AFA

Our Crops, Our Wealth

Food Crops | Horticultural Crops | Coffee | Sugar

Fibre Crops | Nuts & Oil Crops | Miraa, Pyrethrum & Other Industrial Crops

YEAR BOOK OF STATISTICS

2022

Forward

The challenge of food demand brought about by the increasing Kenyan population and the diminishing arable and productive land can only be achieved through vibrant, productive, profitable and sustainable agricultural sector which contributes to nearly 22.4 Per cent to the Gross Domestic product (Economic Survey 2022).

Research in the potential of improving the agricultural sector will continue to be at the forefront of what is needed to address problems and to develop strategic and result- based solutions. Creativity and persistence will further the discoveries of the past and offer new benefits for all.

AFA`s collaboration with other institutions such as KALRO, universities and other research institutions will lead to new discoveries that will ultimately drive innovation, new businesses opportunities, new value added products, new research findings and their extension to the industry and to the general public hence upgrading the value chains of the scheduled crops.

Finally, as we endeavor accelerating efforts to achieve Sustainable Development Goals universally, particularly SDGs 12, which call for Responsible Consumption and Production by 2030, the critical nature of reliable data cannot be underestimated in the planning purposes. Provision of accurate data leads to well-informed decision-making process hence the need of improving the data collection and collation methodologies. In a view of achieving this, the Authority is working very closely with the MoALF&C, the County Governments and other stakeholders in putting up a national one stop agricultural database that will contain all the agricultural data for all the scheduled crops.

Beatrice Nyamwamu
Ag. Director General
Agriculture and Food Authority

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As the team leader of the statistical team, I wish to specifically acknowledge the following officers who worked extra hard to produce this publication.

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Executive Summary

Agriculture and Food Authority is mandated by the Crops Act, 2013 to facilitate marketing and distribution of the scheduled crops through monitoring and dissemination of agricultural market information. Moreover, article 8(j) of the Crops Act mandates the Authority to devise and maintain a system for regularly obtaining information on current and future production, prices and trade movements, thus the production of AFA Year Book of Statistics.

This AFA Yearbook of Statistics 2022 provides in a single volume a comprehensive compilation of regionally and international statistics on major scheduled crops, from 2017-2021.

In the year under review (2021), the growing of crops contributed 16.3 per cent to the overall Gross Domestic Product (Economic Survey 2022). The agriculture sector recorded a drop of 0.1 per cent in 2021 compared to a growth of 5.2 per cent in 2020. The observed performance was attributed to erratic and poorly distributed long rains as well as inadequate short rains.

Coffee production declined by 6.4 per cent from 36.9 thousand tonnes in 2019/20 to 34.5 thousand tonnes in 2020/21 coffee year. The highest sugar production in the industry of 700,241 tons was achieved in 2021, compared to 603,788 tons in 2020 representing a 16 per cent increase largely attributed to improved cane availability in most of the sugar zones.

The total annual production of raw nuts in shell (RNI) of macadamia increased by 8.8 per cent from 39,133 tons recorded in 2020 to 42,562 tons recorded in the year 2021. The increased production is attributed to a rebound of the industry recovering from the effects of Covid 19 that had resulted in reduced economic activities across the country in the previous season.

Dry pyrethrum flowers delivered increased by 75.7 per cent from 284.9 tons in 2020 to 500.6 tons in 2021. Production has been increasing due to the distribution of planting materials by the County governments, processors, individual propagators, inter-farm and other industry stakeholders.

The area under cotton increased by 803 Ha from 9,837 Ha in 2020 to 10,640 Ha in 2021 translating to 8 per cent increase, as a result of GoK intervention through Fibre Crops Directorate in collaboration with the relevant county governments in the issuing of planting materials and pesticides to farmers.

Maize is the country's most important staple food crop, and it contributes significantly to food security. Due to unfavorable weather, especially in the ASALs, national maize production fell by 2 per cent in 2021, from 3.8 million tons in 2020 to 3.3 million tons in 2021.

The area under horticulture production decreased by 6 per cent, from 453,716 ha in 2020 to 426,773 ha. Production decreased by 607,590 tons, or 7 per cent, while value decreased by KES 2.8 billion, compared to the value achieved in 2020. The biggest drop was in the value of fruits, which fell by KES 5.05 billion. Exotic vegetables, Aromatic vegetables, and Asian vegetables increased in value but this was insufficient to offset the drop in value from fruits.

Acronyms and Abbreviations

AFA	Agriculture and Food Authority
ASAL	Arid and Semi-Arid Land
CC	Clean Coffee
CIF	Cost, Insurance and Freight
COMESA	Common Markets for East and Southern Africa
EAC	East African Community
FoB	Freight on Board
FTA	Free Trade Area
GoK	Government of Kenya
HCD	Horticultural Crops Directorate
Ha	Hectares
ICPI	Integrated Coffee Productivity Initiative
KALRO	Kenya Agricultural & Livestock Research Organization
KES	Kenyan Shillings
KIBOS	Kibos Sugar and Allied Industries Limited
KNBS	Kenya National Bureau of Statistics
LB	Pound
MoALF&C	Ministry of Agriculture, Livestock, Fisheries and Cooperatives
MPOICD	Miraa, Pyrethrum and Other Industrial Crops Directorate
MRPD	Market Research and Product Development
MT	Metric Tons
NOCD	Nuts and Oil Crops Directorate

Non-FTA	Non-Free Trade Area
RCN	Raw Cashew Nuts
RNI	Raw Nuts in Shell
SONY	South Nyanza Sugar Company
PSR	Corporate Planning Strategy and Enterprise Risk Management
USD	United States Dollar

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INTRODUCTION

The rebasing of our country's Gross Domestic Product in 2014 has placed Kenya in the Lower - Middle income country category with a Gross Domestic Product growth rate of 5.7% and per capita income of $1,246. Agriculture being an important engine of economic growth contributes the largest share of the country's Gross Domestic Product at nearly 22.4% (Economic Survey 2022).

Since an assured food supply is important to National Security, timely and reliable agricultural statistics are vital for monitoring agricultural performance and informing policy intervention necessary to promote the growth and development of the sector and help in eradication of hunger and extreme poverty.

The AFA Year Book of Statistics is an annual publication of the Authority. The publication provides various crop statistics on agricultural and market performance.

AFA Year Book of Statistics 2022 is the second edition of the annual statistical bulletin produced in furtherance of the Authority's mandate under the AFA Act 2013 and the Crops Act 2013. The Year Book of Statistics is produced by AFA's Department of Corporate Planning, Strategy and Enterprise Risk Management (PSR) and is compiled using data and information from AFA directorates.

This publication is a useful agricultural statistics resource for policy makers, donor agencies, dealers of scheduled crops, researchers and analysts as well as the general public. It is divided into seven chapters with each chapter giving detailed statistics as relates to the various scheduled crops administered by the different directorates.

Under the Constitution of Kenya 2010, Agriculture is devolved to the County government. Efficient and effective methods of data collection have to be enhanced in order to capture data from farm level production to marketing of agricultural commodities. This will not only give accurate, real-time data but also support the decision-making process.

Chapter One

1 COFFEE INDUSTRY

1.1 Introduction

Coffee is grown in 33 counties and the major coffee growing counties are Kiambu, Kirinyaga, Nyeri, Murang'a, Kericho and Bungoma. In 2020/21, coffee sub-sector recorded a 6.4% decline in production from of 36,873 tons to 34,512 tons of CC. The observed performance was attributed to the effects of COVID-19 pandemic and erratic weather patterns including inadequate rains during the year under review. The main coffee grades in Kenya includes: AA, E, TT, AB, PB, C and T. Summary of the coffee sub-sector is given on the Table 1 below.

Table 1: **Area under coffee, production, yields, exports, imports and consumption for the last five coffee years**

Year	2016/17	2017/18	2018/19	2019/20	2020/21
Area (Ha)	114,700	115,570	116,193	119,675	108,199
Production (MT)	38,620	41,375	44,989	36,873	34,512
Yields (MT/Ha)	0.337	0.358	0.387	0.308	0.319
Exports (MT)	43,378.72	43,289.62	50,600.33	46,161.64	41,796.76
Imports (MT)	-	-	-	9.44	658.93
Consumption (MT)	1,050.20	1,342.00	1,411.21	1,577.00	1,655.85

Source: AFA-Coffee Directorate

1.2 Agriculture Performance

1.2.1 Area under coffee

The estimated area under coffee declined from 119,675 Ha in 2019/20 to 108,199 Ha in 2020/21, despite new planting reported in Trans Nzoia, Bungoma, Busia, Homabay and Siaya which is done in small areas and cannot match the larger areas being cleared for real estate investment in predominant coffee growing areas (Kiambu, Thika, Makuyu, Ruiru, Kabete, Limuru, Muranga, Nyeri, Meru, Machakos etc.). Further threat in area under the crop and coffee production has been attributed to competing enterprises like bananas and Khat farming. Although there has been reported expansion in areas such as Kericho, Elgeyo Marakwet, Nandi, Trans Nzoia, Migori, Bomet and Bungoma due to ICPI initiative and county government seedlings distribution; many splits in the cooperative sector, and conversion of land use especially in Central Kenya and Upper Eastern have led to the declined area under the crop and production registered. For more details, refer to Table 2.

Table 2: Area (Ha) under coffee production by counties for the last two coffee years

No	County	2019/20			2020/21		
		Estate	Co-op	Total	Estate	Co-op	Total
1	Kiambu	12,627.00	10,520.00	23,147.00	11,724.00	8,585.00	20,309.00
2	Kirinyaga	1,599.00	8,410.00	10,009.00	1,599.00	8,410.00	10,009.00
3	Nyeri	1,029.00	12,488.00	13,517.00	1,029.00	8,800.00	9,829.00
4	Murang'a	905	13,125.00	14,030.00	905	8,500.00	9,405.00
5	Kericho	710	3,656.00	4,366.00	714.8	4,043.20	4,758.00
6	Bungoma	219	5,291.00	5,510.00	1,010.00	6,650.00	7,660.00
7	Meru	826	7,756.00	8,582.00	826	7,824.80	8,650.80
8	Embu	338	6,535.00	6,873.00	338	6,535.00	6,873.00
9	Nandi	198	1,673.00	1,871.00	172	1,673.00	1,845.00
10	Tharaka Nithi	255	3,412.00	3,667.00	255	3,425.60	3,680.60
11	Nakuru	1,480.00	496	1,976.00	500	1,491.40	1,991.40
12	Trans Nzoia	1,575.00	890	2,465.00	1,797.00	361	2,158.00
13	Machakos	1,547.00	6,085.00	7,632.00	1,708.00	6,265.00	7,973.00
14	Kisii	798	3,765.00	4,563.00	798	3,765.00	4,563.00
15	Nyamira	591	1,917.00	2,508.00	791	1,917.00	2,708.00
16	Baringo	153	916	1,069.00	155.4	968	1,123.40
17	Nairobi	187	-	187	181	-	181
18	Uasin Gishu	109	75	184	168	113	281
19	Migori	4	755	759	32	755	787
20	Elgeyo Marakwet	26	134	160	46	98	144
21	Makueni	27	1,757.00	1,784.00	32	1,663.00	1,695.00
22	Kisumu	82	16	98	82	16	98
23	West Pokot	14.5	88	102.5	42	126	168
24	Bomet	30	171	201	30	171	201
25	Kakamega	16	318	334	16	318	334
26	Homabay	5	427	432	5	422	427
27	Narok	59	37	96	60.24	37	97.24
28	Kajiado	5	7	12	5	10.00	5
29	Laikipia	4	48	52	4	48	52
30	Busia	-	84	84	-	150	150
31	Vihiga	1	13	14	1	9	10
32	Siaya	-	23	23	-	23	23
33	Taita	-	10	10	-	10	10

No	County	2019/20			2020/21		
		Estate	Co-op	Total	Estate	Co-op	Total
	Total	**25,419.50**	**90,898.00**	**119,675.00**	**25,026.44**	**83,173.00**	**108,199.44**

Source: AFA-Coffee Directorate

1.2.2 Coffee Production

The coffee sub-sector recorded a decline in production of 6.4% from 36,873 tons in 2019/20 to 34,512 tons in 2020/21. The production of clean coffee by county and type of coffee is provided in Table 3 below. The four counties from the Mt Kenya region namely Kiambu, Kirinyaga, Nyeri and Murang'a contributed 20,626 tons (60%) of the total national production. Among the top competing counties, estates are dominant in Kiambu compared to Kirinyaga where smallholders are dominating. The two counties of Kericho and Bungoma where there has been relative expansion compared to any other counties also emerged in the top 5 and 6 positions respectively. Other coffee production strongholds include Meru, Embu, Nandi and Tharaka Nithi as shown in Table 3 and 4 below.

Table 3: Clean coffee production (MT) by county 2020/21

No	County	Arabica (MT)		Robusta (MT)		Total (MT)
		Estate (CC)	Co-op (CC)	Estate (CC)	Co-op (CC)	
1	Kiambu	6,619.05	1,185.07	-	-	7,804.11
2	Kirinyaga	390.77	5,637.46	-	-	6,028.23
3	Nyeri	435.23	3,258.09	-	-	3,693.32
4	Murang'a	807.47	2,292.64	-	-	3,100.11
5	Kericho	500.43	2,464.85	-	-	2,965.28
6	Bungoma	59.27	1,836.29	-	1.48	1,897.04
7	Meru	171.55	1,450.76	-	-	1,622.31
8	Embu	163.54	1,429.16	-	-	1,592.71
9	Nandi	185.19	808.16	-	-	993.35
10	Tharaka Nithi	80.13	780.83	-	-	860.96
11	Nakuru	597.59	234.78	-	-	832.37
12	Trans Nzoia	688.55	97.39	-	-	785.94
13	Machakos	214.55	517.00	-	-	731.55
14	Kisii	283.40	264.63	-	-	548.03

No	County	Arabica (MT)		Robusta (MT)		Total (MT)
		Estate (CC)	Co-op (CC)	Estate (CC)	Co-op (CC)	
15	Nyamira	138.00	157.27	-	-	295.26
16	Baringo	15.82	131.18	-	-	147.00
17	Nairobi	113.87	-	-	-	113.87
18	Uasin Gishu	95.49	8.87	-	-	104.36
19	Migori	7.38	92.78	-	-	100.16
20	Elgeyo Marakwet	27.45	46.88	-	-	74.33
21	Makueni	11.20	40.89	-	-	52.09
22	Kisumu	41.02	0.55	-	-	41.56
23	West Pokot	1.10	32.49	-	-	33.59
24	Bomet	10.54	20.63	-	-	31.17
25	Kakamega	4.83	13.67	-	-	18.50
26	Homabay	2.23	14.22	-	-	16.45
27	Narok	-	9.05	-	-	9.05
28	Kajiado	5.87	-	-	-	5.87
29	Laikipia	-	4.44	-	-	4.44
30	Busia	-	4.01	-	4.58	8.59
31	Vihiga	-	0.28	-	-	0.28
32	Siaya	-	-	-	0.25	0.25
	Grand total	**11,671.51**	**22,834.34**	-	**6.31**	**34,512.16**

Source: AFA-Coffee Directorate

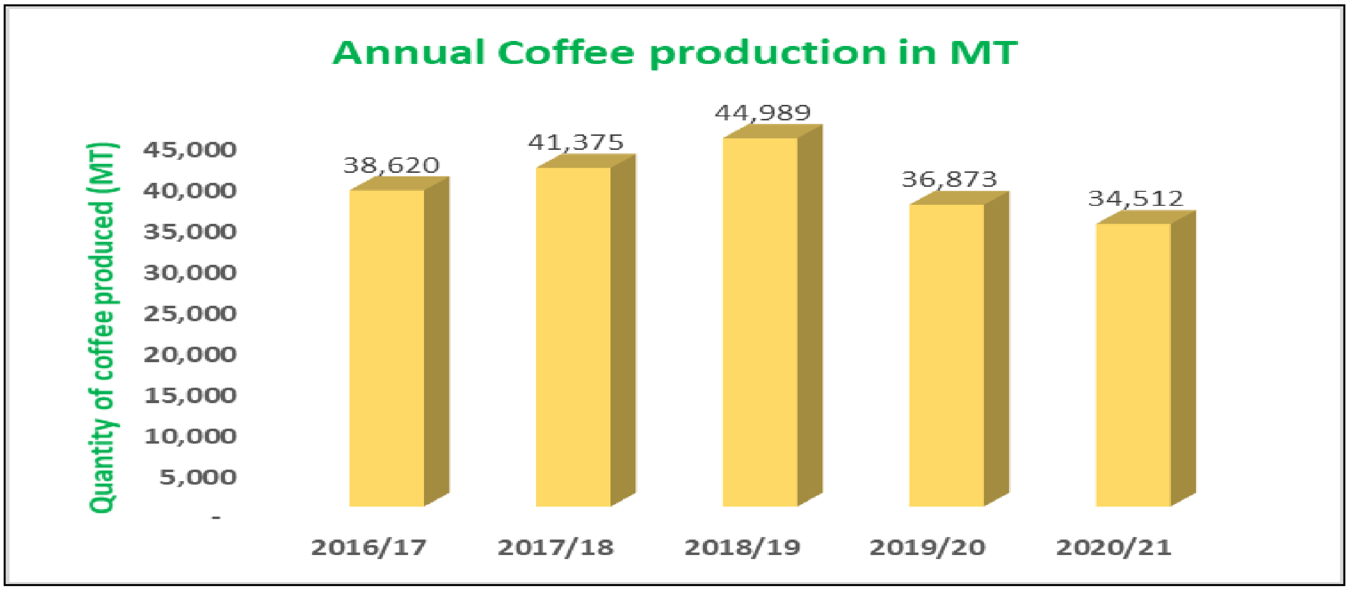
Table 4: The comparative performance of production (MT) in the two coffee years 2019/20 and 2020/21

No	County	2019/20			2020/21		
		Estate	Co-op	Total	Estate	Co-op	Total
1	Kiambu	6,340.03	1,127.85	7,467.88	6,619.05	1,185.07	7,804.11
2	Kirinyaga	384.47	5,059.66	5,444.14	390.77	5,637.46	6,028.23
3	Nyeri	345.69	3,604.91	3,950.60	435.23	3,258.09	3,693.32
4	Murang'a	1,064.41	3,636.43	4,700.84	807.47	2,292.64	3,100.11
5	Kericho	332.05	1,865.63	2,197.68	500.43	2,464.85	2,965.28
6	Bungoma	80.1	2,025.20	2,105.30	59.27	1,837.77	1,897.04
7	Meru	137.52	1,394.86	1,532.38	171.55	1,450.76	1,622.31
8	Embu	156.59	2,404.62	2,561.21	163.54	1,429.16	1,592.71
9	Nandi	37.76	538.42	576.18	185.19	808.16	993.35
10	Tharaka Nithi	54.69	476.61	531.3	80.13	780.83	860.96
11	Nakuru	277.94	93.55	371.48	597.59	234.78	832.37
12	Trans Nzoia	378.13	102.02	480.15	688.55	97.39	785.94

No	County	2019/20			2020/21		
		Estate	Co-op	Total	Estate	Co-op	Total
13	Machakos	547.63	588.35	1,135.98	214.55	517	731.55
14	Kisii	551.79	1,721.88	2,273.67	283.4	264.63	548.03
15	Nyamira	198.02	815.61	1,013.63	138	157.27	295.26
16	Baringo	33.16	59.93	93.09	15.82	131.18	147
17	Nairobi	6.13	0	6.13	113.87	0	113.87
18	Uasin Gishu	14.16	10.09	24.25	95.49	8.87	104.36
19	Migori	5.21	129.55	134.75	7.38	92.78	100.16
20	Elgeyo Marakwet	4.86	38.6	43.46	27.45	46.88	74.33
21	Makueni	9.58	110.99	120.57	11.2	40.89	52.09
22	Kisumu	11.07	1.85	12.92	41.02	0.55	41.56
23	West Pokot		19.72	19.72	1.1	32.49	33.59
24	Bomet	0.11	12.47	12.58	10.54	20.63	31.17
25	Kakamega	1.64	13.66	15.3	4.83	13.67	18.5
26	Homabay	0	35.44	35.44	2.23	14.22	16.45
27	Narok	0	1.39	1.39	0	9.05	9.05
28	Kajiado	0	0	0	5.87	0	5.87
29	Laikipia	0	3.85	3.85	0	4.44	4.44
30	Busia	0	5.99	5.99	0	8.59	8.59
31	Vihiga	0	0.93	0.93	0	0.28	0.28
32	Siaya	0	0	0	0	0.25	0.25
	Grand Total	**10,972.13**	**25,900.67**	**36,872.81**	**11,671.51**	**22,840.64**	**34,512.16**

Source: AFA-Coffee Directorate

Figure 1: Total coffee production (MT) from 2016/17 to 2020/21



Source: AFA-Coffee Directorate

1.2.3 Coffee productivity/Yields per Ha

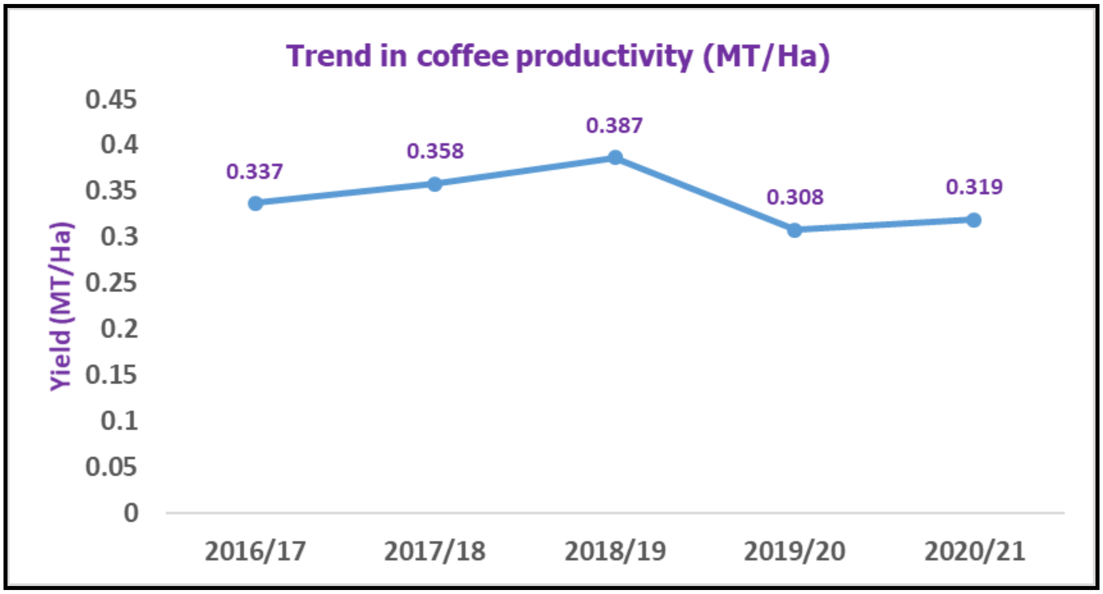
The average yield increased from 442 Kgs/ha to 468 Kgs/ha for estates while there was a decline for smallholders from 273 Kgs/ha in 2019/20 to 274 Kgs/ha in 2020/21 as shown in Table 5. Generally, coffee yield increased by 3.5% from 308.12 Kg/Ha in 2019/20 to 318.97 Kg/Ha in 2020/21.

