of quality planting material and limited knowledge on appropriate agronomic practices.

Table 46: Production of white sapote in selected counties 2016-2017

COUNTY	2016			2017			% of Total Value
	AREA (HA)	VOLUME (Tons)	VALUE(KES)	AREA (HA)	VOLUME (Tons)	VALUE(KES)	
Nairobi	1	10	4,000,000	1	10	4,000,000	40.1
Narok	13	41	1,590,000	11	31	1,540,000	15.4
Meru	2	5	220,000	3	21	1,050,000	10.5
Kakamega	4	26	884,000	3	26	1,000,000	10.0
Kitui	8	24	720,000	8	24	720,000	7.2
Bungoma	2	6	120,000	6	70	700,000	7.0
Trans Nzoia	3	28	500,000	5	36	307,500	3.1
Elgeyo Marakwet	5	18	899,554	5	5	213,336	2.1
Nandi	2	20	200,000	2	21	210,000	2.1
Nakuru	2	10	100,000	2	10	100,000	1.0
Uasin Gishu	0	1	20,000	1	5	50,000	0.5
Laikipia	1	2	31,000	1	2	31,000	0.3
Embu	2	2	20,000	3	3	30,000	0.3
Vihiga	2	1	16,000	2	1	16,000	0.2
Total	46	193	9,320,554	53	264	9,967,836	100.0

3.1.16 Apples (*Malus domestica*)

Apples are grown by smallholder farmers for the domestic market. During the year under review, apple had mixed performance. The area increased from 56Ha to 79Ha while production increased from 589 tons to 623 tons representing 41 percent and 6 percent increases. This was attributed to promotion of the crop and some young orchards reaching production stage. However, the value decreased from Kshs42.5M to Kshs34.3M representing 19 percent drop which was as a result of reduced farm gate prices due to cheap imports. The major counties in production of apple were Kiambu, Narok, and Nakuru accounting for 36.7, 32.0 and 15.6 percent of the total county's value. The major constraint to increased production of apple is unavailability of quality and appropriate planting materials.

Table 73: Production of Apples in selected counties 2016-2017

COUNTY	2016			2017			% of Total Value
	AREA (HA)	VOLUME (Tons)	VALUE(KES)	AREA (HA)	VOLUME (Tons)	VALUE(KES)	
Meru	386	4,300	193,000,000	386	4,300	193,000,000	70.1
Nyandarua	7	48	3,920,000	19	99	61,530,000	22.3
Kiambu	13	78	4,175,000	7	57	5,675,000	2.06
Kitui	16	80	4,400,000	13	78	4,400,000	1.60
Baringo	10	25	2,500,000	12	30	3,000,000	1.09

Narok	13	111	6,220,000	5	30	3,000,000	1.09
Nakuru	16	91	6,257,500	14	44	2,996,000	1.09
Vihiga	6	30	1,200,000	7	30	1,200,000	0.44
Trans Nzoia	1	5	250,000	2	5	270,000	0.10
Uasin Gishu	1	2	96,000	6	5	196,000	0.07
Elgeyo Marakwet	1	4	80,000	1	4	80,000	0.03
Laikipia	1	4	80,000	1	4	80,000	0.03
West Pokot	2	0	5,000	2	0	5,000	0.002
Total	473	4,778	222,183,500	474	4,686	275,432,000	100.0

3.1.17: TREE TOMATO (*Cyphomandrabetacea*)

Tree tomato also known as Tamarillo is an emerging commercial crops 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 benefit associated with it. The fruits are eaten fresh when ripe or processed into juice.

The area under production was 918 Ha in 2017, a 6% increase from 863 Ha in 2016. Productivity rose by 24% from 8,158 MT in 2016 to 10,089 MT in 2017. The value of was close to half a billion in 2017.

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 viruses. 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 2017.