Table 5: Average yield of coffee 2019/20 and 2020/21

	Area (Ha) '000'		Production (MT) '000'		Average Yield (MT/Ha)	
Year	**2019/20**	**2020/21**	**2019/20**	**2020/21**	**2019/20**	**2020/21**
Co-ops	94.8	83.2	25.9	22.8	0.273	0.274
Estates	24.9	25	11	11.7	0.442	0.468
Total	**119.7**	**108.2**	**36.9**	**34.5**	**0.308**	**0.319**

Source: AFA-Coffee Directorate

Figure 2: Trend in coffee productivity (2016/17-2020/2021)



Source: AFA-Coffee Directorate

1.3 Market Performance

1.3.1 Coffee marketing (Auction and Direct Sales)

The total marketed weight from both auction and direct sales windows in 2020/21 was 35,614.01 tons compared to 38,051.44 tons in 2019/20 while total value for 2020/21 was $ 209,813,620.46 compared to $161,036,119.15 in the previous season. The average weighted price from both windows was $294.57 per 50 kg bag compared to $211.60 in 2019/20.

The overall market leader was Tropical Farm Management Kenya ltd (TFMK) controlling nearly 30% of the total market share. The overall best average price per 50 Kg bag of $329.30 was realized by Kenya Co-operative Coffee Exporters while the least price of $251.02 was realized by Thika Coffee Marketing (TCM). See Table 6 below for more details.

Table 6: Marketers performance

Marketer	Window	No Bags	Weight (MT)	Gross proceed ($)	Avg price	%
Tropical Farm Management (K) Limited	A+D	207,402.00	10,370.11	60,440,370.18	291.42	29
Coffee Management Services	A+D	193,064.00	9,653.21	59,313,952.74	307.22	27
Aristocrats Coffee & Tea	A	82,556.00	4,127.78	23,297,923.12	282.21	12
Sustainability (K) Ltd	A+D	76,231.00	3,811.54	22,477,083.08	294.86	11
Oaklands Coffee Mkt ltd	A+D	71,321.00	3,566.04	20,904,655.57	293.11	10
Sustainable Management Services	A+D	23,321.00	1,166.06	7,130,007.98	305.73	3
New KPCU Ltd	A	19,756.00	987.78	5,578,257.54	282.36	3
Thika Coffee Marketing	A	17,510.00	875.50	4,411,896.28	251.97	2
Kenya Cooperative Coffee Exporters	A+D	14,456.00	722.81	4,760,383.16	329.30	2
Meru County Coffee Marketing	A	4,494.00	224.69	1,307,791.84	291.02	1
Classic Coffee Ltd	A+D	2,645.00	132.26	743,379.30	281.03	0
Grand Total		**712,756.00**	**35,614.01**	**209,813,620.46**	**294.57**	**100**

Source: AFA-Coffee Directorate
***A+D is composition of auction and direct sales*

1.3.2 Coffee Auction

A total of 25,126 tons (407,432 bags) of coffee valued at US dollars 141.2 million was sold at the Nairobi Coffee Exchange in 2020/21 compared to 24,531 tons (398,029) valued at US dollars 92.8 million in 2019/20. The average price per 50 Kg bag increased from USD 189.06 in 2019/20 to USD 281.07 in 2020/21. This was attributed to the favourable global coffee prices and low supply.

Average prices of grade AA, PB and AB as well as C are generally above those of other grades as depicted in Table 7 and 8. In terms of coffee categories, the main grades comprising of AA, AB, C, E, PB, T and TT fetched an average price of $308.14 per bag in 2020/21 compared to $213.46 per bag in 2019/20. The volume of main grades was 21,649 tons in 2020/21 valued at $133.4 million compared to 19,916 tons valued at $85.02 million in the previous season. Similarly, miscellaneous grades totalled to 1,220 tons valued at $3.5 million in 2020/21 compared to 1,910 tons valued at $3.5 million. The unwashed grades volume was 2,257 tons valued at $4.3 million in 2020/21 compared to 2,706 tons valued at $4.2 million.

Table 7: Grade performance 2019/20

Category of coffee	Grade	No Bags	Weight Bought (MT)	Min ($)	Max ($)	Avg price ($)	Value ($)	%
Main Grades	AA	62,653	3,871.42	36	512	311.31	24,103,838.22	16
	AB	143,732	8,778.38	45	422	219.21	38,485,473.40	36
	C	66,884	4,138.71	8	287	156.67	12,967,881.48	17
	E	961	61.30	89	266	190.71	233,822.88	0
	PB	18,909	1,196.05	39	415	207.55	4,964,767.72	5
	T	17,432	1,087.33	15	236	90.06	1,958,396.74	4
	TT	12,462	782.53	17	273	147.5	2,308,511.98	3
	Sub-Total	**323,033**	**19,915.73**	**8**	**512**	**213.46**	**85,022,692.42**	**81**
Miscellaneous	HE	4,442	278.81	35	173	102.74	572,887.80	1
	SB	1,542	84.30	13	70	38.17	64,355.42	0
	UG	1,688	104.95	27	194	90.99	190,976.60	0
	UG1	13,566	838.83	10	226	107.27	1,799,600.46	3
	UG2	9,402	585.09	10	154	74.19	868,094.06	2
	UG3	285	17.95	18	111	56.98	20,459.44	0
	Sub-Total	**30,925**	**1,909.92**	**10**	**226**	**92.06**	**3,516,373.78**	**8**
Unwashed	MH	33,017	2,017.43	39	122	86.05	3,472,151.64	8
	ML	11,054	688.07	20	97	54.25	746,577.86	3
	Sub-Total	**44,071**	**2,705.50**	**20**	**122**	**77.97**	**4,218,729.50**	**11**
	Total	**398,029**	**24,531.14**			**189.06**	**92,757,795.70**	**100**

Source: AFA-Coffee Directorate

Table 8: Grade performance 2020/21

Category of coffee	Grade	No Bags	Weight Bought (MT)	Min ($)	Max ($)	Avg price ($)	Value ($)	%
Main Grades	AA	105,510	6,488.76	50	500	339.63	44,075,070.74	26
	AB	159,160	9,729.31	40	457	316.01	61,491,219.42	39
	C	44,566	2,794.10	50	367	269.26	15,046,780.36	11
	E	1,161	73.79	82	342	269.6	397,888.86	0
	PB	21,521	1,361.24	80	479	302.34	8,231,208.54	5
	T	9,668	607.15	25	334	116.13	1,410,193.08	2
	TT	9,456	594.86	22	343	232.62	2,767,501.82	2
	Sub-Total	**351,042**	**21,649.20**	**22**	**500**	**308.14**	**133,419,862.82**	**86**
Miscellaneous	HE	2,594	164.76	50	250	131.18	432,278.36	1
	SB	1,348	72.51	17	104	64.5	93,527.36	0
	UG	1,429	88.85	50	319	130.01	231,021.58	0
	UG1	8,894	553.82	38	320	179.63	1,989,665.00	2
	UG2	5,241	331.75	18	257	109.47	726,330.52	1
	UG3	125	7.98	28	104	65.34	10,422.16	0
	Sub-Total	**19,631**	**1,219.66**	**17**	**320**	**142.8**	**3,483,244.98**	**5**
Unwashed	MH	28,914	1,766.23	42	194	102.9	3,634,927.88	7
	ML	7,845	490.58	34	144	71.58	702,341.78	2
	Sub-Total	**36,759**	**2,256.82**	**34**	**194**	**96.09**	**4,337,269.66**	**9**
	Total	**407,432**	**25,125.68**			**281.07**	**141,240,377.46**	**100 %**

Source: AFA-Coffee Directorate

The volume of main grades at the auction increased from 81% in 2019/20 to 86% in 2020/21 whereas that of miscellaneous reduced from 5% in 2020/21 compared to 8% in 2019/20. Unwashed grades accounted for 9% in 2020/21 compared to 11% in 2019/20. In terms of grades, the bulk of sales were grade AB (39%) followed by AA (26%), C (11%) and PB (5%) in 2020/21 compared to AB (36%) followed by AA (16%), C (17%) and PB (5%) for main grades. Among the miscellaneous grade UG1 was the dominant grade while MH and ML contributed 7% and 2% respectively in 2020/21. Kenyan coffee is therefore predominantly wet processed.

The average prices per 50 kg bags for grade AA was $339.63 in 2020/21 compared to $311.31 in 2019/20. However, the maximum price was high at $512 in 2019/20 compared to $500 in 2020/21.

1.3.3 Direct Sales

A total of 10,444 tons of coffee was sold via direct sales (second window) during 2020/21. This was 23% lower than 13,521 tons sold in 2019/20 period. In general, volumes sold through direct sales have increased over years from 18% to current 29%. However, in 2019/20, the proportion of direct sales was slightly higher than 2020/21 by 7%. All CC grades including MH and ML were sold through direct sales alongside the premium grades (AA, AB, E & PB) as indicated in Table 9 below.

Table 9: Direct Sales for 2019/20 and 2020/21

Year	No of bags	Weight Bought (MT)	Value-US dollars (Million)	AVG price /50 KG
2019/20	225,355	13,521	68.28	252.48
2020/21	209,767	10,444	68.57	326.9

Source: AFA-Coffee Directorate

1.3.4 Coffee Exports

In season 2020/21, the country exported 40,511 tons of green bean valued at $285.3 million compared to 45,210 tons valued at $204.33 million in 2019/20 while the quantity of roasted/ground coffee was 1,286 tons valued at $6.92 million compared to 952 tons valued at $5.49 million in 2019/20. The overall coffee export volume was 41,798 tons valued at $292.26 (KES 27.07 billion) in 2020/21 compared to 46,162 tons valued at $209.8 million (KES 22.02 billion) in the previous season. The average price per 60 Kg bag for green coffee in 2020/21 was $422.61 compared to $271.17 in the previous season while roasted/ ground coffee price was $322.77 compared to $346.22 in 2019/20. However, the combined average price per bag was higher for 2020/21 at $419.54 compared to $272.72 in 2019/20. Ironically, the price per bag of ground/roasted coffee in 2020/21 was lower than green coffee. Table 10 below shows coffee exports by form for the coffee year 2019/20 and 2020/21.

Table 10: Coffee exports by form 2019/20 and 2020/21

Coffee Year	Form	Weight (MT)	Value ($)	Value (KES) `000`	Average price/60kg ($)
2020/21	Green beans	40,511.26	285,341,980.19	26,315,576.604	422.61
	Roasted/ground	1,285.50	6,915,265.49	756,094.172	322.77
	Total	**41,796.76**	**292,257,245.68**	**27,071,670.777**	**419.54**
2019/20	Green bean	45,209.97	204,326,687.21	21,445,384.751	271.17
	Roasted/ground	951.67	5,491,455.92	574,188.938	346.22
	Total	**46,161.64**	**209,818,143.13**	**22,019,573.690**	**272.72**

Source: AFA-Coffee Directorate

1.3.5 Coffee exports by destination

The top five destinations in 2020/21 included Belgium (21%), USA (15%), Germany (13%), Korea (10%) and Sweden (7%) while in 2019/20 the top five destinations were as follows; USA (20%), Germany (19%), Belgium (16%), Korea (9%) and Sweden (6%). While the top five countries remain the same for the two seasons, it is important to note that Belgium improved from position three in the previous year to the top position in 2020/21 as shown in Table 11.

Kenya acquired 8 new destinations namely; S. Sudan, Uganda, Bahrain, Oman, Ukraine, Estonia, Bangladesh and Syria to compensate for the 8 lost destinations namely; Bulgaria, Djibouti, Egypt, Hong Kong, Lebanon, Mexico, Poland and Vietnam.

Table 11: Top ten destinations in 2020/21

No	Destination	2020/21(bags-60kgs)	2019/20(bags -60kgs)	Variance
1	Belgium	148,805	125,632	18%
2	USA	102,794	152,760	-33%
3	Germany	92,455	143,556	-36%
4	Korea South	67,324	70,578	-5%
5	Sweden	49,193	44,015	12%
6	Japan	29,423	11,619	153%
7	Finland	23,875	25,260	-5%

No	Destination	2020/21(bags-60kgs)	2019/20(bags -60kgs)	Variance
8	Australia	23,545	21,308	10%
9	Norway	23,508	22,094	6%
10	Canada	21,005	10,649	97%
11	Others	114,685	141,890	-19%
	Grand Total	**696,613**	**769,361**	**-9%**

Source: AFA-Coffee Directorate

1.3.6 Destination for value added coffee

Leading destination for value added coffee from Kenya in both season 2020/21 and 2019/20 is Denmark. Other destinations included Finland, Congo, Netherlands, Somalia, Russian Federation, United Kingdom, Bahrain, Spain, United Arab Emirates, China and USA as shown in Table 12 & 13.

Table 12: Destination for value added coffee 2020/21

Destination	Weight (GBE) MT	Value ($)	Value (KES)
Denmark	1,142.06	6,220,531.96	677,687,425.72
Congo D. Republic	40.86	183,550.00	19,978,234.94
Netherlands	34.24	167,119.18	18,155,626.63
Finland	32.63	207,590.40	25,349,352.89
Somalia	18.33	71,095.80	7,719,974.06
Russian Federation	16.66	56,000.00	6,179,731.60
United Kingdom	0.30	3,125.00	339,329.06
Bahrain	0.20	4,093.00	450,296.12
Spain	0.12	965.19	104,143.42
United Arab Emirates	0.05	646.6	70,026.79
China	0.04	533.36	58,373.45
USA	0.01	15	1,657.15
Grand Total	**1,285.50**	**6,915,265.49**	**756,094,171.83**

Source: AFA-Coffee Directorate

Table 13: Destination for value added coffee 2019/20

Destination	Weight (GBE) MT	Value ($)	Value (KES)
Denmark	842.15	4,889,028.16	509,141,486.94
Finland	36.09	256,322.64	29,244,080.87
Belgium	19.20	49,152.00	5,079,996.86
South Korea	17.40	54,087.72	5,614,305.92
Russian Federation	17.38	112,000.00	11,551,641.95
Somalia	9.48	84,946.40	8,752,410.33

Destination	Weight (GBE) MT	Value ($)	Value (KES)
Netherlands	9.47	43,042.56	4,499,793.13
United Kingdom	0.420	2,002.50	212,483.00
South Africa	0.072	863.94	91,671.66
UAE	0.004	10	1,067.66
Grand Total	**951.67**	**5,491,455.92**	**574,188,938.32**

Source: AFA-Coffee Directorate

1.3.7 Coffee Imports

Kenya is currently importing coffee both Arabica and Robusta mainly from Rwanda, Uganda, China, Tanzania and Ethiopia. The demand for foreign coffee in the country is driven by foreigners who have developed affinity for certain foreign brands. Additionally, buyers are importing value added instant and ground beans from Belgium, China, Italy and Portugal. For more details, refer to Table 14.

Table 14: Coffee import volumes and values

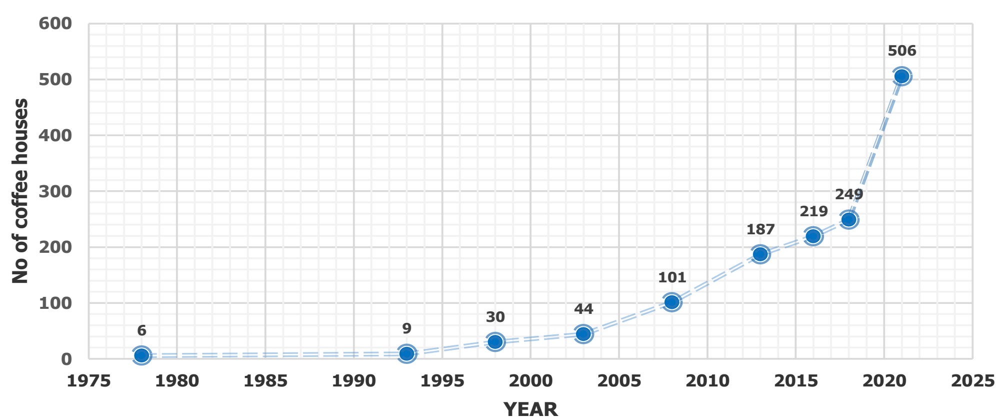
Coffee year	County of Origin	Weight (Kg)-GBE	No Bags	Value ($)
2019/20	Belgium	1,000.00	17	1,411.65
	Italy	839.3	14	4,697.92
	Malaysia	4,316.80	72	38,720.98
	Netherlands	46	1	508.5
	South Africa	60	1	56,452.80
	Tanzania	3,072.00	51	65,400.00
	United Kingdom	104	2	720
	Total	**9,438.10**	**157**	**167,911.85**
2020/21	Belgium	89.1	1	1,904.00
	China	31,239.00	521	50,523.00
	Ethiopia	18,000.00	300	54,365.44
	India	599.76	10	4,846.52
	Italy	303.81	5	4,573.27
	Portugal	7,550.40	126	10,623.80
	Rwanda	480,000.00	8,000	2,153,277.78
	Tanzania	24,847.20	414	116,700.00
	Uganda	96,300.00	1,605	288,175.94
	Total	**658,929.27**	**10,982**	**2,684,989.75**

Source: AFA-Coffee Directorate

1.3.8 Locally produced and consumed coffee

Coffee consumption in Kenya dates back to early 1970s, however the concept of coffee house brands has enhanced the culture of coffee drinking which was previously associated with foreigners working as expatriates or in the diplomatic mission in Kenya. The exponential growth in the number of coffee houses from only 6 in the 1980s to present 506 as shown in Figure 3 is a testimony that Kenyans have embraced the culture of taking coffee as an alternative drink to other competing beverages. Furthermore, Covid-19 pandemic showed the true value of a local market for local beans.

Figure 3: Number of coffee houses



Source: AFA- Coffee Directorate

The local consumption volume has increased from 1,050 tons in 2016/17 to present 1,655.85 tons, indicating that Kenyan's are slowly appreciating locally produced and brewed coffee as shown in Table 15 below.

Table 15: Consumption trend in GBE and 60-kg bags

Year	Production MT(GBE)	Local consumption (MT)- (GBE)	% Production
2016/17	38,620	1,050.20	2.75%
2017/18	41,375	1,342.00	3.24%
2018/19	44,989	1,411.21	3.14%
2019/20	36,873	1,577.00	4.27%
2020/21	34,512	1,655.85	4.81%

Source: AFA-Coffee Directorate

1.4 Strategic Challenges and Intervention

Presence of other competitive cash crops that fetch higher prices hence leading to the uprooting of coffee trees and the shifting from coffee farming to investment in real estate in predominant coffee growing areas like Kiambu.

AFA through Coffee Directorate need to collaborate with the county governments to help implement the existing coffee revitalization plan which entails;

- Automating the coffee factories for efficient coffee processing.
- Adaptation of innovative climate technologies in coffee production, such as eco-pulpers that use little water, leaving a lot of water for domestic and irrigation purposes.
- The construction of metallic beds for drying the coffee beans instead of wooden beds which encourages cutting down trees, thus minimizing the impacts of climate change.

Chapter Two

2 SUGAR INDUSTRY

2.1 Introduction

Commercial sugarcane farming is currently being carried out in 15 counties. The cane distribution by county is as follows: - Kakamega (19.9 %), Bungoma (17.7%), Kisumu (12.9%), Narok (8.3%), Busia (7.7%), Nandi (7.7%), Homa-bay (6.3%), Kericho (4.8%), Migori (4.6%), Trans Nzoia (3.4%), Kwale (3.3%), Uasin Gishu (1.8%), Kisii (1.1%), Vihiga (0.3) and Siaya (0.2%). In 2021, about 262,667 growers were engaged in sugarcane farming, with an average farm size of 0.8 hectares.

In general, total sugar production has been steadily increasing over the years. The highest sugar production was achieved in 2021, with a production of 700,241 tons compared to 603,788 tons in 2020, representing a 16% increase.

2.2 Agricultural Performance

2.2.1 Area under Cane

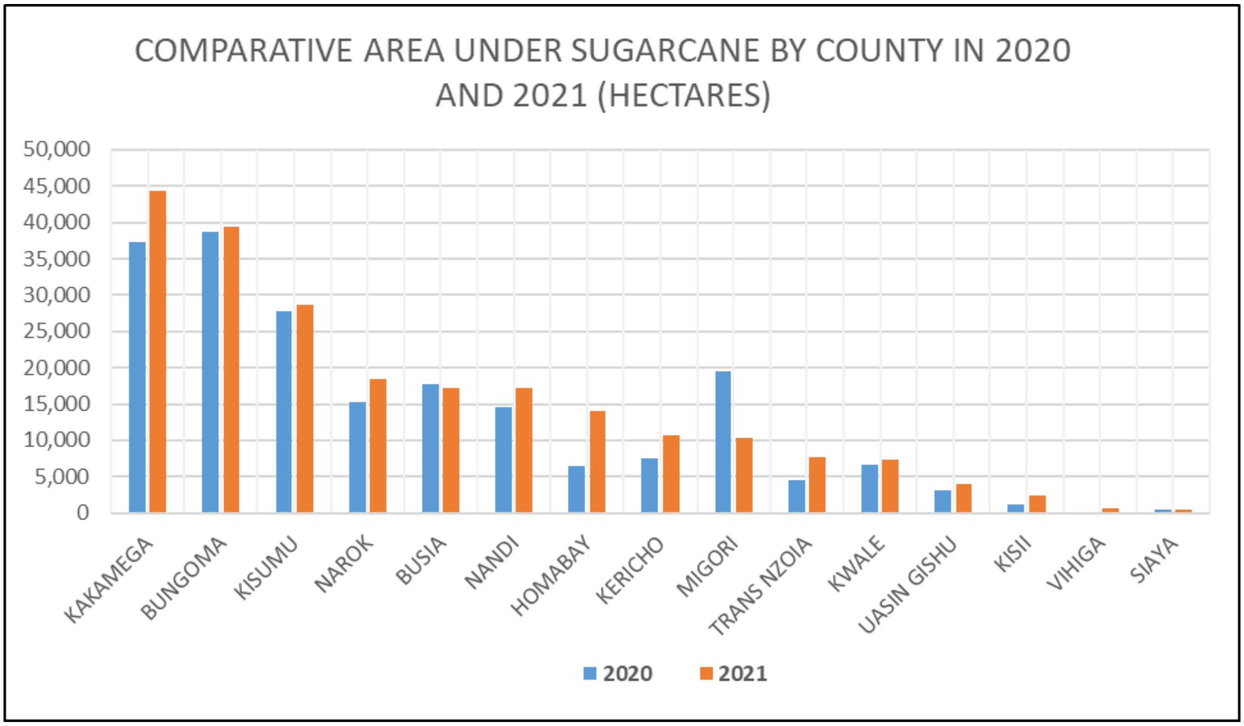
The total area under cane as of 31st December 2021 was 223,006 Ha compared to 200,513 Ha in the same period in 2020, giving an increase of 11 percent. The increase was largely attributed to: -

- Aggressive cane development was initiated by various sugar companies (mainly West Kenya, Butali, and Sukari sugar companies) in synchrony with their increasing milling capacities.
- Prompt payment for cane delivery by privately owned mills and hence motivating their farmers to expand the area under cane.
- In addition, increased sugarcane price and regular review by the Sugarcane Pricing Committee was an incentive to the farmers. Notable is that sugarcane prices had maintained a decreasing trend from 2017 to 2020 which prompted the reconstitution of a pricing Committee.

The nucleus estate accounts for only 9% of the total cane land area, whereas the Out growers occupy 91% of the total cane land area.

Kakamega and Bungoma counties registered the highest area under sugarcane with 44,268 Ha and 39,430 Ha, respectively, with the two counties' surface representing 38% of total cane area. For more details, refer to Figure 4 and Table 16 below.

Figure 4: Comparative Area under Sugarcane (Ha) by County



Source: AFA-Sugar Directorate

Table 16: Area under cane, % contribution per county

COUNTY	AREA UNDER CANE (HA)		% Variance	% AREA UNDER CANE CONTRIBUTION	
	2020	2021		Dec-20	Dec-21
Kakamega	37,207	44,268	18.98	18.6	19.9
Bungoma	38,688	39,430	1.92	19.3	17.7
Kisumu	27,702	28,673	3.50	13.8	12.9
Narok	15,275	18,524	21.27	7.6	8.3
Busia	17,777	17,221	(3.13)	8.9	7.7
Nandi	14,538	17,175	18.14	7.3	7.7

COUNTY	AREA UNDER CANE (HA)		% Variance	% AREA UNDER CANE CONTRIBUTION	
	2020	2021		Dec-20	Dec-21
Homabay	6,386	14,104	120.86	3.2	6.3
Kericho	7,443	10,625	42.75	3.7	4.8
Migori	19,514	10,326	(47.08)	9.7	4.6
Trans Nzoia	4,604	7,638	65.90	2.3	3.4
Kwale	6,693	7,382	10.29	3.3	3.3
Uasin Gishu	3,040	4,057	33.19	1.5	1.8
Kisii	1,103	2,475	124.36	0.6	1.1
Vihiga	0	569	N/A	0.0	0.3
Siaya	543	539	(0.75)	0.3	0.2
TOTAL	**200,513**	**223,006**	**11.21**	**100.0**	**100.0**

Source: AFA-Sugar Directorate

2.2.2 Area Harvested, Cane Deliveries and Cane Yields

In 2021, the total area harvested was 93,288 hectares compared to 89,680 hectares in the period January – December 2020, giving a 4% increase. The increase is mainly attributed to the improved sugar industry's requirement due to expansion of cane crushing capacities in some private mills. This was boosted by the increased availability of mature cane during this year.

The total cane deliveries in the period January - December 2021 was 7,659,120 tons against 6,810,898 tons in the same period of 2020, an increase of 12%. The increase is attributed to improving cane availability in most of the sugar zones.

The sugar industry reported cane yields of 69.95 tons per hectare in 2021 compared to 61.85 tons per hectare in the same period last year, representing a significant increase of 13%. The productivity improvement could be attributed to good rains received in 2021, as well as mature cane harvested in the regions. For more details, refer to Table 17 – 19 below.

Table 17: Area Under Sugar Cane, Area Harvested, Production, Average Yield, and cane prices 2017 - 2021

Year	2017	2018	2019	2020	2021
Area under sugar cane (Ha)	191,215	202,400	197,438	200,513	223,006
Area harvested (Ha)*	67,709	73,080	71,525	89,680	93,288

Year	2017	2018	2019	2020	2021
Total cane deliveries (production) in Tons	4,751,605	5,262,157	4,605,102	6,810,898	7,659,120
Cane delivered by non-contracted farmers) in Tons	1,004,304	1,233,137	938,838	1,264,169	1,133,314
Average yield (Tons/Ha) **	55.34	55.13	51.26	61.85	69.95
Average cane prices paid to Farmers (KES/T)	4,237	3,988	3,815	3,707	3,909
** Exclude area harvested by non-contracted farmers*					
*** Yield calculated = (Total cane delivery-cane by non-contracted farmers)/area harvested*					

Source: AFA-Sugar Directorate

The area under cane by factories recorded an increase in their area under crop, except for Chemelil, South Nyanza, Busia, and Miwani zones, which have seen a decrease in cane area.

Table 18: Area under Sugar Cane by Factory (Ha)

FACTORY	2017	2018	2019	2020	2021
Chemelil	17,520	17,005	16,905	18,186	18,012
Muhoroni	15,014	13,850	13,184	13,775	15,282
Mumias	21,538	13,034	1,925	198	274
Nzoia	24,675	20,084	18,046	18,775	18,918
South Nyanza	13,226	11,597	10,113	8,959	8,803
Kibos	5,946	6,277	8,013	7,393	8,087
Soin	1,744	1,825	1,822	1,915	2,799
Butali	18,487	15,526	14,913	19,749	24,021
West Kenya	29,721	38,868	46,716	48,011	59,048
Miwani	3,651	4,017	1,938	1,900	1,615
Sukari	6,419	11,986	15,447	17,710	21,251
Transmara	11,347	14,958	15,075	15,308	16,980
Kwale	9,477	9,488	9,488	6,763	7,287
Olepito	4,949	7,942	8,875	9,013	9,612
Busia	7,501	15,943	14,978	12,858	11,017
Total	**191,215**	**202,400**	**197,438**	**200,513**	**223,006**

Source: AFA-Sugar Directorate

Table 19: Area Harvested by factory 2017-2021 (HA)

FACTORY	2017	2018	2019	2020	2021
Chemelil	4,220	4,971	1,143	6,956	7,134
Muhoroni	5,217	2,641	4,294	5,403	5,276
Mumias	5,951	2,175	-	-	-
Nzoia	9,891	8,230	4,191	7,136	6,137
South Nyanza	6,845	6,464	2,780	1,285	3,249
Kibos	2,631	2,717	1,916	2,894	3,517
Soin	-	-	-	-	-
Butali	7,510	11,204	8,656	13,273	10,977
West Kenya	14,121	18,000	22,977	12,337	15,158
Sukari	5,357	9,378	12,951	4,562	5,620
Transmara	3,255	3,910	4,587	21,366	28,149
Kwale	2,711	2,390	319	5,833	1,331
Olepito	-	1,000	3,422	3,229	3,498
Busia	-	-	4,288	5,406	3,242
All Companies	**67,709**	**73,080**	**71,524**	**89,680**	**93,288**

Source: AFA-Sugar Directorate

Total cane deliveries in 2021 were 7,659,120 tons compared to 6,810,898 tons in 2020, an increase of 12%. Other than Chemelil, Nzoia, Kibos, Butali, and Kwale sugar companies, all other mills recorded increased cane deliveries in 2021. Mumias and Soin Sugar Companies remained shut down throughout the year. The increase in cane deliveries was primarily attributed to favorable weather conditions for cane growth and the availability of adequate mature cane in most of the sugar zones. For more details, refer to Table 20.

Table 20: Cane Deliveries by Factory 2017-2021(MT)

FACTORY	2017	2018	2019	2020	2021
Chemelil	198,105	226,481	42,587	349,343	347,844
Muhoroni	307,301	215,325	210,514	285,154	317,592
Mumias	314,093	136,586	-	-	-
Nzoia	464,832	393,429	184,254	433,446	350,133
South Nyanza	460,160	490,442	204,701	197,098	422,292
Kibos	677,086	826,404	657,898	937,925	797,758
Soin	-	-	-	-	-
West Kenya	882,887	934,042	1,054,505	1,430,999	1,943,199

FACTORY	2017	2018	2019	2020	2021
Butali	474,868	703,633	562,141	895,794	752,008
Transmara	423,977	576,588	731,840	826,616	1,028,693
Sukari	345,421	533,988	633,230	624,235	973,980
Kwale	202,875	179,914	18,878	268,861	30,042
Olepito	-	45,325	130,520	150,556	188,468
Busia	-	-	174,034	410,871	507,111
All Companies	**4,751,605**	**5,262,157**	**4,605,102**	**6,810,898**	**7,659,120**

Source: AFA-Sugar Directorate

The average cane yield for the sugar industry in 2021 was 69.95 tons per hectare compared to 61.85 tons per hectare recorded in 2020, representing a 13% increase, attributed to favorable weather conditions and improved cane husbandry in most of the sugar zones.

2.3 Industry Performance

2.3.1 Cane Crushed and Sugar Made

Total sugarcane crushed by the industry in 2021 was 7,647,224 tons, up from 6,880,203 tons in 2020, representing an increase of 11% due to increased mature cane deliveries to the mills.

As a result of the increased crushing, the sugar made increased by 22% from 575,506 tons in 2020 to 701,552 tons in 2021. More details are shown on Tables 21 and 22.

Table 21: Sugar Cane Crushed by Factory 2017-2021 (MT)

FACTORY	2017	2018	2019	2020	2021
Muhoroni	321,727	225,094	187,957	279,738	313,539
Chemelil	195,993	228,052	43,487	346,841	353,616
Mumias	280,536	88,201	-	-	-
Nzoia	441,114	393,118	185,844	424,598	353,179
South Nyanza	435,046	508,623	233,722	220,550	430,076
Soin	-	-	-	-	-
Kibos	671,426	832,272	653,443	1,000,076	791,243
Butali	483,931	707,301	574,338	895,241	751,035
West Kenya	862,744	925,894	1,048,270	1,464,241	1,943,199
Sukari	331,271	518,534	633,229	617,810	972,556
Transmara	415,340	730,632	760,179	805,627	1,031,187

FACTORY	2017	2018	2019	2020	2021
Kwale	201,643	172,312	18,020	264,352	30,042
Olepito	-	53,726	97,603	151,093	176,159
Busia	-	-	168,620	410,036	501,393
All Companies	**4,640,771**	**5,383,759**	**4,604,712**	**6,880,203**	**7,647,224**

Source: AFA-Sugar Directorate

Table 22: Sugar Made By Factory (MT)

FACTORY	2017	2018	2019	2020	2021
Muhoroni	21,074	15,981	11,964	18,060	20,671
Chemelil	12,309	15,089	2,606	25,362	22,053
Mumias	15,083	4,751	-	-	-
Nzoia	29,757	27,541	13,003	27,274	21,578
South Nyanza	35,162	40,726	12,448	14,373	32,627
Kibos	52,260	66,751	53,568	85,507	67,880
Soin	-	-	-	-	-
Butali	47,053	65,468	53,577	87,226	79,787
West Kenya	75,270	71,283	85,085	128,786	188,512
Sukari	25,337	44,383	54,067	55,436	96,156
Transmara	42,019	67,275	72,504	78,701	107,347
Kwale	19,688	17,506	339	10,877	1,477
Olepito	-	4,051	8,044	11,926	15,741
Busia	-	-	10,912	31,978	47,723
All Companies	**375,012**	**440,805**	**378,117**	**575,506**	**701,552**

Source: AFA-Sugar Directorate

2.3.2 Cane to Sugar Ratio (Tc/Ts)

Overall, the TC/TS ratio increased by 9% to 10.90 in 2021, up from 11.96 in the previous year. Butali and Transmara sugar factories had the highest sugar recovery rates, with TC/TS ratios of 9.41 and 9.61, respectively. Butali experienced good recoveries due to thorough factory maintenance undertaken in September and October 2021. Kwale sugar factory, on the other hand, had the lowest sugar recovery with a TC/TS of 20.34, which was attributed to milling over mature cane with very low sucrose content. Similarly, all the state-owned factories had poor sugar recoveries, with Nzoia and Chemelil registering conversion ratios of 16.37 and 16.03, respectively as summarized in Table 23 below.

Table 23: Cane to Sugar Ratio (TC/TS)

FACTORY	2017	2018	2019	2020	2021
Chemelil	15.92	15.11	16.69	13.68	16.03
Muhoroni	15.27	14.09	15.71	15.49	15.17
Mumias	18.6	18.56	N/A	N/A	N/A
Nzoia	14.82	14.27	14.29	15.57	16.37
South Nyanza	12.37	12.49	18.78	15.35	13.18
Kibos	12.85	12.47	12.2	11.7	11.66
Butali	10.28	10.8	10.72	10.26	9.41
West Kenya	11.46	12.99	12.32	11.37	10.31
Sukari	13.07	11.68	11.71	11.14	10.11
Transmara	9.88	10.86	10.48	10.24	9.61
Kwale	10,24	9.84	53.13	24.3	20.34
Olepito	N/A	13.26	12.13	12.67	11.19
Busia	N/A	N/A	15.45	12.82	10.51
All Companies	**12.37**	**12.21**	**12.18**	**11.96**	**10.9**

Source: AFA-Sugar Directorate

2.4 Sugar Production, Sales and Closing Stocks

2.4.1 Sugar Production (Bagged)

The year 2021 saw the highest production in the history of the Kenya sugar sector. Total sugar production (bagged) was 700,241 tons from January to December 2021, up from 603,788 tons in the same period in 2020, a 16% increase, attributed to improved cane supply in all sugar zones. Favorable weather conditions during the review period, supported good sugarcane production.

During the year 2021, Chemelil, Nzoia, Kibos, Butali, and Kwale recorded decreases in sugar production. West Kenya and Transmara sugar companies were the best performers, producing 188,512 tons (27%) and 107,233 tons (15%), respectively as shown on Table 24.

Table 24: Sugar Production (Bagged) by Factory 2017-2021 (MT)

FACTORY	2017	2018	2019	2020	2021
Chemelil	11,951	14,598	2,863	24,328	21,681
Muhoroni	20,942	14,886	10,601	17,464	19,711
Mumias	13,575	4,768	-	-	-
Nzoia	29,394	28,195	12,582	26,977	21,015
South Nyanza	35,060	40,149	12,573	13,908	32,786
Kibos	52,110	66,599	53,249	85,339	68,139
Soin	-	-	-	-	-
Butali	47,053	65,292	53,577	87,227	79,787
West Kenya	74,770	107,350	136,305	151,802	188,512
Sukari	29,542	60,401	68,657	63,146	96,156
Transmara	42,025	67,040	72,011	78,761	107,233
Kwale	19,689	17,570	339	10,875	1,477
Olepito	-	4,249	8,043	11,933	15,741
Busia	-	-	10,135	31,978	48,003
All Companies	**376,111**	**491,097**	**440,935**	**603,738**	**700,241**

Source: AFA-Sugar Directorate

2.4.2 Sugar Sales and Closing Stocks

Total sugar sales from January to December 2021 were 695,348 tons, up from 608,389 tons in 2020, a 14% increase, attributed to increased sugar production and rising demand for local sugar. The period under review, also recorded a reduction in Mill/white sugar imports, a factor that may have supported local sugar sales.

Closing stock as at 31st December 2021, held by all sugar factories was 6,278 tons, up from 3,669 tons in the same period of 2020. Transmara Sugar Company accounted for 31% of total sugar closing stock during the time period. For more details, refer to Table 25.

Table 25: Comparative Sugar Production, Sales and Closing Stocks in 2020 And 2021 (MT)

SUGAR FACTORY	PRODUCTION		SALES		CLOSING STOCKS	
	2020	2021	2020	2021	2020	2021
MUHORONI	17,464	19,711	17,385	19,537	45	0
CHEMELIL	24,328	21,681	24,279	21,611	46	109
MUMIAS	-	-	0	0	0	0
NZOIA	26,977	21,015	23,627	20,971	401	74
SONY	13,908	32,786	13,900	32,726	31	92

SUGAR FACTORY	PRODUCTION		SALES		CLOSING STOCKS	
	2020	2021	2020	2021	2020	2021
WEST KENYA	151,852	188,512	156,401	187,993	424	921
KIBOS	85,339	68,139	85,654	67,420	15	553
BUTALI	87,227	79,787	90,189	79,030	123	880
TRANSMARA	78,761	107,233	80,828	105,267	0	1,949
SUKARI	63,146	96,156	63,158	95,405	1	752
KWALE	10,875	1,477	8,716	4,025	2,548	0
OLEPITO	11,933	15,741	12,292	14,971	18	787
BUSIA	31,978	48,003	31960	46,392	17	161
TOTAL	**603,788**	**700,241**	**608,389**	**695,348**	**3,669**	**6,278**

Source: AFA-Sugar Directorate

2.5 Molasses Production, Sales and Closing Stocks

Total molasses production in 2021 was 295,574 tons, up from 269,772 tons in 2020, a 10% increase attributed to improved performance, primarily by private millers, on account of raw material availability.