Table 74: Production of Tree Tomato in major Counties, 2016-2017

COUNTY	YEAR 2016			YEAR 2017			% of Total Value
	AREA (HA)	VOLUME (Tons)	VALUE(KES)	AREA (HA)	VOLUME (Tons)	VALUE(KES)	
Kiambu	189	2,765	139,767,000	148	2,673	150,136,200	35
Narok	83	1,065	77,100,000	102	2,028	70,305,005	16
Kirinyaga	18	310	22,250,000	48	756	44,400,000	10
Nakuru	75	639	30,790,000	131	1,075	39,633,571	9
Nyandarua	74	558	28,775,000	95	612	29,190,000	7
Laikipia	33	374	18,288,000	30	328	13,620,000	3
Meru	20	334	12,681,000	24	354	13,281,000	3
Elgeyo Marakwet	53	402	8,050,000	81	603	12,079,800	3
Tharaka Nithi	12	158	10,190,000	12	168	9,890,000	2
Nyeri	42	250	16,265,000	21	138	8,242,484	2

Bomet	8	160	6,400,000	10	200	8,000,000	2
Murang'a	38	157	8,649,500	44	136	7,971,500	2
Baringo	53	240	6,986,000	47	230	7,796,735	2
Makueni	-	-	-	10	200	4,000,000	1
Nandi	3	58	3,368,000	6	69	3,881,000	1
Others	164	687	23,110,875	110	519	12,546,900	3
Total	863	8,158	412,670,375	918	10,089	434,974,195	100

Plums(*Prunus domestica*)

Plum is grown mostly for domestic fresh and processing markets. During the year under review, the area under production increased from 216Ha in the year 2016 to 233 Ha in 2017. Production also increased from 1,971 tons to 2,282 tons while the value increased from Kshs31.04M to Kshs36.95M. The major counties in production of plum by value were Kiambu 35.4.6 percent, Nyandarua 17.5 percent, Narok 16.5 percent and Nakuru 15.6 percent respectively.

Table 75: Production of Plums in selected counties 2016-2017

COUNTY	2016			2017			% of Total Value
	AREA (HA)	VOLUME (Tons)	VALUE(KES)	AREA (HA)	VOLUME (Tons)	VALUE(KES)	
Kiambu	41	318	12,440,000	44	450	13,100,000	35
Nyandarua	59	812	5,665,400	65	911	6,474,900	18
Narok	28	191	5,000,000	28	260	6,100,000	17
Nakuru	46	509	5,110,001	54	515	5,752,000	16
Taita Taveta	6	60	600,000	5	59	1,590,000	4
Baringo	10	25	1,250,000	12	30	1,500,000	4
Elgeyo Marakwet	16	23	835,000	10	26	932,000	3
Murang'a	6	14	59,105	10	14	774,510	2
Trans Nzoia	1	10	100,000	2	10	490,000	1
Uasin Gishu	2	8	381	2	6	220,000	1
West Pokot	1	1	5,000	1	1	15,000	0
Total	216	1,971	31,064,887	233	2,282	36,948,410	100

3.1.17Pears (*Pyrus communis*)

The production during the reporting year was 1,937 tons with a value of Ksh93.37 Million. The area under production reduced from 237Ha in 2016 to 212Ha in 2016 representing a 11 percent decrease while production dropped from 2,327 tons in 2016 to 1,937 tons in 2017 representing a 17 percent decrease. Despite the 17percent drop in area and production, the value decreased by 8percent due to the increased farm gate prices in the major producing areas.

Table 76: Production of Pears 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)	
Kiambu	140	1,696	57,120,000	117	1,305	78,150,000	83.7
Narok	14	138	3,660,000	18	186	4,620,000	4.9
Nakuru	34	288	35,752,000	21	160	4,170,000	4.5
Nyandarua	21	63	1,428,000	19	99	2,340,000	2.5
Elgeyo Marakwet	12	35	1,016,241	12	39	1,139,820	1.2
Murang'a	6	65	1,203,007	6	92	978,940	1.0
Baringo	7	18	875,000	8	20	972,222	1.0
Uasin Gishu	2	6	120,000	6	12	720,000	0.8
Trans Nzoia	1	10	100,000	3	15	150,000	0.2
Laikipia	1	8	130,000	1	8	130,000	0.1
Total	237	2,327	101,404,248	212	1,937	93,370,982	100.0