Total molasses sales in 2021 were 304,088 tons, up from 262,792 tons in 2020, a 16 percent increase attributed to better sugar production in 2021. Closing stocks of molasses as at 31st December 2021 totaled 8,821 tons, compared to 17,260 tons in 2020. Refer to Table 26 for more details.

Table 26: Molasses Production, Sales and Stocks 2017 - 2021 (MT)

YEAR	PRODUCTION	SALES	CLOSING STOCKS
2017	192,717	184,116	12,918
2018	211,064	193,694	16,604
2019	186,257	189,038	16,120
2020	269,772	262,792	17,260
2021	295,574	304,088	8,821

Source: AFA-Sugar Directorate

2.6 Market Performance

2.6.1 Sugarcane Prices

In January – December 2021, sugarcane prices averaged KES 3,909 per ton against KES 3,707 per ton in the same period in 2020. The price increase is in tandem with the rising ex-factory sugar prices. Ex-factory sugar price is the only variable in calculating cane price. However, with the introduction of Cane Testing Units (CTU) in all sugar factories, a technical team is working on a cane payment formula that recognizes cane quality.

2.6.2 Ex-factory Sugar Prices

The ex-factory sugar prices for January – December 2021 averaged KES 4,645 per 50kg bag compared to KES 4,381 per 50kg bag in the same period in 2020. The price increase is attributed to rising demand for local sugar due to lower imports of brown/mill white sugar meant for table consumption in 2021.

2.7 Foreign Trade

2.7.1 Sugar Imports

Total sugar imports in 2021 were 426,334 tons compared to 442,393 tons imported in the same period in 2020, giving a decrease of 4%, ascribed to lower imports of table sugar in 2021. The decrease in table sugar imports was due to improved adherence to imports within COMESA quota allocation.

Mill white/brown sugar imports totaled 252,180 tons in 2021, down from 309,408 tons the previous year, an 18% decrease. To meet industrial sugar requirements, 174,154 tons of white refined sugar were imported compared to 132,985 tons the previous year, a 31% increase as shown in Table 27 below.

Table 27: Sugar Imports for 2020 and 2021 by Type

TYPE	JAN - DEC 2020	JAN - DEC 2021
Brown/Mill White (Mt)	309,408	252,180
White Refined (Mt)	132,985	174,154
TOTAL	**442,393**	**426,334**

Source: AFA-Sugar Directorate

2.7.2 CIF Value

In 2021, the C.I.F Mombasa landed prices for imported mill white/brown sugar averaged KES 63,466/ton, compared to KES 56,589/ton for white refined sugar, a difference of KES 6,877 per ton. White refined sugar is generally cheaper than table sugar because most of it is imported under the Duty Remission Scheme from cheap producers.

The total value of Mill white/brown sugar reduced from KES 17.95 billion in 2020 to KES 16 billion in 2021 while the total value of white refined sugar increased from KES 6.5 billion in 2020 to KES 9.8 billion in 2021.

Overall, the C.I.F value for both refined and table sugar, averaged KES 60,657 per ton in 2021, up from KES 55,307 per ton in 2020, a 9% increase. More details refer to table 28 below.

Table 28: Sugar Imports by Type and Values 2017 -2021

	MILL WHITE/BROWN SUGAR			WHITE REFINED SUGAR			TOTAL IMPORTS		
YEAR	QUANTITY (METRIC TONNES)	C.I.F VALUE (KSHS)	C.I.F UNIT VALUE (KSHS/MT)	QUANTITY (METRIC TONNES)	C.I.F VALUE (KSHS)	C.I.F UNIT VALUE (KSHS/MT)	QUANTITY (METRIC TONNES)	C.I.F VALUE (KSHS)	C.I.F UNIT VALUE (KSHS/MT)
2017	829,871	46,283,240,394	**55,772**	159,748	10,305,883,498	**64,513**	989,619	56,589,123,893	**57,183**
2018	122,121	7,574,813,604	**62,027**	162,048	8,075,860,121	**49,836**	284,169	15,650,673,725	**55,075**
2019	285,093	15,913,322,848	**55,818**	173,538	7,887,642,173	**45,452**	458,631	23,800,965,021	**51,896**
2020	309,408	17,947,527,049	**58,006**	132,985	6,519,788,209	**49,027**	442,393	24,467,315,258	**55,307**
2021	252,180	16,004,911,150	**63,466**	174,154	9,855,287,039	**56,589**	426,334	25,860,198,189	**60,657**

Source: AFA-Sugar Directorate

The value of sugar imports in 2021 were valued at KES 25.86 billion compared to value of KES 56.12 billion for locally produced sugar. It is worth noting that the value for locally produced sugar increase by 26% from KES 44.44 billion achieved in the previous year. The increase was due to more sugar being produced in 2021 and was well supported by the rising sugar prices. For more details, refer to Table 29 below.

Table 29: Sugar production, imports and values in 2017 – 2021

YEAR	LOCAL SUGAR			SUGAR IMPORTS			TOTAL VALUE (LOCAL & IMPORTS) in Billion KES
	sugar production (MT)	Factory sugar price (KES/MT) *	**Sugar Value (in Billions KES)**	Sugar Imports (MT)	CIF Value-Mombasa (KES/MT)	**Sugar Value (in Billions KES)**	
2017	376,111	84,168	**31.66**	989,619	57,183	**56.59**	**88.25**
2018	491,097	74,684	**36.68**	284,169	55,075	**15.65**	**52.33**
2019	440,935	70,241	**30.97**	458,631	51,896	**23.80**	**54.77**
2020	603,788	73,601	**44.44**	442,393	55,307	**24.47**	**68.91**
2021	700,241	80,154	**56.12**	426,334	60,657	**25.86**	**81.98**

** Average sugar prices excluding VAT and Levies*

Source: AFA-Sugar Directorate

2.7.3 Sugar Exports

Total sugar exports in 2021 were 1,196 tons compared to 375 tons in 2020. Sugar exports observed were low due to the fact that Kenya is not self-sufficient in sugar production and its high cost of production. Most of the sugar exports were destined for the neighboring countries. For more details, refer Table 30 below.

In summary, the sugar industry has witnessed a steady increase in sugar production due to enhanced investments by both Government and private players. On the other hand, the increase in population has had an upward push in sugar consumption, outpacing domestic production. The country has not reached self-sufficiency in sugar production as several mills continue to operate inefficiently and below capacity. For this reason, the country has been bridging the deficit through the importation of sugar, especially from the COMESA region.

Table 30: Sugar production, Consumption, Imports, and Exports, 2017 – 2021 (MT)

YEAR	PRODUCTION	CONSUMPTION	IMPORTS	EXPORTS
2017	376,111	997,944	989,619	406
2018	491,097	1,008,703	284,169	1,966
2019	440,935	1,039,729	458,631	775
2020	603,788	1,072,414	442,393	375

YEAR	PRODUCTION	CONSUMPTION	IMPORTS	EXPORTS
2021	700,241	1,104,443	426,334	1,196
**All the Consumption figures are estimates				

Source: AFA-Sugar Directorate

2.7.4 World Sugar Market 2021

In the year 2021, the spot price for raw sugar (the ISA daily price) began the year at a monthly average of 15.2 cents/lb (USD 335.08/ton), rising to a monthly average of 16.2 cents/lb (USD 357.13/ton) in February. The following month, March had a slight drop to a monthly average of 15.54 cents/lb (USD 342.13/ton). Prices rose steadily between April and September, reaching a high of 19.57 cents per pound (USD 431.42/ton) in September. Prices dealt on an erratic (up and down) trend in the final quarter of the year, closing December at a monthly average of 18.81 cents/lb (USD 414.67/ton). The lowest monthly average price was 15.2 cents/lb (USD 335.08/ton) in January 2021, while the highest was witnessed in September 2021. Overall, the year ended with an annual average of 17.67 cents/lb (USD 389.44/ton), a 27 percent increase from the previous year's average of 12.85 cents/lb (USD 283.13/ton).

The ISO White Sugar Price Index followed a similar pattern to the raw sugar price index. The year 2021 began with a monthly average price of USD 438.74/ton. The ISO White Sugar Price Index recorded an average price of USD 460.41/ton in February. Prices began to rise and reached a high of USD 509.50 per ton in November. In December, the price fell slightly to USD 498.17/ton, bringing the year to a close. Overall, the annual average price in 2021 was USD 471.10/ton, up from USD 373.01/ton the previous year, representing a 21% increase.

2.8 Challenges facing the Sugar Industry

Some of the challenges facing the sugar industry are:

1. Delayed cane harvesting when there is a lot mature cane in a milling zone
2. Delayed payment of cane proceeds by some mills especially the Government owned mills
3. Non-adherence of timely lifting of all harvested cane to the mill
4. Non availability of affordable inputs when needed
5. Delayed factory maintenance leading to frequent unscheduled factory stoppages and low sugar recoveries
6. Poor state of roads in the sugar zone (feeder roads) which result to increased cane spillage and high maintenance costs of haulage fleets.

Chapter Three

3 NUTS AND OIL CROPS

3.1 Introduction

The nuts and oil crops sub-sector has a huge potential to contribute to the food and nutrition security pillar as well as manufacturing. It contributes significantly to job creation, income generation and production of raw materials for agro-processing industries. Kenya relies heavily on imported edible oil and in 2021 the value of imports was KES 115 billion. For more details, refer to table 52.

There are 13 scheduled nuts and oil crops namely Cashew, Coconut, Sesame / Sim Sim, Sunflower, Macadamia, Canola/Rapeseed, Groundnuts, Oil Palm, Bambara nuts, Jojoba, Safflower, Castor and Linseed.

3.2 Agriculture Performance

3.2.1 Macadamia Nuts

Macadamia is a high-value export market cash crop and is mostly produced in central Eastern, Rift valley, and coastal regions. The leading macadamia producing counties are Embu, Meru, Kiambu, Tharaka Nithi, Murang'a, Kirinyaga and Nyeri. Other counties which have promising potential are Uasin Gishu, Trans Nzoia, and Machakos County. Besides the above-mentioned counties expansion is taking place into nontraditional production areas in Western and Rift Valley.

In the year 2021, the area under macadamia was estimated to be 7,180 ha, which was a slight increase of 37 ha from 7,143 ha recorded in 2020. The total annual production of raw nuts in shell (RNI) of macadamia increased by 8.8% from 39,133 tons recorded in 2020 to 42,562 tons recorded in the year 2021. The increased production is attributed to a rebound of the industry recovering from the effects of Covid 19 that had resulted in reduced economic activities across the country in the previous season.

The average productivity (yield per tree) in Kenya is low relative to the expected yield potential of about 70-100 kg/tree per year. In the year 2021, the average productivity was estimated at 39kg per tree per year from the mature bearing trees and 17kgs per tree per year from the young trees now starting to bear.

The prices of macadamia recorded an improved performance during the year 2021. There was an increase in prices by KES 15 from KES 50/kg reported in 2020 to KES 65/kg reported in 2021. The improved prices are credited to increasing demand for macadamia kernels internationally as traditional consumers resume operations and place orders for the commodity. As a result of the improved prices, the value of macadamia nuts at farm gate has increased from KES 2.27 billion in 2020 to KES 2.78 billion reported in 2021. For more details, refer to Tables 31 – 33.

Table 31: Area under Macadamia Nuts, Production and Value 2020-2021

County	Area (Ha)		Production (MT)		Values (KES) millions	
	2020	2021	2020	2021	2020	2021
Muranga	1,892	1,893	10,823	11,546	693	774
Meru	1,145	1,146	6,614	6,992	390	489
Embu	1,139	736	6,801	4,487	343	292
Kiambu	830	833	4,711	5,080	306	345
Kirinyaga	702	705	3,912	4,300	215	279
Nyeri	407	409	2,011	2,497	101	157
Tharaka Nithi	242	244	1,390	1,487	74	97
Machakos	136	139	821	850	48	51
Nyandarua	132	133	722	810	35	41
Baringo	83	83	481	509	22	31
Busia	75	46	1.2	5.4	0.054	0.297
Taita Taveta	73	74	446	454	24	30
Trans-Nzoia	50	490	59	2,988	3	167
Elgeyo Marakwet	44	44	41	68	2	4
Makueni	41	43	45	65	2	4
Uasin-Gishu	38	45	44	70	2	4
Others	114	117	211	354	12	21
TOTAL	**7,143**	**7,180**	**39,133**	**42,562**	**2,272.05**	**2,786.3**

Source: AFA-Nuts and Oil Crops Directorate

Generally, there has been an expansion of the area under macadamia from 2017-2021. This is due to the expansion of the area under the crop in non-traditional growing areas. A notable increase in area under macadamia was registered in Trans Nzoia County (49 Ha in 2019 to 490 Ha in 2021), where the newly established crop in large-scale farms came into bearing. In Busia County, the increased acreage as a result of newly planted crops reported in the 2019/20 season was revised downwards as a result of crop failure during establishment.

Table 32: Area under Macadamia nuts, Production 2017-2021

County	Area (Ha)					Production (MT)				
	2017	2018	2019	2020	2021	2017	2018	2019	2020	2021
Muranga	1,825	1,887	1,891	1,892	1,893	11,611	12,523	11,057	10,823	11,546
Meru	1,076	1,099	1,143	1,145	1,146	7,048	7,601	6,711	6,614	6,992
Embu	1,091	1,136	1,138	1,139	736	7,143	7,704	6,802	6,801	4,487
Kiambu	812	822	828	830	833	5,231	5,642	4,981	4,711	5,080
Kirinyaga	653	697	701	702	705	4,158	4,485	3,960	3,912	4,300
Nyeri	341	382	406	407	409	2,172	2,342	2,068	2,011	2,497
Tharaka Nithi	233	238	240	242	244	1,484	1,601	1,413	1,390	1,487
Machakos	134	134	136	136	139	850	917	810	821	850
Nyandarua	120	130	130	132	133	763	822	726	722	810
Baringo	79	80	82	83	83	505	545	481	481	509
Busia	73	74	74	75	46	1	1	1	1	5
Taita Taveta	71	72	72	73	74	451	486	429	446	454
Trans-Nzoia	-	-	49	50	490	-	-	56	59	2,988
Elgeyo Marakwet	-	-	43	44	44	-	-	39	41	68
Makueni	-	-	41	41	43	-	-	42	45	65
Uasin-Gishu	-	-	37	38	45	-	-	37	44	70
Others	31	106	109	114	117	198	214	202	211	354
TOTAL	**6,539**	**6,857**	**7,120**	**7,143**	**7,180**	**41,615**	**44,883**	**39,815**	**39,133**	**42,562**

Source: AFA-Nuts and Oil Crops Directorate

Table 33: Value of macadamia nuts produced in 2017-2021

County	Values (KES) millions				
	2017	2018	2019	2020	2021
Muranga	1,451	1,628	1,548	693	774
Meru	881	1,064	973	390	489
Embu	893	924	884	343	292
Kiambu	654	790	757	306	345
Kirinyaga	520	718	594	215	279
Nyeri	271	316	285	101	157
Tharaka Nithi	185	216	203	74	97
Machakos	106	119	109	48	51
Nyandarua	95	99	91	35	41
Baringo	61	82	67	22	31
Taita Taveta	56	65	69	24	30
Busia	0.090	0.101	0.091	0.054	0.297
Trans-Nzoia	-	-	7	3	167
Elgeyo Marakwet	-	-	5	2	4
Makueni	-	-	6	2	4
Uasin-Gishu	-	-	5	2	4
Others	25	30	27	12	21
TOTAL	**5,199.22**	**6,050.70**	**5,631.59**	**2,272.05**	**2,786.30**

Source: AFA-Nuts and Oil Crops Directorate

3.2.2 Coconut

Coconut is one of the most important crops among the Kenyan coastal farmers. It is a crop that is deeply entrenched in the cultures, practices and ways of life of coastal communities. Coconut is mainly grown in Kwale, Kilifi, Lamu, Mombasa, Tana River and Taita-Taveta Counties. Other upcoming counties with promising potential are Tharaka Nithi, Meru, Busia and Siaya.

The area under coconut was estimated to have shrunk by 9% from 84,906 Ha reported in 2020 to an estimated 77,565 Ha reported in 2021 as a result of dry weather conditions experienced. The dry spell however had more adverse effects in Kilifi County where a substantial number of trees were reported to have dried up.

The productivity per tree realized in 2021 significantly reduced from 34 nuts per tree in 2020 to 28 nuts per tree in 2021, besides a reduction in the size of the nuts. The production decreased by 23,459 tons in 2021 as a result of low supply of nuts, while the value increased by KES 487 million in 2021 due to a stable demand from local processors and the increase in farm gate prices from KES 16 to KES 18 per piece in the period under review. For more details, refer to Tables 34 – 36.

Table 34: Area under coconut, Production and Value 2020-2021

County	Area (Ha)		Production (MT)		Value (KES) Millions	
	2020	**2021**	**2020**	**2021**	**2020**	**2021**
Kilifi	41,470	35,664	52,853	39,640	2,384.00	2,378.40
Kwale	31,384	30,873	46,227	37,906	2,139.00	2,426.00
Tana River	1,070	925	822	706.92	35.3	56.6
Lamu	10,722	9,864	6,894	5,584	322	446.7
Mombasa	158	145.36	2,344	1,992	122	159.4
Taita Taveta	102	93.84	873	724.59	36.1	58
TOTAL	**84,906**	**77,565**	**110,013**	**86,554**	**5,038**	**5,525**

Source: AFA-Nuts and Oil Crops Directorate

Table 35: Area under coconut and Production 2017-2021

County	Area (Ha)					Production (MT)				
	2017	**2018**	**2019**	**2020**	**2021**	**2017**	**2018**	**2019**	**2020**	**2021**
Kilifi	40,114	40,225	41,432	41,470	35,664	43,927	44,044	52,853	52,853	39,640
Kwale	30,543	30,895	31,358	31,384	30,873	39,071	39,175	46,227	46,227	37,906
Lamu	9,193	10,503	10,713	10,722	9,864	5,872	5,887	6,771	6,894	5,584
Tana River	1,049	1,050	1,066	1,070	925	739	741	822	822	707
Mombasa	168	151	156	158	145	1,948	1,953	2,344	2,344	1,992
Taita Taveta	96	97	99	102	94	757	759	873	873	725
TOTAL	**81,163**	**82,921**	**84,824**	**84,906**	**77,565**	**92,313**	**92,560**	**109,890**	**110,013**	**86,554**

Source: AFA-Nuts and Oil Crops Directorate

Table 36: Value of coconut produced in 2017-2021

County	Value (KES.) Millions				
	2017	2018	2019	2020	2021
Kilifi	2,500	2,402	2,219.80	2,384.00	2,378.40
Kwale	1,830	1,919.60	2,126.40	2,139.00	2,426.00
Lamu	274	282.6	304.7	322	446.7
Tana River	34.5	36.3	37	35.3	56.6
Mombasa	91	93.8	103.1	122	159.4
Taita Taveta	35.4	37.95	37.5	36.1	58
TOTAL	**4,765**	**4,772**	**4,829**	**5,038**	**5,525**

Source: AFA-Nuts and Oil Crops Directorate

3.2.3 Cashew nuts

Cashew nut is among the oldest cash crops in the Coastal region of Kenya and a major source of income for smallholder farmers in Kilifi, Lamu, Kwale, Taita Taveta, Mombasa and Tana River counties. The emerging counties where cashew is being grown include Tharaka Nithi, Embu, Kitui and Makueni Counties.

Total acreage under cashew nut increased by 2% from 22,689 Ha in 2020 to 23,158 Ha reported in 2021. The increased acreage was a result of new planting reported in Kilifi, Lamu and Kwale counties through government efforts and as part of environmental conservation.

Production declined as a result of the drought conditions prevailing in most parts of the coastal region during the year under review. The total production reduced from 12,668 tons reported in 2020 to 9,121 tons recorded in 2021. The value of cashew nut produced decreased from KES 587.25 million in 2020 to KES 457.4 million in 2021. Most of the harvested produce was consumed domestically after cottage-level processing while less than 20% of the processed kernel was exported. For more details, refer to Tables 37 – 39.

Table 37: Area under cashew nuts, production and value 2020-2021

County	Area (Ha)		Production (MT)		Values (KES) Millions	
	2020	2021	2020	2021	2020	2021
Kilifi	9,445	9,595	4,704	3,387	211.69	162.59
Kwale	7,025	7,135	3,672	2,644	165.24	126.9
Lamu	5,450	5,559	3,803	2,738	190.14	150.6
Taita Taveta	428	428	246	177	9.58	7.96
Tana River	186	186	155	112	6.22	6.15
Others	155	255	88	63	4.38	3.15
Total	**22,689**	**23,158**	**12,668**	**9,121**	**587.25**	**457.4**

Source: AFA-Nuts and Oil Crops Directorate

The highest farm gate prices for raw cashew nuts (RCN) were reported in Lamu and Tana River counties where they averaged KES 55 during the year. In Kilifi, Kwale and Taita Taveta counties lower farm gate prices averaging KES 48/Kg were reported. The market price for Kernel has remained stable in the last two years and averaged KES 1,000/Kg at the cottage factory level across the production belt and KES 1,100/Kg across the country in the retail stores. Farm gate prices are sometimes lower than reported as brokers purchase the products at very low prices since they purchase from individual farmers with low bargaining power. The data analyzed herein shows a struggling industry resulting from neglect and despair among farmers. There is however hope of a rebound expected from expansion into the new production areas of Makueni, Kitui, Tharaka-Nithi and Embu counties.

Table 38: Area under cashew nuts and production 2017-2021

County	Area (Ha)					Production (MT)				
	2017	2018	2019	2020	2021	2017	2018	2019	2020	2021
Kilifi	10,021	9,412	9,460	9,445	9,595	4,030	4,345	4,779	4,704	3,387
Kwale	7,016	7,090	7,020	7,025	7,135	3,199	3,449	3,759	3,672	2,644
Lamu	5,200	5,384	5,438	5,450	5,559	3,174	3,422	3,754	3,803	2,738
Taita Taveta	456	428	430	428	428	218	235	259	246	177
Tana River	208	195	185	186	186	145	156	174	155	112
Others	133	146	153	155	255	65	70	77	88	63
Total	**23,034**	**22,655**	**22,686**	**22,689**	**23,158**	**10,831**	**11,677**	**12,802**	**12,668**	**9,121**

Source: AFA-Nuts and Oil Crops Directorate

Table 39: Value of cashew nuts 2017- 2021

COUNTY	Values (KES) Millions				
	2017	2018	2019	2020	2021
Kilifi	261.95	244.62	244.36	211.69	162.59
Kwale	214.33	216.83	292.81	165.24	126.9
Lamu	23.805	25.275	18.62	190.14	150.6
Tana River	10.15	10.78	15.78	6.22	6.15
Taita Taveta	14.175	15.27	5.76	9.58	7.96
Others	4.225	4.904	5.76	4.38	3.15
Total	**529**	**518**	**583**	**587**	**457**

Source: AFA-Nuts and Oil Crops Directorate

3.2.4 Peanuts (Ground nuts)

Peanuts are majorly grown in the Western and Nyanza regions of the country. However, the crop can be found in other parts of the country such as Eastern, Rift Valley and coastal regions although in smaller quantities. Specifically; Homabay, Kakamega, Vihiga, Migori, Kisumu, Bungoma, Siaya and Busia counties account for the highest amounts of groundnuts produced in Kenya. Other key producing counties are Elgeyo Marakwet Kisii, Baringo, Kwale, Lamu, Taita Taveta, and Trans Nzoia.

The area under the crop recorded 29% increment of 3,176 Ha from 11,098 Ha in 2020 to 14,274 Ha in 2021. The increase is attributed to the opening up of new lands and reduced competition from other crop enterprises such as maize and beans. Other areas however, reported lower yields due to recycling of previous season produce for use as seed.

The overall production increased during the year under review by 2,826 tons as a result of increase in acreage and productivity in Homa Bay, Kakamega and Migori Counties. New strategies and deliberate interventions by county governments through the MoALF&C to open new land for peanut production into the Rift valley, Coast and upper Eastern regions to help increase the production further.

The value of peanuts also increased by KES 76.4 million as a result of the readily available domestic market that has worked in favor of the crop. For more details, refer to Tables 40 – 42.

Table 40: Area under Peanuts, production and value 2020-2021

COUNTY	Area (Ha)		Production (MT)		Value (KES) Million	
	2020	2021	2020	2021	2020	2021
Homabay	3,923	5,529	3,461	3,870	460.31	491.25
Kakamega	1,377	2,100	1,232	2,601	158.88	234.09
Migori	972	1,541	962	1,510	134.71	145.53
Kisumu	902	561	661	592	92.48	74.61
Siaya	671	627	619	502	86.72	65.76
Bungoma	591	760	665	854	86.48	105.11
Busia	515	940	601	846	78.13	93.06
Elgeyo Marakwet	502	339	451	329	45.1	35.26
Vihiga	496	68	420	30	60.9	3.9
Meru	412	849	406	764	52.73	68.73
Kisii	196	365	179	420	24.72	54.02
Tharaka Nithi	121	192	59	115	8.35	11.52
West Pokot	81	15	57	11	22.44	0.99
Trans-Nzoia	67	77	42	45	5.73	4.32
Lamu	67	10	68	9	9.37	1.35
Kwale	61	29	56	15	8.03	1.66
Baringo	52	98	46	87	6.18	9
Taita Taveta	22	14	14	10	2.06	1.1
Tana River	9	107	19	222	2.85	22.2
Others	61	53	54	66	8.1	7.25
TOTAL	**11,098**	**14,274**	**10,072**	**12,898**	**1,354**	**1,431**

Source: AFA-Nuts and Oil Crops Directorate

The highest farm gate prices in 2021 were reported in Lamu County at KES 150/kg and KES 126/kg in Homabay while low prices were reported in Meru and West Pokot at KES 90/Kg. The market prices on the other hand ranged between KES 180/Kg and KES 220/Kg in the major market outlets across the country.

Table 41: Area under Peanuts and production 2017-2021

County	Area (Ha)					Production (MT)				
	2017	2018	2019	2020	2021	2017	2018	2019	2020	2021
Homabay	6,322	5,958	4,132	3,923	5,529	6,328	5,810	3,677	3,461	3,870
Kakamega	1,542	1,624	1,322	1,377	2,100	1,889	2,006	1,177	1,232	2,601
Migori	706	995	814	972	1,541	836	1,161	804	962	1,510
Busia	998	1,025	670	515	940	1,123	1,136	745	601	846
Meru	596	612	529	412	849	978	1,009	523	406	764
Bungoma	588	678	644	591	760	823	941	716	665	854
Siaya	822	711	520	671	627	921	855	467	619	502
Kisumu	1,688	1,421	932	902	561	2,178	1,991	691	661	592
Kisii	226	250	201	196	365	191	226	124	179	420
Elgeyo Marakwet	4,133	4,025	5,109	502	339	4,512	4,692	5,679	451	329
Tharaka Nithi	118	106	96	121	192	140	129	95	59	115
Baringo	106	82	75	52	98	156	144	67	46	87
Vihiga	451	614	560	496	68	577	771	346	420	30
Trans-Nzoia	22	39	56	67	77	31	51	50	42	45
Kwale	55	69	53	61	29	81	104	47	56	15
West Pokot	56	69	72	81	15	81	94	78	57	11
Lamu	98	83	89	67	10	94	85	88	68	9
Taita Taveta	45	41	26	22	14	61	62	19	14	10
Tana River	26	14	11	9	107	28	18	10	19	222
Others	29	33	54	61	53	37	48	61	54	66
TOTAL	**18,627**	**18,449**	**15,965**	**11,098**	**14,274**	**21,065**	**21,333**	**15,463**	**10,072**	**12,898**

Source: AFA-Nuts and Oil Crops Directorate

Table 42: Value of Peanuts 2017-2021

County	Value (KES) Million				
	2017	2018	2019	2020	2021
Homabay	809.98	790.16	514.8	460.31	491.25
Kakamega	230.46	250.75	162.4	158.88	234.09
Migori	105.34	161.38	113.4	134.71	145.53
Kisumu	278.78	248.88	86.3	92.48	74.61
Siaya	117.89	112.01	62.6	86.72	65.76
Bungoma	102.05	125.15	88.8	86.48	105.11
Busia	137.01	147.68	100.6	78.13	93.06
Elgeyo Marakwet	591.07	600.58	709.9	45.1	35.26
Vihiga	76.16	98.69	47.7	60.9	3.9
Meru	119.32	10.97	66.4	52.73	68.73
Kisii	24.83	29.15	16.4	24.72	54.02

County	Value (KES) Million				
	2017	2018	2019	2020	2021
Tharaka Nithi	17.64	16.77	12.3	8.35	11.52
West Pokot	10.37	12.6	10	22.44	0.99
Trans-Nzoia	4	7.14	6.6	5.73	4.32
Lamu	9.25	9.78	10.9	9.37	1.35
Kwale	10.61	14.35	6.4	8.03	1.66
Baringo	19.5	18.72	8.9	6.18	9
Taita Taveta	7.56	8.68	2.6	2.06	1.1
Tana River	3.67	2.45	1.4	2.85	22.2
Others	4.7	6.48	8.5	8.1	7.25
TOTAL	**2680.2**	**2672.4**	**2036.9**	**1354.3**	**1430.7**

Source: AFA-Nuts and Oil Crops Directorate

3.2.5 Bambara nuts

Bambara nut is an indigenous African crop considered a complete food as it contains sufficient quantities of protein, carbohydrates, and fat. In addition to the food, it provides a beneficial farming system advantage of its potential to fix nitrogen in the soil. Bambara nut is reported to be tolerant to drought, poor soils, and extreme heat, hence making it a suitable crop for low-input production systems. It is also reported that under severe drought conditions where groundnuts did not have any kernels, Bambara nut produces small filled pods. The yield potential of Bambara nut ranges between 497kg/Ha and 799 kg/Ha.

The farm gate prices ranged between KES 345/Kg and KES 390/Kg while market prices were reported to be between KES 360 /Kg and KES 400/Kg across various market outlets in the country.

The estimated acreage marginally declined from 187 Ha in 2021 to 185 Ha in 2020. On the other hand, production increased by 15 tons from 450 tons in 2020 to 465 tons in 2021 as a result of better productivity overall. The value of the crop increased by KES 3 million from KES 161 million in 2020 to KES 164 million in 2021. For more details, refer to Tables 43 – 45.

Table 43: Area under Bambara, Production and Value 2020-2021

County	Area (Ha)		Production (MT)		Value (KES.) Millions	
	2020	2021	2020	2021	2020	2021
Busia	97.2	71.2	196	192	68.6	66.24
Kakamega	61.1	82.8	177	192	63.72	68.16
Bungoma	8.2	8.1	19	20	7.22	7.2
Vihiga	7.6	11.2	22	30	8.03	10.5
Lamu	7.2	6.5	24	21	9.36	8.19
Kwale	5.5	4.9	12	10	4.44	3.7
Total	**186.8**	**184.7**	**450**	**465**	**161.37**	**164**

Source: AFA-Nuts and Oil Crops Directorate

Table 44: Area under Bambara nuts and production 2017-2021

County	Area (Ha)					Production (MT)				
	2017	2018	2019	2020	2021	2017	2018	2019	2020	2021
Busia	265.3	259.7	201.2	97.2	71.2	2,415	2,389	1,887.20	196	192
Kakamega	86.1	77.6	67.2	61.1	82.8	834	801	597.5	177	192
Bungoma	7.4	7.7	7.3	8.2	8.1	72	68	63	19	20
Vihiga	9.1	10.2	8.4	7.6	11.2	51	49	66	22	30
Lamu	7	6.2	8.1	7.2	6.5	58	49	80	24	21
Kwale	9	7.5	4.9	5.5	4.9	84	53	35	12	10
Total	**384**	**369**	**297**	**187**	**185**	**3,514**	**3,409**	**2,729**	**450**	**465**

Source: AFA-Nuts and Oil Crops Directorate

Table 45: Value of Bambara nuts produced in 2017-2021

County	Value (KES) Millions				
	2017	2018	2019	2020	2021
Busia	802	800.32	610	68.6	66.24
Kakamega	279	264.33	173.1	63.72	68.16
Bungoma	20	19.04	19.5	7.22	7.2
Vihiga	19	17.15	21	8.03	10.5
Lamu	14	14.21	16.8	9.36	8.19
Kwale	25	15.9	12.2	4.44	3.7
Total	**1,159**	**1,131**	**852.6**	**161.4**	**164**

Source: AFA-Nuts and Oil Crops Directorate

3.2.6 Sesame (Sim sim)

Sesame is predominantly grown in the Coastal and Western parts of the country. Production however production remains low due to poor agricultural practices and lack of variety selection. In the recent past, new export markets are emerging particularly in the Far East, this is expected to result in an expansion of land under the crop as farmers respond to meet buyer demand. In Kenya, the average acreage for sesame production is less than 4 acres. Sesame also faces stiff competition from other crops such as sorghum which have a ready market. The crop is also expected to grow in popularity as a source of high-quality edible oil.

The higher production of sesame reported in the previous four years took a dip in 2021 as a result of the dry weather conditions experienced in the coastal region. Lamu County which is the largest producer was particularly more affected reporting a more than 70% decline in production. The total area under the crop dropped from 12,526 Ha in 2020 to 5,203 Ha in 2021. Similarly, there were depressed yields caused by the depressed rains from 0.8 tons per hectare to 0.6 tons per hectare. The total production volume declined from 10,773 tons valued at KES 979 million in 2020 to 2,845 tons valued at KES 216 million reported in 2021. For more details, refer to Tables 46 – 48.

Table 46: Area under Sesame, Production and Value 2020-2021

County	Area (Ha)		Production (MT)		Values (KES) Millions	
	2020	2021	2020	2021	2020	2021
Lamu	11,539	4,357	10,029	2,567	902.61	191.23
Busia	502	119	370	80.34	40.7	5.59
Mandera	258	169	220	106	20.9	10.18
Tana River	122	496	69	52	5.87	4.3
Bungoma	10	27	11.5	20	1.15	2.3
Siaya	83	19	64	6	6.02	0.62
Kakamega	6.8	1.7	5.3	1.4	0.74	0.14
Homabay	4.7	14	4.1	12.06	0.51	1.21
Total	**12,526**	**5,203**	**10,773**	**2,844.8**	**978.5**	**215.6**

Source: AFA-Nuts and Oil Crops Directorate

Table 47: Area under Sesame and Production 2017-2021

County	Area (Ha)					Production (MT)				
	2017	2018	2019	2020	2021	2017	2018	2019	2020	2021
Lamu	3,210	11,200	11,480	11,539	4,357	3,298	7,840	9,924	10,029	2,567
Busia	733	720	490	502	119	344	418	363	370	80.34
Mandera	140	160	230	258	169	88	96	204	220	106
Tana River	268	113	138	122	496	168	51.2	77.1	69	52
Bungoma	21	16	12	10	27	19	14.2	10.2	11.5	20
Siaya	94	101	98	83	19	52	69	70.1	64	6
Kakamega	5	5	7	6.8	1.7	2.5	3.6	5.7	5.3	1.4
Homabay	5	6	5	4.7	14	2	4	3.7	4.1	12.06
Total	**4,474**	**12,321**	**12,460**	**12,526**	**5,203**	**3,974**	**8,496**	**10,658**	**10,773**	**2,845**

Source: Nuts and oil Crops Directorate

Table 48: Value of Sesame 2017-2021

County	Values (KES) Millions				
	2017	2018	2019	2020	2021
Lamu	197.16	428.11	541.3	902.61	191.23
Busia	46.912	47.895	39.9	40.7	5.59
Mandera	9.782	10.33	22.3	20.9	10.18
Tana River	1.755	0.86	0.91	5.87	4.3
Bungoma	1.302	1.04	0.99	1.15	2.3
Siaya	6.392	7.01	7.12	6.02	0.62
Kakamega	0.31	0.46	0.77	0.74	0.14
Homabay	0.3	0.52	0.51	0.51	1.21
Total	**264**	**496**	**614**	**979**	**216**

Source: Nuts and Oil Crops Directorate

3.2.7 Canola

Canola is now becoming a mainstream crop in areas with optimal temperatures between 15 to 20 degrees Celsius. It is estimated that there are more than 300 canola farmers in Kenya mainly growing it as a rotational crop. Canola is mainly grown by large-scale maize, wheat and barley farmers.

The production for canola stood at 14,431 tons in 2020 from 14,268 tons in 2021 which was an increase of 163 tons. There was an increase in acreage from 4,091 Ha in 2020 to 4,236 Ha in 2021 as a result of more small-scale farmers being contracted by the processing companies to produce the crop for oil extraction. The value of the crop increased from KES 570,098 in 2020 to KES 690,354 in 2021. Farm gate prices increased slightly during the year 2021 to range between KES 45 and KES 50. The prices in the subsector are however not competitive as the crop is only sold to one major processing company which contracts farmers across the country for use in margarine and vegetable oil production. For more details, refer to Table 49.

Table 49: Area under Canola, Production and value 2020 -2021

County	Area (Ha)		Production (Tons)		Value KES (Millions)	
	2020	2021	2020	2021	2020	2021
Nakuru	1,135	1,157	3,915	4,091	176,202	204,550
Laikipia	1,100	1,170	3,790	3,811	170,550	171,495
Meru	604	720	1,832	1,944	20,804	89,424
Narok	259	237	870.7	832	39,182	37,440
Uasin Gishu	163	175	560.4	603	24,097	30,150
Nyeri	149	173	470.3	523	19,753	24,058
Trans -Nzoia	144	138	643.7	628	28,323	30,144
Baringo	140	98	598	506	23,920	26,312
Samburu	132	124	504.3	477	21,181	23,850
Nyandarua	122	135	520.2	501	23,409	27,054
Elgeyo/Marakwet	98	75	402.2	386	16,088	20,072
Bungoma	45	34	160.7	129	6,589	5,805
Total	**4,091**	**4,236**	**14,268**	**14,431**	**570,098**	**690,354**

Source: Nuts and Oil Crops Directorate

The high demand for vegetable oils provides a ready market for canola. Primarily grown by large-scale farmers for soil improvement, the crop is now being embraced by small-scale farmers across the country where pockets of the crop can be sported in high-altitude areas such as Timau, Endebess, Moiben and Mau Narok.

3.3 Market Performance

The domestic market for nuts and oil crops is dominated by coconuts sesame and peanuts. A large proportion of coconut produced in Kenya is sold in raw form at farm gate dominated by middlemen as the main marketing channel. A similar scenario is reflected in the peanuts value chain whereby most of the produce is marketed in the local markets within the production zones.

Value added coconut products imported mainly from Asian countries account for a significant volume of the country's coconut imports. Peanuts imports supplement domestic production accounting for most of the peanuts consumed across major towns and cities in the country. Significant number of groundnuts are imported from our neighboring countries including Uganda, Tanzania and Malawi.

Nuts and oil crops exports performance has generally been good over the years dominated by macadamia and cashew products (Refer to Table 50 & 51). Globally, Kenya is ranked as the third largest exporter of Macadamias after Australia and South Africa respectively. The country has increased its competitiveness in terms of macadamia exports which account for 90% of the volumes produced. Considering the ongoing planting and expansion to non-traditional production areas together with ongoing investments in processing facilities, the subsector is likely to significantly contribute to Kenya's exports and cement its position be among the leading exports. Although Kenya is a net exporter of nuts, the country imports some nuts for local consumption and also to bridge the raw materials deficit in her processing facilities.

On the converse, Kenya is a net importer of edible oils whereby imports account for over 95% of her consumption needs. The major types of oils imported into Kenya include: palm oil, sunflower oil, coconut oil, rapeseed oil and soybean oil among others dominantly from Indonesia Malaysia, Egypt and Canada.