Table 77: Production of Guavas 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)	
Mandera	46	460	23,000,000	56	560	28,000,000	35.0
Makueni	39	780	15,000,000	40	800	16,000,000	20.0
Vihiga	26	49	940,000	60	278	5,445,000	6.8
Homabay	25	176	3,575,000	28	187	4,700,000	5.9
Kiambu	9	89	1,225,000	12	118	4,350,000	5.4
Kilifi	20	126	3,780,000	21	129	3,850,000	4.8
Kisii	12	137	3,220,000	14	132	2,911,250	3.6
Nyamira	11	101	2,006,000	10	100	2,000,000	2.5
Taita Taveta	18	65	949,525	20	110	1,554,037	1.9
Nyandarua	40	75	731,250	65	150	1,462,500	1.8
Embu	9	135	1,350,000	17	120	1,200,000	1.5
Bungoma	18	103	960,000	17	115	1,150,000	1.4
Meru	10	61	1,350,000	11	63	1,110,000	1.4
Others	129	671	8,479,000	130	466	6,248,090	7.8
Total	412	3,027	66,565,775	500	3,328	79,980,877	100.0

Table 78: Production of Strawberries 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)	
Kiambu	22	385	60,820,000	28	355	58,240,000	88.3
Nakuru	5	25	2,050,000	4	20	1,800,000	2.7
Murang'a	2	12	1,400,000	3	13	1,700,000	2.6
Embu	2	12	1,500,000	3	13	1,300,000	2.0
Narok	2	9	970,000	2	9	1,070,000	1.6
Nyeri	2	3	216,800	2	10	1,027,888	1.6
Nairobi	0	1	54,000	1	6	714,480	1.1
Uasin Gishu	0	1	90,000	0	1	106,000	0.2
Total	34	447	67,100,800	43	427	65,958,368	100.0

4 ANNEX1

4.1 NATIONAL SUMMARY

Table 79: Horticulture production performance per crop for 2016-2017

The total area under production in 2017 was **559,992ha** up from **538,879ha** achieved in 2016 while production was **8,033,594tons** compared to **7,531,218tons** that was produced in 2016. The value increased from **kshs136.697 Billion** to **145.381Billion**. This was a 3.9 percent increase in area, 6.7 percent increase in production and 6.3 per cent increase in value from what was achieved in 2016.

Total horticultural production from all the counties

Crop	Year 2016			Year 2017			% of Total Value
	Area (Ha)	Volume (MT)	Value(KES)	Area (Ha)	Volume (MT	Value (KES)	
Irish Potaos	155,929	2,178,315	31,799,178,942	164,231	2,382,799	34,213,641,976	23.5337
Bananas	75,374	1,519,968	19,493,018,257	76,608	1,580,792	21,098,563,350	14.5126
Tomatos	24,111	341,026	13,687,162,311	29,294	509,465	15,199,459,224	10.4549
Pineapples	8,956	376,811	10,939,497,861	9,239	403,055	10,977,753,692	7.5510
Cabbages	26,931	775,994	9,667,526,306	24,303	671,139	8,322,940,003	5.7249
Mango	44,033	512,077	7,852,505,930	42,756	514,101	8,166,730,640	5.6175
Kales	32,347	435,121	6,615,870,235	30,534	413,599	5,942,132,348	4.0873
Avocado	16,478	249,912	4,398,758,203	16,091	267,523	4,530,713,523	3.1164
Gardern Peas	21,151	105,934	3,250,538,967	22,289	109,416	3,657,515,632	2.5158
Bulb Onions	7,205	82,202	4,365,720,329	6,590	80,602	3,558,538,599	2.4477