Table 50: Key export destinations of macadamia from Kenya 2017- 2021

Country of destination	2017		2018		2019		2020		2021	
	Quantity (MT)	Value Million (KES)	Quantity (MT)	Value Million (KES)	Quantity (MT)	Value Million (KES)	Quantity (MT)	Value Million (KES)	Quantity (MT)	Value Million (KES)
USA	3,904	4,964	3,755	5,334	3,398	4,783	2,942	3,209	5,098	5,835
Germany	572	615	983	1,344	673	927	888	1,240	1,068	1,435
Netherlands	603	724	660	776	489	632	678	718	708	765
China	256	24	107	133	49	40	16	21	417	444
Viet Nam	237	204	173	213	285	88	123	348	255	438
Japan	154	380	188	303	92	498	191	210	262	402
Spain	15	29	30	61	27	53	139	229	323	365
Canada	6	8	100	86	51	66	120	125	181	233
Israel	42	28	81	85	48	38	68	117	22	35
United Kingdom	48	6	15	2	67	39	22	5	95	76
Others	288	711	316	490	131	198	264	337	707	525
Total	**6,125**	**7,694**	**6,408**	**8,827**	**5,310**	**7,363**	**5,451**	**6,559**	**9,136**	**10,554**

Source: Nuts and Oil Crops Directorate

** FOB Values*

Table 51: Table Key export destinations of cashew nuts from Kenya 2017-2021

County of Destination	2017		2018		2019		2020		2021	
	Volume MT	Value Million KES	Volume MT	Value Million KES	Volume MT	Value Million KES	Volume MT	Value Million KES	Volume MT	Value Million KES
USA	190	147.33	78	63.305	79	56.097	120	59.313	144	85.651
Netherlands	32	30.19	0	0	16	12.749	31	12.139	124	76.439
Canada	111	91.5	0	0	32	25.906	0	0	72	45.183
Germany	22	3.4	0	0	0	0	79	61.124	35	26.65
Others	188	147.96	19	18.64	29	20.2	44	27.69	58	30.82
Total	**543**	**420.38**	**97**	**81.945**	**156**	**114.95**	**274**	**160.27**	**433**	**264.74**

Source: Nuts and Oil Crops Directorate

3.3.1 Edible Oil Market Performance

i. Global status

Global production of vegetable oils continues to decrease in the last few years compared to consumption requirements. The high demand for edible oil coupled with the declining volumes has only worked to push prices very high beyond the reach of most consumers. The prevailing situation has been made worse by the effects of the Covid 19 pandemic besides the unfavorable weather conditions in major producing countries such as Malaysia, Thailand and Canada. Additionally, the war between Russia and Ukraine has exacerbated the situation as the two countries are major edible oil producers, especially sunflower. Edible oil supply chain analysis indicates that palm oil remains the world's most important vegetable oil in terms of production and consumption, with output estimated at 76.5 million tons in 2020

ii. Kenya's consumption

Kenya's local production of vegetable oils and fats accounts for less than 6% of the demand. The estimated vegetable oil requirement for Kenya is about 1,000,000 tons, valued at about KES 116 billion. About 95% of the imported oil is mainly in the form of crude palm oil, which is imported from South-East Asian Countries making edible oil the country's second most important import item after petroleum.

iii. Kenya's Imports of edible oils

Kenya is a net importer of edible oil. This is mainly attributed to the fact the country has a limited supply of raw materials due to low production volumes. Currently, the country's domestic source of edible oil is canola, coconut and avocado which are produced in small volumes and hence insufficient to meet the country's consumption and processing requirements.

The global edible oil markets have faced turbulence and supply chain disruptions exposing Kenya to high prices at the retail level due to her over-reliance on imports (mainly as crude oil). For instance, the price of cooking oil has more than doubled (over

100% increase). The depreciation of the Kenyan shilling and scarcity of US dollars has further aggravated the situation.

In 2021, Kenya imported 876,177 tons of vegetable oil valued at KES 115.040 billion. Crude palm oil remains Kenya's main edible oil import commodity accounting for over 97% of the total imports followed by sunflower and rapeseed in that order which account for 1% and 0.5%. There was a 26% decline in the quantities of imported palm oil from 1,156,851.85 tons reported in 2021 to 853,689 tons reported in 2022. The decline was largely reflected in the total edible oil import volumes which also declined by the same margin. The decreased volumes were attributed to the availability of the previous year's stocks carried over into the year 2021. For more details, refer to Table 52.

Table 52: Quantity (MT) and value of imported edible oil

Type of Oil	2019		2020		2021	
	Quantity (MT)	Value (KES)	Quantity (MT)	Value (KES)	Quantity (MT)	Value (KES)
Palm oil	936,750.24	54,250,020,504	1,156,851.85	89,657,840,249	853,689	111,282,334,010
Sunflower oil	7,733.72	648,897,501	6,703.36	553,794,293	7,639	1,166,248,434
Rapeseed oil	3,950.67	403,053,605	2,651.50	285,862,693	1,612	251,555,659
Canola oil	985.08	118,751,007	615.26	70,309,466	637	89,632,577
Soya bean oil	963.53	84,932,111	6,119.18	739,890,291	5,901	936,999,718
Olive oil	709.33	230,786,393	1,131.21	278,949,883	816	278,078,510
Castor oil	156.21	30,417,757	616.76	141,028,439	2,909	543,714,686
Coconut oil	117	10,413,000	129	11352000	144	1,252,800
Peanut oil	48.92	11,677,084	25.61	6,100,409	3	526,552
Mustard oil	13.86	1,514,338	28.79	4,993,132	35	5,066,919
Sesame oil	12.33	1,989,721	24.83	5,927,523	12	3,530,848
Avocado oil	1.10	635,968	160.85	59,879,329	35	5,066,919
Other vegetable oils	50.85	12,549,421	34.70	6,463,610	2,744	476,270,580
Total	**951,493**	**55,805,638,410**	**1,175,093**	**91,822,391,317**	**876,177**	**115,040,278,212**

Source: Nuts and Oil Crops Directorate

Table 53: Nuts and Oil Crops subsector challenges and mitigation measures

Challenge	Mitigation
Inadequate research and development for improved production and value addition technologies	Enhance collaboration/resource mobilization to fund research activities
Uncontrolled logging of trees such as cashew and coconut which will lead to reduced acreage and production	Sensitization of the players on the economic value of the trees and improved marketing system to reduce farmer apathy
Inadequate planting materials for orchard rehabilitation	Enhance quality seedlings production
Inadequate value addition	Enhance investment/technology transfer
Unstructured marketing systems	Organize players and create market links

Chapter Four

4 MIRAA, PYRETHRUM AND OTHER INDUSTRIAL CROPS

4.1 Pyrethrum

Pyrethrum is one of the enterprises in Kenya's economy, grown in 18 counties namely: Meru, Nyandarua, Nyeri, Kiambu, Trans Nzoia, Uasin Gishu, Bungoma, West Pokot, Elgeyo Marakwet, Nandi, Baringo, Laikipia, Nakuru, Narok, Kericho, Bomet, Kisii and Nyamira.

4.1.1 Agriculture Performance

4.1.1.1 Area under Pyrethrum

The area under pyrethrum dropped by 521 acres from 8,280 acres recorded in 2019 to 7,759 acres in 2020. Nakuru County had the highest decrease in area by 1,205 acres as shown in Table 54 below.

Table 54: Area Under Pyrethrum 2017-2020 in Acres

County	2017	2018	2019	2020
Kiambu	12	15	6	6
Nyandarua	250	155	511	539
Nyeri	60	65	33	10
Meru	10	50	21	9
Baringo	50	65	62	68
Elgeyo Marakwet	178	120	678	1,250
Kericho	15	112	116	112
Laikipia	30	100	65	65
Nakuru	979	2,927	2,927	1,722
Nandi	3	5	*5*	*2*
Narok	89	53	209	200
Trans Nzoia	2	2	14	12
Kisii	41	70	660	660
Uasin Gishu	20	40	678	809
West Pokot	570	2,200	2,200	2,200
Bungoma	3	7	12	12
Nyamira	15	14	23	23
Bomet	35	70	60	60
Total	**2,362**	**6,070**	**8,280**	**7,759**

Source: Miraa, Pyrethrum and Other Industrial Crops Directorate

4.1.1.2 Dry Flowers Deliveries

Dry flowers delivered increased by 75.7% from 284.9 tons in 2020 to 500.6 tons in 2021. Production has been increasing due to planting material distribution efforts by the County governments, processors, individual propagators, inter-farm and other industry stakeholders. The value of the dry flowers increased from KES 57 million in 2020 to KES 106.7 million in 2021. For more details, refer to Table 55 & 56.

Table 55: Dry Flowers Delivered by County in Kgs 2017-2021

County	2017	2018	2019	2020	2021
Kiambu	2,889	1,577	755	1,191	701
Nyandarua	8,844	13,112	7,801	35,250	121,901
Nyeri	1,019	1,791	3,272	4,341	1,296
Meru	198	187	2,517	2,410	622
Baringo	2,368	3,377	3,272	684	1,750
Elgeyo Marakwet	3,428	5,414	1,955	895	1,078
Kericho	3,736	4,444	5,637	669	15,176
Laikipia	747	1,655	5,033	1,385	10,123
Nakuru	40,344	59,293	147,319	194,539	261,320
Nandi	60	103	1,207	82	162
Narok	1,340	1,905	2,677	1,197	1,297
Trans Nzoia	1,002	23	604	18	14
Kisii	8,017	9,910	3,523	1,203	1,941
Uasin Gishu	4,524	6,860	2,013	5,256	4,218
West Pokot	62,084	64,267	110,728	20,001	44,980
Bungoma	10	161	352	9,750	-
Nyamira	2,531	2,888	705	891	1,382
Bomet	4,440	10,864	3,523	5,152	32,603
Total	**147,581**	**187,831**	**302,893**	**284,914**	**500,564**

Source: Miraa, Pyrethrum and Other Industrial Crops Directorate

Table 56: Dry Flowers Delivered and Value 2017-2021

Year		2017	2018	2019	2020	2021
	Unit	**Pyrethrum flowers (dry)**				
Production (dry flower)	MT	147.6	187.9	303	284.9	500.5
Average Price (1.4%)	KES/kg	130	151.91	217.77	200	213
Value	KES Million	19.2	28.5	68.5	57	106.7

Source: Miraa, Pyrethrum and other Industrial Crops Directorate

4.1.2 Market Performance

The main pyrethrum products include refined extract which is used for the formulation of pesticides. In the period under review a total of 11.5 tons was produced valued at KES 287.5 million against 5.7 tons produced in 2020 valued at KES 131.96 million. For more details, refer to Table 57.

Table 57: Pyrethrum Extract – Volume and Value 2017-2021

Pyrethrum Extract						
Year		**2017**	**2018**	**2019**	**2020**	**2021**
Production(factory)	MT	3	3.8	7.4	5.7	11.5
Price	KES/Kg	24,990.95	24,980.19	24,999.26	23,151.35	25,000
Value	KES Million	74.97	94.92	184.99	131.96	287.50

Source: Miraa, Pyrethrum and other Industrial Crops Directorate

4.2 Bixa

Kenya is the second-largest exporter of Bixa after Peru. *Bixa Orellana* is planted commercially for its pigment, extracted from the pericarp of the seeds first by grinding the seeds and then extracting the pigment through the use of enzymes, solvents, or oil (corn oil or soybean oil). Solvents include alkaline solutions like sodium hydroxide or potassium hydroxide, as well as organic solvents, including hexane, acetone, chloroform and ethanol. Extractions using organic solvent yield the annatto pigment.

The annatto pigment has global economic significance, as it is one of the most widely used natural dyes. Due to its solubility in lipids, it is widely used in the food industry for giving red to orange-yellow colours to cheese, butter, oils, margarine, ice cream, candy, rice, meats, condiments, confectionaries, cosmetics, formulation of pharmaceutical and bakery products. It owes its success in the dairy sector to the comparative instability of equivalent certified synthetic materials as well as to its proven non-toxicity and vitamin A content.

4.2.1 Agriculture Performance

In Kenya, Bixa Orellana has been a cash crop grown by smallholders in the Kenyan Coast counties of Kwale and Lamu since the 1970s due to favorable climatic conditions with altitudes below 500m above sea level. Kenya's production ranges from 1,500 tons to 2,000 tons of Bixa seed annually.

4.2.1.1 Area under Bixa

The area under Bixa increased from 5,174 acres in 2020 to 27,187 acres in 2021 as a result of new farmers being contracted by the region's main processor and also due to crop scheduling by the MoALF&C. For more details, refer to Table 58.

Table 58: Area under Bixa (Acres)

County	2020	2021
Kwale	3,982	22,242
Lamu	1,192	4,945
Total	**5,174**	**27,187**

Source: Miraa, Pyrethrum and other Industrial Crops Directorate

4.2.1.2 Production (Bixa Seeds Delivered)

The total Bixa seeds delivered decreased from 2,035 tons recorded in 2020 to 1,781 tons in 2021 representing a 12.5% drop. The average price/Kg (KES 50) paid to the grower has remained constant over the last five years due to monopolistic nature in the Bixa value chain. For more details, refer to Table 59.

Table 59: Bixa Seeds Delivery and Value 2017 – 2021

Year	Lamu (MT)	Kwale (MT)	Total (MT)	Avg. Unit Price (KES/Kg)	Value '000(KES)
2017	300.24	776	1,076	50	53,792
2018	472.32	1,179	1,651	50	82,553
2019	658.72	1,183	1,842	50	92,100
2020	858	1,177	2,035	50	101,732
2021	792.35	988	1,781	50	89,040

Source: Kenya Bixa Limited

4.2.2 Market Performance

4.2.2.1 Bixa Export

The Bixa seeds are processed to produce an extract called Norbixin. Norbixin produced is exported to South Africa, Denmark, Brazil, the USA, Japan and Israel. During the year under review, a total of 61 tons of Norbixin valued at KES 219 million was exported against 51.7 tons valued at KES 185 million in 2020. The increase in volume and value was attributed to high demand of Norbixin in the international market. For more details, refer to Table 60.

Table 60: Norbixin Exports in Kgs 2017- 2021

PERIOD	DESTINATION	QUANTITY (KGS)	TOTAL '000(KES)
2017	South Africa	2,300	8,280
	Denmark	17,100	61,560
	USA	4,900	17,640
	Brazil	3,000	10,800
	Total	**27,300**	**98,280**
2018	South Africa	1,500	5,400
	Denmark	42,900	154,440
	USA	9,000	32,400
	Japan	500	1,800
	Israel	100	360
	Brazil	7,000	25,200
	Total	**61,000**	**219,600**
2019	South Africa	2,400	8,640
	Denmark	35,000	126,000
	USA	24,000	86,400
	Japan	600	2,160

PERIOD	DESTINATION	QUANTITY (KGS)	TOTAL '000(KES)
	Total	**62,000**	**223,200**
2020	South Africa	2,800	10,080
	Denmark	20,700	74,520
	USA	26,400	95,040
	Japan	1,600	5,760
	Israel	160	576
	Total	**51,660**	**185,976**
2021	South Africa	1,430	5,148
	Denmark	35,000	126,000
	USA	24,000	86,400
	Japan	360	1,296
	Israel	260	936
	Total	**61,050**	**219,780**

Source: Miraa, Pyrethrum and other Industrial Crops Directorate

Chapter Five

5 FIBRE CROPS

Fiber Crops Directorate is mandated to promote, regulate and develop cotton and sisal value chains in the country.

5.1 Cotton

Cotton is among the few industrial cash crops that thrives well in arid and semi-arid areas and in is grown in twenty-four counties. It contributes in increasing the households' incomes and plays a big role in reducing poverty and increasing food security in close to twenty-four counties, where it is grown mainly under Rainfed conditions. The crop is also grown under irrigation, albeit in only 100 acres, mainly in Bura/Hola Irrigation Scheme in Tana River County, though there is a potential of up to 35,000 ha of land for irrigation.

Currently only four privately owned ginneries out of 24 total ginneries are operational. The closure of the remaining 20 ginneries was due to obsoleteness of the equipment, high maintenance and operational costs, poor governance and lack of raw material (cotton seed).

Agriculture performance

5.1.1 Area under Cotton

The area under cotton increased by 803 Ha from 9,837 Ha in 2020 to 10,640 Ha in 2021 translating to 8% increase. This was as a result of GOK intervention through Fibre Crops Directorate in collaboration with the relevant county governments in the issuing of planting materials and pesticides to farmers. For more details, refer to Table 61.

Table 61: Area under Cotton by County in 2020 and 2021

YEAR	2020	2021
COUNTY	AREA PLANTED (HA)	
Lamu	520	800
Meru	600	2,688
Homabay	1,383	840

YEAR	2020	2021
COUNTY	AREA PLANTED (HA)	
Kitui	1,600	834
Siaya	1,940	1,400
Baringo	200	148
Busia	1,237	1,400
Makueni	1,000	458
Kisumu	99	60
Embu	160	396
Bungoma	120	72
Tharaka Nithi	200	812
Machakos	400	520
Tana River	40	56
Kilifi	60	20
Elgeyo Marakwet	41	24
Taita Taveta	40	40
Kwale	100	24
Kirinyaga	12	28
Kakamega	32	0
Isiolo	5	0
Migori	40	20
Murang'a	8	0
Uasin Gishu	-	0.3
TOTAL	**9,837**	**10,640**

Source: AFA Fibre Crops Directorate

There was no steady rise or fall under the area under cotton for the last five years, a trend that could be attributed to by many factors. Key among them being, due to enhanced campaigns by the Directorate and other stakeholders to revive the subsector, hence the sharp rise in 2019, when the National Government's Big 4 Agenda, the Manufacturing Pillar where cotton was vouched as one of main contributor to increasing the GDP from 9% to 15%.

The growers were motivated to expand area under the crop as they would receive a price support of Ksh 6/= per Kg. This would raise the price of seed cotton from the prevailing market price of Ksh 46/= to Ksh 52/= per Kg then. This however did not have concomitant rise in production due to pest menace, among other challenges.

5.1.2 Seed Cotton production

The quantity of seed cotton produced in the year under review dropped by 61.7% from 3,390 tons in 2020 to 1,300 tons in 2021. Despite the increase in area under cotton from 9,837 Ha in 2020 to 10,640 Ha in 2021, production decreased due to late cotton seed distribution to farmers and pest infestation such as jassids and mealy bugs which defied various pesticides in the market, and ravaged on the crop when it was at critical stage. For more details, refer to Table 62.

Table 62: Seed Cotton Production (MT) in 2020-2021 by counties

YEAR	2020	2021
COUNTY	SEED COTTON (MT)	
Lamu	861	203
Meru	694	211
Homabay	468	224
Kitui	297	100
Siaya	189	191
Baringo	157	69
Busia	150	36
Makueni	117	31
Kisumu	79	34
Embu	55	7
Bungoma	52	3
Tharaka Nithi	47	24
Machakos	46	31
Tana River	36	65
Kilifi	31	2
Elgeyo Marakwet	30	20
Taita Taveta	30	18
Kwale	28	13
Kirinyaga	8	7

YEAR	2020	2021
Kakamega	6	-
Isiolo	5	-
Migori	3	10
Murang'a	1	-
Uasin Gishu	-	1
TOTAL	**3,390**	**1,300**

Source: AFA Fibre Crops Directorate

Table 63: Area, Production and Productivity 2017-2021

YEAR	2017	2018	2019	2020	2021
Area (Ha)	20,717	13,617	18,000	9,837	10,640
Seed Cotton production (MT)	11,850	5,321	3,015	3,390	1,300
Yield (Kgs/ha)	572	391	168	345	122

Source: AFA Fibre Crops Directorate

Market performance

5.1.3 Lint production

The Country has not been able to satisfy the local Textile Mills capacity with lint as the trend follows that of the seed cotton. Generally, Seed Cotton to Lint conversion is 1:3 ratios (one-third lint: two-third seed). The quantity of cotton lint produced reduced during the year under review to 3,019 bales from 6,106 bales in 2020 translating to 50.6% decline and the five-year trend in cotton lint production is as shown in Table 64 below.

Table 64: Lint production and Value 2017-2021

YEAR	2017	2018	2019	2020	2021
Bales of Lint cotton (185 kgs)	21,351	10,674	5,432	6,106	3,019
Price of lint (KES/Kg)	164	164	190	180	190
Value of lint (KES Million)	648	324	190	203	106

Source: AFA Fibre Crops Directorate

5.2 Sisal

Kenya comes in position three as a sisal fibre producer in the world, after Tanzania, and Brazil which is the leading producer. Sisal is predominantly grown by ten (10) sisal estates spread across the Coast, Eastern and Rift Valley regions in the country while the smallholder growers accounting for about 5% of total sisal production are spread all over the arid and semi-arid lands of the country. This crop grown along the boundary, hedge rows and as a soil conservation measure to prevent erosion, in heavily eroded areas.

5.2.1 Area under Sisal

A total of 39,624 Ha was under crop in 2021, representing a 2.65% decline from the previous year's area which was 40,701 Ha. The total area under the smallholders is approximated at 5000 Ha mainly in the counties of Migori, Homabay, Siaya, Kisumu, Makueni, Baringo, Nakuru, West Pokot, Meru, Embu, Taita Taveta, and Kilifi among others. Area under the crop by county in 2021 is as illustrated in Table 65 below.