Cowpeas	50,357	124,957	2,942,678,963	52,199	135,116	3,121,462,213	2.1471
Pawpaws	8,112	107,591	2,205,138,840	9,907	135,924	3,020,362,099	2.0775
Water Melons	6,345	87,307	1,966,293,771	7,017	119,991	2,897,394,293	1.9930
Oranges	7,268	85,234	2,166,297,973	8,976	89,542	2,408,321,080	1.6566
Spinach	6,359	128,947	1,879,393,574	6,977	129,730	2,108,989,995	1.4507
French Beans	5,948	46,222	1,968,975,817	5,682	45,263	2,060,156,025	1.4171
African Night Shade	4,285	38,757	1,607,628,095	4,615	43,794	1,902,495,754	1.3086
Carrots	6,106	93,860	1,468,289,712	6,744	96,968	1,763,089,803	1.2127
Spider Plant	2,854	15,128	579,399,199	3,285	24,055	993,915,145	0.6837
Snow Peas	1,951	11,784	710,907,000	2,049	14,627	967,559,848	0.6655
Purple Passion	2,151	22,031	1,058,742,346	2,096	17,561	920,712,317	0.6333
Pumpkin Fruits	1,164	16,349	511,767,494	1,394	20,698	575,680,191	0.3960
Leaf Amaranth	1,867	15,760	479,795,068	2,053	17,979	575,291,185	0.3957
Spring Onions	1,770	16,478	446,563,190	2,229	21,594	557,673,995	0.3836
Yellow Passion	1,217	13,924	365,572,895	1,650	25,035	518,822,101	0.3569
Tamarilo	863	8,158	412,670,375	918	10,089	434,974,195	0.2992
Lime	985	10,122	260,955,527	1,139	13,839	412,897,170	0.2840
Egg Plant	689	7,630	240,823,530	996	11,381	329,311,082	0.2265
Okra	689	7,630	240,823,530	996	11,381	329,311,082	0.2265
Karella	674	6,899	195,583,530	1,296	14,381	312,311,082	0.2148
Tangerines	891	8,087	160,137,640	1,247	12,775	299,961,712	0.2063
Okra	506	3,793	167,687,040	663	5,740	272,217,013	0.1872
Bell peper	648	4,046	196,667,193	776	5,008	266,451,504	0.1833
Broccoli	624	3,736	190,506,000	525	4,551	257,206,900	0.1769
Slender	403	4,052	193,430,500	641	7,104	228,546,000	0.1572
Lemons	1,460	11,354	216,962,852	1,420	10,369	214,269,354	0.1474
Sweet Melons	559	5,401	182,006,000	541	5,573	211,987,000	0.1458
Jute Mallow	842	5,384	161,993,950	937	5,829	189,044,400	0.1300
Pumpkin Leaves	831	5,624	164,193,950	937	5,829	189,044,400	0.1300
Coriander	1,153	6,165	177,913,348	1,218	6,372	180,851,071	0.1244
Long Cayene	319	2,882	107,496,205	318	3,120	154,722,075	0.1064
Yellow Passion	751	5,203	176,604,495	639	4,422	134,222,101	0.0923
Bixa	2,968	3,265	128,360,000	2,972	3,276	130,538,000	0.0898
African Bird Eye	87	1,297	74,698,000	112	1,648	91,789,500	0.0631
Vine Spinach	103	1,520	66,712,000	208	2,268	91,609,000	0.0630
Grain Amaranthas	485	1,176	117,554,400	503	1,342	91,204,499	0.0627
Grape Fruit	196	2,509	57,656,058	294	4,076	87,931,914	0.0605
Guavas	421	3,117	68,365,775	499	3,328	79,980,877	0.0550
Rosemary	334	3,360	62,398,240	297	3,221	67,136,751	0.0462
Tunguja	160	150	42,000,000	168	160	44,000,000	0.0303

Bullet Chilli	135	799	40,403,160	132	820	41,256,885	0.0284
Plums	216	1,971	31,064,887	132	980	37,948,410	0.0261
Dudhi	103	775	27,011,600	100	794	26,751,600	0.0184
Astromeria	119	1,280	25,430,000	122	1,321	26,420,000	0.0182
Chives	32	192	13,524,900	43	283	20,661,070	0.0142
Turia	91	622	14,160,000	90	624	14,090,000	0.0097
Amni	9	100	4,270,000	64	340	8,250,000	0.0057
Varole	38	235	8,364,560	36	231	8,104,560	0.0056
Stevia	58	193	9,962,500	38	96	7,275,000	0.0050
Tindori	27	233	6,855,000	26	218	6,805,000	0.0047
Aloe Vera	47	129	7,109,000	47	86	6,270,000	0.0043
Arabicum	11	41	3,396,250	18	58	4,480,520	0.0031
Eryngium	4	22	3,450,000	4	22	3,460,000	0.0024
Malabo (Kahurura)	20	65	2,261,000	23	72	2,464,090	0.0017
Moringa	16	33	1,850,000	23	41	1,910,000	0.0013
Hericonia	4	47	1,150,000	4	50	1,250,000	0.0009
Ginger	19	64	3,285,000	8	22	930,055	0.0006
Tumeric	7	140	1,404,500	3	60	605,600	0.0004
Lemon Grass	9	8	632,000	9	8	592,000	0.0004
Leather Leaves	4	20	400,000	2	18	360,000	0.0002
Total	538,879	7,531,218	136,697,405,773	559,992	8,033,594	145,381,318,503	100.00

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

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