Table 65: Area under Sisal 2018 – 2021 in Hectares

COUNTY	AREA(HA)			
	2018	**2019**	**2020**	**2021**
Makueni	5,250	5,250	5,250	5,250
Kilifi	4,599	4,599	4,599	5,250
Taita Taveta	12,175	12,175	12,175	11,524
Baringo	2,520	2,520	2,520	2,520
Kwale	5,880	5,880	5,880	5,880
Nakuru	4,200	4,200	4,200	4,200
Others	6,072	6,072	6,077	5,000
TOTALS	**40,696.00**	**40,696.00**	**40,701.00**	**39,624.00**

Source: AFA Fibre Crops Directorate

5.2.2 Sisal production (MT)

During the period under review, there was a 5.5% increase in sisal production from 30,523.37 tons in 2020 to 32,208.93 tons in 2021. As illustrated in Table 66 below.

This high production could be attributed to;

- Resumption of production by Voi Estates under new management after having closed down in 2020
- Increased number of marketing agents registered during the period under review who contracted smallholder farmers who did not have access to readily available markets for their sisal fibre.
- Improved weather conditions.

Table 66: Sisal Production from 2017 - 2021

County	2017	2018	2019	2020	2021
Makueni	6,667.75	6,878.00	6,791.90	6,651.05	6,279.15
Kilifi	4,776.70	4,894.55	4,681.52	4,674.70	3,639.10
Taita Taveta	7,567.00	8,173.75	7,952.00	10,975.40	12,802.00
Baringo	667.13	1,131.55	1,688.90	2,275.50	2,524.75
Nakuru	1,861.90	1,851.75	2,333.14	2,947.72	2,905.73
Kwale	528	735	2,282.00	2,120.00	2,814.00
Others	480.74	584.60	910.74	879.00	1,244.20
TOTAL	**22,549.22**	**24,249.20**	**26,640.20**	**30,523.37**	**32,208.93**

Source: AFA Fibre Crops Directorate

Market Performance

5.2.3 Sisal Fibre Exports

Kenyan Sisal is known for its high quality and thus it's highly sorted for in many export markets worldwide. Over 90% of the sisal produced in the country is exported to over 35 destinations worldwide as raw fibre in West Africa, North Africa, the Arabian, Asia and Europe. In 2021, 28,928 tons of the sisal fibre produced was exported to various overseas destination, forming 92% of total production. There was an increase in the value of sisal exported from KES 4,670 million in 2020 to KES 5,120 million in 2021. For more details, refer to Table 67 below.

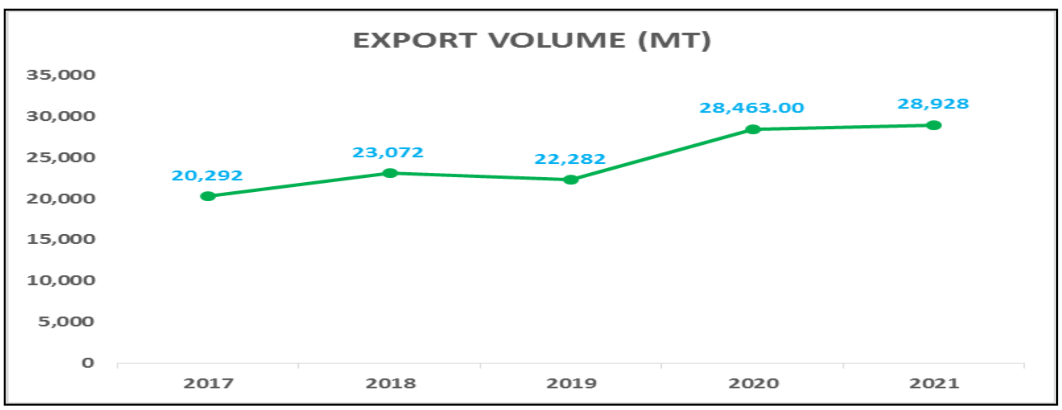
Table 67: Sisal Fibre Exports 2017 - 2021

MONTH	2017		2018		2019		2020		2021	
	Volume (MT)	(KES)`000,000	Volume (MT)	(KES)`000,000	Volume (MT)	(KES)`000,000	Volume (MT)	(KES)`000,000	Volume (MT)	(KES)`000,000
January	1,797	330.47	2,066.80	325.83	1677.4	279.9	2716.1	438.58	2,745.50	475.26
February	1,911	353.93	1,582.40	270.99	2500.7	394.19	2664.2	415.99	2,194.40	382.51
March	1,683	298.09	1,772.80	299.08	1223.4	190.61	2467.6	405.07	2,747.70	479.69
April	1,409	254.47	2,444.00	402.06	1934.6	343.64	1156.1	194.82	2,441.00	419.12
May	2,569	438.18	1,597.30	261.91	2023.1	316.4	2139.4	351.39	2,389.60	416.67
June	1,882	323.34	1,924.00	312.01	1929.8	304.09	2391.1	400.56	2,304.20	388.27
July	1,967	331.19	1,907.40	310.81	2034	331.83	2816	452.92	1,780.20	317.62
August	1,610	293.04	2,211.50	366.02	1767	294.19	2123.45	346.21	2,944.10	525.7
September	1,552	258.73	2,012.20	328.98	1710.2	274.71	2677.7	438.55	2,202.50	407.28
October	1,431	237.82	1,809.80	299.92	2163.4	354.76	2217.2	370.77	2,468.50	447.89
November	1,436	259.34	2,022.60	324.2	2081.6	339.92	2752.45	445.25	2,326.30	422.9
December	1,045	179.22	1,721.50	292.53	1236.5	193.97	2342	410.84	2,383.60	438.07
TOTALS	**20,292.0**	**3,557.82**	**23,072.30**	**3,794.34**	**22,281.70**	**3,618.21**	**28,463.30**	**4,670.95**	**28,927.60**	**5,120.99**

Source: AFA Fibre Crops Directorate

The trend in sisal fibre export over the past five years is presented in the figure 5 below;

Figure 5: Sisal Fibre Exports 2017 - 2021



Source: AFA Fibre Crops Directorate

5.2.4 Sisal Exports by Destinations 2021

There were a total of 36 export destinations worldwide during the year under review, similar to the previous period. The top country in export destination was Nigeria (7,871 tons). For more details, refer to Table 68 below.

Table 68: Sisal Exports by Destination 2021

Destination	Volume (MT)	Total value in US $	Total value (KES)	% Market Share
Nigeria	7,871	12,524,139	1,377,141,354	0.272
Saudi Arabia	2,983	5,362,035	574,991,364	0.103
Ghana	2,960	3,903,900	428,407,304	0.102
China	2,750	4,284,215	468,115,626	0.095
Morocco	2,403	4,102,351	451,121,714	0.083
Spain	2,184	3,493,907	383,405,336	0.076
Egypt	1,408	2,317,961	253,595,681	0.049
Philippines	1,193	1,957,868	214,148,069	0.041
Libya	651	1,087,975	118,115,050	0.023
Senegal	563	983,768	107,642,169	0.019
Belgium	528	1,019,280	111,770,697	0.018
Ivory Coast	513	747,578	81,881,587	0.018
Mauritania	471	783,640	86,244,501	0.016
Togo	455	741,090	81,305,282	0.016
India	392	680,120	74,387,952	0.014
Guinea	219	381,030	41,666,096	0.008
Benin	218	411,858	45,276,347	0.008
Syria	197	314,685	34,617,746	0.007
Indonesia	168	276,325	30,146,139	0.006
Gambia	112	225,000	24,498,594	0.004
UAE	112	171,400	18,765,979	0.004
Iraq	106	183,050	19,869,292	0.004
Japan	88	158,000	17,244,023	0.003
Germany	77	150,450	16,420,691	0.003
Mexico	50	93,875	10,058,021	0.002
Israel	41	69,130	7,615,432	0.001
Oman	28	47,700	5,302,332	0.001
Sri Lanka	28	56,700	6,263,850	0.001

Destination	Volume (MT)	Total value in US $	Total value (KES)	% Market Share
Burkina Faso	28	50,400	5,458,320	0.001
Jordan	28	51,800	5,597,140	0.001
Chad	28	50,400	5,458,320	0.001
Yemen	28	49,200	5,313,591	0.001
Turkey	14	21,000	2,265,887	0.001
Italy	14	25,550	2,816,737	0.001
Australia	13	23,750	2,657,974	0.000
Slovenia	10	12,750	1,405,612	0.000
TOTALS	**28,928**	**46,813,878**	**5,120,991,809**	**1**

Source: AFA Fibre Crops Directorate

5.2.5 Trend in sisal export by value (KES Billion) from 2017-2021

The value of exports for sisal has kept rising due to the favorable prices of the commodity in the export market as demand over time has continued growing. The value of exports was the highest as it hit the KES. 5 billion mark during the period under review as shown in Figure 6 below.

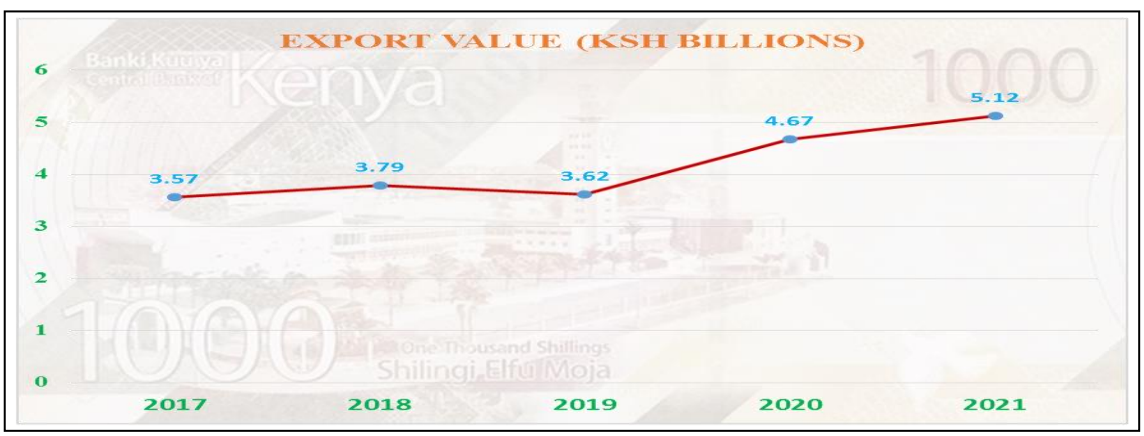


Figure 6: Sisal Exports by Value 2017-2021

Source: AFA Fibre Crops Directorate

Chapter Six

6 FOOD CROPS SUB SECTOR

6.1 Introduction

The food crops subsector was heavily influenced by near-average to below-average long rains in most parts of the country. The month of March 2021 received low rainfall across the country. Several parts of the country received slightly less than average rainfall in April and May 2021. The short rains arrived late in several parts of the country, with the exception of the Highlands west of the Rift Valley, the Lake Victoria Basin, and parts of the Highlands east of the Rift Valley, where the onset was as forecasted.

The short rains were cumulatively below-average, resulting in a harvest that was significantly below-average. Crop production in the ASAL Counties was severely impacted. Crop failure was reported in Kilifi, Kwale, Taita Taveta, Kitui, and Tharaka Nithi, where maize production was (1 – 7) per cent of the five-year average. Following the short rains, most households in marginal agricultural areas had low food stocks. These are the consequences of three consecutive below-average rainy seasons, which have resulted in poor crop performance in these areas.

Maize is the most common food crop grown throughout the country, with beans, green grams, and cowpeas ranking second in semi-arid counties. However, the poorly distributed rains during the long rains season had a negative impact on the achieved production in most areas of the country, resulting in crop failure in some counties. In areas where the crop reached maturity, insufficient rains reduced expected yields for most crops. Drought-tolerant crops performed poorly in marginal agricultural areas due to poor rainfall performance in both seasons.

6.2 Maize

6.2.1 Agriculture Performance

The area under production dropped from 2.171 million Ha in 2020 to 2.168 million Ha in 2021, a marginal decrease. Maize is the country's most important staple food crop, and it contributes significantly to food security. Due to unfavorable weather, especially in the ASALs, national maize production fell by 2% in 2021, from 3.8 million tons in 2020 to 3.3 million tons in 2021. Rainfall began late in both seasons and distribution was poor throughout the country, particularly in the months of October to December.

However, maize average yields for 90 Kg bag per Ha decreased from 19.42 to 17 in 2021 due to moisture stress during critical periods of flowering and grain filling. The season for the long rains was generally late for all crops compared to the normal due to the late onset.

6.2.2 Market Performance

In 2021, the quantity of maize imported into the country increased to 474,000 tons in 2021 from 367,000 tons imported in 2020 to cover the deficits due to the depressed production. The exports recorded in 2021 was 4,000 tons compared to 0.012 tons in 2020.

The average farm gate price per 90 kg bag decreased from KES 2,798 in 2020 to KES 2,600 in 2021. Similarly, the wholesale price per 90 kg bag decreased from KES 2,885 in 2020 to KES 2,724 in 2021.The prices were stable throughout the year under review.

The value of locally produced maize in 2021 was KES 105 billion compared to KES 126.3 billion of 2020.The value of imported maize is estimated at KES 8.9 billion in 2020 compared to KES 12.7 billion of 2021. For more details refer to Table 69 below.

Table 69: Maize Production and Market performance 2017-2021

Year	2017	2018	2019	2020	2021
Area (Ha)	2,092,459	2,189,113.60	2,196,136	2,171,695	2,168,603
Production					
90 kg bag (dry maize)	39,608,589	44,601,416	44,004,283	42,168,559	36,826,994
MT (dry maize)	3,564,773	4,014,127	3,960,385	3,795,170	3,314,430
Est. 115 kg bags (green maize)	2,772,601	3,453,247	3,099,432	2,970,133	2,593,902
Tons (green maize)	249,534	310,792	356,434.70	341,565	298,299
Yield (90 kg dry/Ha)	18.9	22.3	20.04	19.42	17
Consumption (tons)	2,637,277	3,324,299	3,201,057	3,368,337	3,429,904
Price					
Farm Gate (90 kg bag)	2,615	1,873	2,576	2,798	2,600
Wholesale (90 kg bag)	3,588	2,036	3,068	2,885	2,724
Total Value (billion)	111.3	98.5	121.3	126.3	105
Import (‘000 MT)	1,082	182	188	367	474
Export (‘000 MT)	0	0	0.07	0.012	4

Source: State Department for Crops Development and Agricultural Research (SDCDAR)

6.3 Wheat

6.3.1 Agriculture Performance

Kenya is a net importer of wheat because the area under wheat production has decreased over time due to changes in land use and subdivision of land. Wheat production area increased from 132,231 Ha in 2020 to 134,070 Ha in 2021.

Production fell from 404,695 tons in 2020 to 349,056 tons in 2021 due to unfavorable weather conditions. However, demand for wheat products has risen steadily over the years, resulting in an increase in wheat imports.

6.3.2 Market Performance

To cover production deficits and increased demand, wheat imports increased to 2.1 million tons in 2021, up from 1.8 million tons in 2020. Exports in 2021 were 139,791 tons, up from 155,540 tons in 2020.

The average farm gate price per 90 kg bag increased from KES 2,941 in 2020 to KES 3,168 in 2021. Similarly, due to reduced supply from local production, the wholesale price per 90 kg bag increased from KES 4,031 in 2020 to KES 4,593 in 2021.

The value of locally produced wheat in 2021 was KES 12 billion compared to 13 billion of 2020. Refer to Table 70 for more details.

Table 70: Wheat Production and Market performance 2017-2021

Year	**2017**	**2018**	**2019**	**2020**	**2021**
Area (Ha)	146,804	133,147	139,307	132,231	134,070
Production					
90 kg bag	4,062,678	4,560,667	3,552,440	4,496,611	3,878,405
MT	365,641	410,460	319,720	404,695	349,056
Yield (90 kg/Ha)	28	34	26	34	29
Consumption (tons)	1,854,481	1,975,106	1,988,175	2,001,616	2,038,202
Farm Gate (90 kg bag)	2,887	2,761	2,780	2,941	3,168
Wholesale (90 kg bag)	2,878	3,200	3,863	4,031	4,593
Total Value (billion)	12	11	10	13	12
Import (MT)	2,238,679	1,512,034	1,998,900	1,835,983	2,128,153
Export (MT)	1,648	2,282	2,032	155,540	139,791

Source: State Department for Crops Development and Agricultural Research (SDCDAR)

6.4 Barley

6.4.1 Agriculture Performance

Barley is generally grown for malting in beer companies under contractual arrangements. The crop is grown in Narok, Nakuru, Laikipia, Meru and Samburu counties. Barley production decreased from 34,953 tons in in 2020 to 33,117 tons in 2021 despite an increase of area under production also from 11,051 Ha in 2020 to 13,319 Ha in 2021 due to the poor performance of the season. The average farm gate price per 90 kg bag increased from KES 2,955 in 2020 to KES 3,016 in 2021.

6.4.2 Market Performance

The value of locally produced barley in 2021 was KES 1.2 billion compared to KES 1.15 billion of 2020. In 2021, the quantity of barley imported decreased significantly to 1,600 tons in 2021 from 8,000 tons imported in 2020.However the exports increased in 2021 to 25,214 tons compared to 20,173 tons in 2020, as shown in Table 71 below.

Table 71: Barley Production and Market performance 2017-2021

Year	2017	2018	2019	2020	2021
Area (Ha)	18,101	23,474	13,430	11,051	13,319
Production					
90 kg bag	589,247	869,633	661,522	388,366.00	367,967
MT	53,032	78,267	59,537	34,953	33,117
Yield (90 kg/Ha)	32.5	37	49.3	35.1	27
Consumption (MT)	4,540	4,650	4,756	4,847	4,935
Farm Gate (90 kg bag)	2,766	2,127	2,890	2,955	3,016
Imports (MT)	-	-	110	8000	1600
Export (MT)	-	-	23,791	20,173	25,214
Total Value (billion)	1.63	1.85	1.91	1.15	1.2

Source: State Department for Crops Development and Agricultural Research (SDCDAR)

6.5 Rice

6.5.1 Agriculture Performance

Area under rice decreased from 28,276 Ha in 2020 to 25,548 Ha in 2021 due to flooding and inadequate rains in other rice growing areas.

Rice production decreased by 22% from 130,013 tons in 2020 to 101,649 tons in 2021, attributed to insufficient rainfall and water for irrigation in the national irrigation schemes.

6.5.2 Market Performance

In 2021, the quantity of rice imported increased to 598,271 tons from 587,984 tons imported in 2020. However, the exports decreased in 2021 to 342 tons compared to 402 tons in 2020.

The average farm gate price per 50 kg bag decreased from KES 3,185 in 2020 to KES 2,481 in 2021.The value of locally produced rice in 2021 was KES 5.7 billion compared to 6.1 billion of 2020. Table 72 has more details on rice production and market performance.

Table 72: Rice Production and Market performance 2017-2021

Year	**2017**	**2018**	**2019**	**2020**	**2021**
Area (Ha)	29,880	25,966	23,490	**28,276**	**25,548**
Production					
90 kg bag	1,137,778	1,225,822	1,143,607	1,444,589	9,148,410
MT	102,400	110,324	102,924	130,013	101,649
Yield (90 kg/Ha)	38.1	47.2	48.7	51.1	44.2
Consumption (MT)	694,266	987,553	1,051,164.40	1,071,083	1,090,660
Farm Gate (50 kg bag)	2,825	3,206	3,515	3,185	2,481
Wholesale price (50 kg/bag)	7,000	6,500	6,000	6,000	5,000
Total Value (billion)	5.8	7.07	5.99	6.1	5.7
Import (MT)	625,147	435,390	597,230	587,984	598,271
Export (MT)	360	423	892	402	342

Source: State Department for Crops Development and Agricultural Research (SDCDAR)

6.6 Sorghum

6.6.1 Agriculture performance

The area under crop declined by 10% to 197,403 Ha in 2021 compared to 219,657 Ha in 2020. This decline in area is attributed to poor weather conditions experienced during the year under review. Sorghum production decreased significantly in 2021 by 58% compared to 2020. The production in 2020 was 316,256 tons compared to 131,769 tons in 2021.

6.6.2 Market Performance

In 2021, the quantity of sorghum imported increased to 97,400 tons from 33,200 tons imported in 2020. However, the exports decreased in 2021 to 63,000 tons compared to 77,200 tons in 2020.

The average farm gate price per 90 kg bag increased from KES 2,873 in 2020 to KES 3,223 in 2021. The value of locally produced sorghum in 2021 was KES 4.44 billion compared to 10.1 billion of 2020, as shown in Table 73 below.

Table 73: Sorghum Production and Market performance 2017-2021

Year	**2017**	**2018**	**2019**	**2020**	**2021**
Area (Ha)	205,340.75	228,733	240,200	219,657	197,403
Production					
90 kg bag	1,590,622	2,284,556	3,486,559	3,513,956	1,464,100
MT	143,156	205,610	313,790	316,256	131,769
Yield (90 kg/Ha)	7.7	10	14.7	15.9	7.4
Consumption (MT)	93,190	88,091	142,692	155,776	148,053
Farm Gate (90 kg bag)	2,703	2,714	3,360	2,873	3223
Wholesale (90 kg bag)	4930	4147	4411	4260	4495
Imports (000) MT	113.2	53.8	89.6	33.2	97.4
Exports'000(MT)	33.85	75	57.8	77.2	63.04
Total Value (KES. billion)	4.3	6.2	10.8	10.1	4.44

Source: State Department for Crops Development and Agricultural Research (SDCDAR)

6.7 Millet

6.7.1 Agriculture Performance

The main varieties of millets produced in this country are the pearl millet and finger millet. Pearl millet is mainly grown in Kitui Tharaka Nithi, and Meru in that order, some quantities are grown in Mbeere in Embu, parts of Machakos and Makueni. Finger millet is mainly grown in Baringo, Kisii, Nyamira, Bomet and Busia counties.

The area under millet increased from 118,411 Ha in 2020 to 125,439 Ha in 2021. This is a result of the poor performance of the rains. Millet production decreased from 155,908 tons in 2020 to 62,333 tons in 2021.

6.7.2 Market Performance

The average farm gate price per 90 kg bag increased from KES 5,148 in 2020 to KES 6,850 in 2021. Similarly, the average wholesale price increased to KES 8,210 in 2021 compared to KES 6,656 in 2020. The value of locally produced millet in 2021 was KES 4.2 billion compared to 8.9 billion of 2020.

The quantity of millet imported increased to 10,000 tons in 2021 compared to 4,600 tons imported in 2020. For more details refer to Table 74.

Table 74: Millet Production and Market performance 2017-2021

Year	**2017**	**2018**	**2019**	**2020**	**2021**
Area (Ha)	109,001	115,200	142,185	118,411	125,439
Production					
90 kg bag	808,000	922,822	1,496,811.10	1,732,311	693,000
MT	72,720	83,054	134,713	155,908	62,333
Yield (90 kg/Ha)	7.4	8	10.5	14.6	6.4
Consumption (MT)	51,254.50	46,364	61,833	68,152	64,157
Farm Gate (90 kg bag)	5,816.80	4,334.50	5,460.30	5,148	6,850
Wholesale price (KES/90 kg bag)	7,436	7,102	6,688.30	6,656	8,210
Imports (000) MT	19	7.5	6.9	4.6	10
Value billion (KES)	4.7	4	8.2	8.9	4.2

Source: State Department for Crops Development and Agricultural Research (SDCDAR)

6.8 Beans

6.8.1 Agriculture Performance

Area under beans increased by 13% from 1,147,709 Ha 2020 to 1,171,869 Ha in 2021. Production decreased from 774,366 tons in 2020 to 670,735 tons in 2021. Productivity per unit area also decreased significantly from 7.5 (90kg) /ha in 2020 to 6.4 (90 kg bag) in 2021.

6.8.2 Market Performance

The average farm gate price per 90 kg bag increased from KES 6,030 in 2020 to KES 6,341 in 2021.The average wholesale price increased from KES 7,447 in 2020 to KES 7,936 in 2021 per 90 kg bag. The value of locally produced beans in 2021 was KES 28.2 billion compared to 51.8 billion in 2020.

The quantity of beans imported increased to 138,100 tons in 2021 from 48,100 tons imported in 2020. The value of imported beans is estimated at KES 10.1 billion in 2021 compared to estimated value of KES 4.2 billion in 2020.The value of exported beans in 2021 was KES 525 million compared to KES 414 million in 2020. Table 75 has more details on millet production and market performance.

Table 75: Millet Production and Market performance 2017-2021

Year	**2017**	**2018**	**2019**	**2020**	**2021**
Area (Ha)	1,180,784.10	1,149,985	1,188,678	1,147,709	1,171,869
Production					
90 kg Bag	8,648,177	8,510,856	8,310,456	8,604,067	7,452,610
MT	778,336	765,977	747,941	774,366	670,735
Yield (90 kg/Ha)	7.3	7.4	7.1	7.5	6.4
Consumptions (MT)	750,180	765,006	727,729	741,519	755,072
Price					
Farm gate (KES/90 kg bag)	5,585	4,966	6,210	6,030	6,341
Wholesale (90 kg bag)	7,015	5,810	6,661	7,447	7,936
Imports (000) MT	92.4	76.5	31.1	48.1	138.1
Total Value (billion)KES	48.3	42.3	51.6	51.8	28.2

Source: State Department for Crops Development and Agricultural Research (SDCDAR)

6.9 Cowpeas

6.9.1 Agriculture Performance

The area under crop of cowpeas decreased from 239,131 Ha in 2020 to 235,734 Ha in 2021. Production in 2021 decreased from 264,160 tons achieved in 2020 to 250,060 tons in 2021 while the productivity per unit area decreased from 12.3 (90 kg) bags per hectare in 2020 to 11.8 (90 kg) bags per hectare in 2021, an insignificant change as the crop is drought tolerant and performed fairly well compared to beans in the marginal agricultural areas.

6.9.2 Market Performance

The average farm gate price per 90 kg bag increased from KES 5,269 in 2020 to KES 5,354 in 2021.The average wholesale price increased from KES 7,187 in 2020 to KES 8,427 in 2021 per 90 kg bag. The value of locally produced cowpeas in 2021 was KES 4 billion compared to 15.4 billion in 2020. The quantity of cowpeas imported increased to 136 tons in 2021 from 1.1 tons imported in 2020. Table 76 has more details on Cowpeas production and market performance.

Table 76: Cowpeas Production and Market performance 2017-2021

Year	**2017**	**2018**	**2019**	**2020**	**2021**
Area (Ha)	254,669	258,732	242,274.88	239,131	235,734
Production					
90 kg bag	1,627,300	1,990,078	2,471,045.20	2,935,111	1,655,788
MT	146,457	179,107	222,394	264,160	250,060
Yield (90 kg/Ha)	6.4	7.7	10.2	12.3	11.8
Farm gate (KES /90 kg bag)	4,295	3,354	5,430	5,269	5,354
Wholesale (90 kg bag)	7,653	6,598	6,815	7,187	8,427
Imports – MT	238	0	0.3	1.1	136
Total Value(billion)KES	7	6.7	13.4	15.4	4

Source: State Department for Crops Development and Agricultural Research (SDCDAR)

6.10 Green Grams

6.10.1 Agriculture Performance

The area under crop decreased from 285,071 Ha in 2020 to 272,401 Ha in 2021. Production decreased from 212,052 tons in 2020 to 138,056 tons in 2021, due the poor performance of both the long and short rains which discouraged farmers from putting more acreage under the crop due to the uncertainty of the rains. Productivity decreased from 8.3 (90 kg bags per hectare) in 2020 to 5.6 (90 kg bags per hectare) in 2021.

6.10.2 Market Performance

The average farm gate price per 90 kg bag decreased from KES 7,010 in 2020 to KES 6,512 in 2021.The average wholesale price increased from KES 8,672 in 2020 to KES 9,925 in 2021 per 90 kg bag. The value of locally produced green grams dropped from KES 16.5 billion in 2020 to KES 9.6 billion in 2021.

The quantity of green grams imported decreased to 304 tons in 2021 from 2,156 tons imported in 2020. However, the exports increased in 2021 to 19,230 tons compared to 8,756 tons in 2020.

The value of green grams imported in 2021 is estimated at KES 27.8 million in 2021 compared to estimated value of KES 76.5 million in 2020.The value of exported green grams in 2021 was KES 19.2 million compared to KES 700 million in 2020.The green grams are mainly exported to the Middle East, Pakistan and a few quantities to other countries in the East African region. Refer to Table 77 for more details.

Table 77: Green grams Production and Market performance 2017-2021

Year	2017	2018	2019	2020	2021
Area (Ha)	302,292.40	362,939	305,323.10	285,071	272,401
Production					
90 kg bag	1,654,278	2,295,767	2,065,793.90	2,356,133.30	1,533,308
MT	148,885	206,619	185,921.45	212,052	138,056
Yield (90 kg/Ha)	5.5	6.3	6.8	8.3	5.6
Farm gate (KES. Per 90 kg bag)	5838	4246	9160	7010	6512

Year	2017	2018	2019	2020	2021
Wholesale (90kg bag)	9103	7716	10242.7	8672	9925
Imports '000(MT)	8.966	0.66	14.47	2.16	0.304
Exports '000(MT)	2.164	24.466	0.586	8.756	19.23
Total Value(billion)KES	9.7	9.7	18.9	16.5	9.6

Source: State Department for Crops Development and Agricultural Research (SDCDAR)

6.11 Pigeon Peas

6.11.1 Agriculture Performance

The area under pigeon pea declined from 133,525 Ha in 2020 to 126,601 Ha in 2021. Production decreased from 123,627 tons in 2020 to 104,008 tons in 2021. The yield decreased from 10 (90kg bags per Ha) in 2020 to 9 (90kg bags per Ha in 2021).

6.11.2 Market Performance

The quantity of pigeon peas imported decreased to 573 tons in 2021 from 6,145 tons imported in 2020. However, the exports also decreased in 2021 to 532 tons from 16,648 tons in 2020. The value of locally produced pigeon peas in 2021 was KES 6 billion compared to 7 billion in 2020. Refer to table 78 for more details.

Table 78: Pigeon peas Production and Market performance 2017-2021

Year	2017	2018	2019	2020	2021
Area (Ha)	124,284	108,326	136,388	133,525	126,601
Production					
90 kg bag	966,556	921,589	1,194,989	1,373,637	1,155,649
MT	86,990	82,943	107, 549	123,627	104,008
Yield (90 kg bag /Ha)	8	9	9	10	9
Farm gate (KES Per 90 kg bag)	4,682	4,695	5,718	5,171	5,111
Wholesale (90 kg bag)	7,200	4,500	6,300	5,925	5,878
Imports MT	1,908	1,142	31,222	6,145	573
Exports (MT)	1,349	11,881	6,258	16,648	532
Total value(billion)KES	5	4	7	7	6

Source: State Department for Crops Development and Agricultural Research (SDCDAR)

6.12 Sweet Potato

The Eastern region of Kenya, accounts for about 10% production in Kenya. The crop is mainly grown by small-scale resource-poor farmers, with minimal inputs. The average sweet potato holding in most farms is 0.2 Ha and is often regarded as an insurance crop. However, with the shift to preference for healthy foods as snacks, the crop is being commercialized especially in the environments of major towns which provide a ready market. However significant productions are on subsistence basis.

6.12.1 Agriculture Performance

The area under the crop decreased from 54,007 Ha in 2020 to 53,043 Ha in 2021. Production decreased from 685,687 tons in 2020 to 674,348 tons in 2021. The yield remained constant at 12.7 tons per Ha in 2020 and 2021.

6.12.2 Market Performance

The average farm gate price per 98kg bag dropped from KES 3,212 in 2020 to KES 2,940 in the year under review. The average wholesale price increased from KES 3,655 in 2020 to KES 3,832 in 2021 per 98 kg bag. The total value of locally sweet potatoes reduced significantly from 24.5 billion in 2020 to 12 billion 2021 as shown in Table 79.

Table 79: Sweet potatoes Production and Market performance 2017-2021

Year	**2017**	**2018**	**2019**	**2020**	**2021**
Area (Ha)	70,821	64,301	57,535	54,007	53,043
Production					
MT	667,274	871,010	976,691	685,687	674,348
Yield (MT/Ha)	9.4	13.5	16.9	12.7	12.7
Consumption (MT)	1,034,409	862,370	889,447	906,301	922,866
Farm gate (98 kg bag)	2,644	2,115	3,218	3,212	2,940
Wholesale (98 kg bag)	3,372	2,985	3,478	3,655	3,832
Total Value (billion)KES	18	18.8	32	24.5	12

Source: State Department for Crops Development and Agricultural Research (SDCDAR)

6.13 Cassava

6.13.1 Agriculture Performance

The area under cassava decreased from 61,754 Ha in 2020 to 61,201 Ha in 2021. Cassava production decreased significantly from 898,110 tons in 2020 to 711,890 tons in 2021. Productivity decreased from 14.5 tons/Ha in 2020 to 11.6 tons/Ha in 2021. The decrease in productivity from 2020 was attributed to the unfavorable weather conditions and diversification to other crops.

6.13.2 Market Performance

The average farm gate price per 100 kg bag was KES 3,366 in 2021 compared to KES 3,273 in 2020.The average wholesale price increased from KES 3,483 in 2020 to KES 4,348 in 2021 per 98 kg bag. The total value of cassava decreased from 32 billion in 2020 to 15 billion in 2021. For more details, see Table 80 below.

Table 80: Cassava Production and Market performance 2017-2021

Year	**2017**	**2018**	**2019**	**2020**	**2021**
Area (Ha)	68,432	61,583	59,630	61,754	61,201
Production					
MT	789,828	945,991	845,342	898,110	711,890
Yield (MT/Ha)	11.5	15.4	14.1	14.5	11.6
Consumption (MT)	1,081,004	945,825.60	970305.6	881,108	1,006,763
Farm gate (100 kg bag)	2,519	1,982	2,838	3,273	3,366
Wholesale (98 kg bag)	2,612	2,544	3,237	3,483	4,348
Total Value (billion)KES	**20.3**	**18.94**	**24**	**32**	**15**

Source: State Department for Crops Development and Agricultural Research (SDCDAR)

6.14 Irish Potato

Irish Potato plays an important role in Kenyan agriculture sub sector and is the second most important food crop in Kenya.

6.14.1 Agriculture Performance

The area under crop increased from 176,252 Ha in 2020 to 214,600 Ha in 2021. Production of Irish potatoes increased from 1,859,776 tons in 2020 to 2,107,824 tons in 2021. The increase in production is attributed to promotion of the potato value chain by programs and easy access to certified seeds and higher yielding varieties and opening up of new land. Productivity decreased in 2021 from 10.5 tons/Ha in 2020 to 9.8 tons/Ha in 2021.This is attributed to the poor rainfall performance, unfavorable weather conditions and high costs of farm inputs.

6.14.2 Market Performance

The wholesale price of potatoes decreased from KES 2,453 in 2020 to KES 1,788 in 2021. There was an increase in Irish potato consumption from 1,562,628 tons in 2020 to 1,727,286 tons in 2021. The total value of Irish potatoes increased from 46.1 billion in 2020 to 48 billion in 2021. Refer to Table 81 for more details.

Table 81: Irish potato Production and Market performance 2017-2021

Year	**2017**	**2018**	**2019**	**2020**	**2021**
Area (Ha)	192,341	217,315	212,976	176,252	214,600
Production					
MT	1,492,161	1,870,375	1,978,952	1,859,776	2,107,824
Yield (MT /Ha)	7.6	8.6	9.3	10.5	9.8
Consumption (MT)	1,230,108	1,428,011	1,664,740	1,562,628	1,727,286
Price					
Retail (kg)	29.1	42	31.8	24.8	21
Wholesale (110 kg bag)	2,465	3,115	2,898	2,453	1,788
Total Value (billion)KES	33.5	40.8	62.9	46.1	48

Source: State Department for Crops Development and Agricultural Research (SDCDAR)






Chapter Seven

7 HORTICULTURAL CROPS

7.1 Introduction

Horticulture production has been steadily increasing over the last three years, particularly from fruits and vegetables. However, in 2021, the area under production decreased by 6%, from 453,716 Ha in 2020 to 426,773 Ha. Production decreased by 607,590 tons (7%), while value decreased by KES 2.8 billion, compared to the value achieved in 2020. The biggest drop was in the value of fruits, which fell by KES 5.05 billion. Exotic vegetables, Aromatic vegetables, and Asian vegetables increased in value but this was insufficient to offset the drop in value from fruits. For more details, see Table 82 below.

Table 82: Horticultural Crops Performance 2018-2021

Crops Type	2018			2019			2020			2021			% Of Total Value
	Area (Ha)	Volume (MT)	Value (KES)	Area (Ha)	Volume (MT)	Value (KES)	Area (Ha)	Volume (MT)	Value (KES)	Area (Ha)	Volume (MT)	Value (KES)	
Fruits	187,297	3,493,395	70,530,425,262	205,749	3,894,274	79,103,817,306	224,701	4,409,637	85,680,832,132	204,890	4,069,367	80,625,500,616	**47.1**
Exotic Veg	143,132	2,336,838	54,306,963,193	155,146	3,163,146	61,629,193,570	158,291	3,426,683	71,441,336,562	158,567	3,137,522	72,649,765,188	**42.4**
Aromatics	14,344	208,564	8,067,786,256	11,826	168,927	7,382,656,712	11,330	184,767	7,036,996,008	15,056	218,429	8,322,773,184	**4.9**
African Leafy Vegetables	52,685	289,860	8,150,271,213	98,959	374,178	10,243,245,252	56,136	299,628	8,846,260,610	44,976	277,929	8,282,382,923	**4.8**
Asian Veg	3,417	33,070	1,175,167,155	3,681	32,479	1,304,993,296	3,258	33,926	1,139,368,850	3,284	43,804	1,457,622,800	**0.9**
Total	**400,875**	**6,361,727**	**142,230,613,079**	**475,361**	**7,633,004**	**159,663,906,136**	**453,716**	**8,354,641**	**174,144,794,162**	**426,773**	**7,747,051**	**171,338,044,711**	**100**

Source: AFA-Horticultural Crops Directorate

7.2 Fruits

During the period under review, the area under fruit decreased from 224,701 Ha in 2020 to 204,890 Ha in 2021 a 9 percent drop, while production and value also dropped by 340,270 tons and KES 5.05 billion representing 8 and 6 percent drop respectively compared to 2020. This was attributed to decrease in area especially under avocado and water melons.

The major fruits grown in order of importance per value are; banana 33.44 percent, Avocado 15.37 percent, Mango 15.19 percent, Pineapple 13.27 percent and water melon 7.94 percent as shown in the Table 83 below.

Table 83:Fruits production 2018-2021

Crop	2018			2019			2020			2021			
	Area (Ha)	Volume (MT)	Value (KES)	Area (Ha)	Volume (MT)	Value (KES)	Area (Ha)	Volume (MT)	Value (KES)	Area (Ha)	Volume (MT)	Value (KES)	% Of Total Value
Banana	68,248	1,419,176	22,237,751,288	71,901	1,512,013	24,622,881,364	72,486	1,871,521	29,028,891,206	68,031	1,984,279	26,960,415,395	**33.44**
Avocado	16,501	317,087	5,926,935,678	20,240	420,430	9,003,403,239	27,141	492,724	9,542,321,606	26,561	432,969	12,391,141,588	**15.37**
Mango	50,603	751,240	13,298,247,113	54,982	887,961	15,063,361,464	62,234	793,280	14,968,385,988	56,668	738,321	12,246,214,840	**15.19**
Pineapple	9,777	351,133	10,553,487,660	10,271	364,333	10,986,805,605	9,838	330,331	10,399,234,439	8,384	251,935	10,699,037,557	**13.27**
Water Melon	12,128	264,540	6,558,943,609	15,999	330,936	7,283,389,780	17,528	386,261	8,055,494,170	13,383	275,630	6,398,861,384	**7.94**
Orange	8,332	93,321	2,360,678,031	9,291	78,040	1,907,023,284	12,604	145,445	3,522,833,425	12,109	121,184	2,728,455,503	**3.38**
Pawpaw	7,000	128,338	3,467,812,643	7,969	119,449	4,121,979,701	7,913	118,924	3,141,221,344	5,553	74,770	2,634,688,876	**3.27**
Tree Tomato	1,689	8,762	429,626,768	874	8,266	410,327,944	1,322	21,776	1,864,269,785	1,617	47,615	2,125,335,577	**2.64**
Purple Passion	2,012	26,305	1,484,077,936	2,156	25,140	1,443,618,026	2,574	70,176	1,110,467,700	2,480	25,586	1,556,663,528	**1.93**
Lime	4,839	74,225	2,708,825,280	4,955	74,590	2,380,839,822	2,951	82,110	2,161,375,000	3,063	46,312	975,772,000	**1.21**
Lemons	1,238	10,526	217,244,388	2,043	16,142	376,220,443	1,687	16,741	449,113,722	2,405	22,019	654,993,079	**0.81**
Yellow Pasion	1,116	12,401	414,132,971	1,406	16,886	562,760,578	1,362	13,710	363,343,859	1,207	11,605	394,022,000	**0.49**
Tangerine	1,405	11,220	274,842,319	1,149	11,512	247,693,541	1,307	25,733	568,054,690	1,133	10,655	215,602,225	**0.27**
Others	2,409	25,121	597,819,578	2,513	28,576	693,512,515	3,754	40,905	505,825,198	2,296	26,487	644,297,064	**0.80**
Total	**187,297**	**3,493,395**	**70,530,425,262**	**205,749**	**3,894,274**	**79,103,817,306**	**224,701**	**4,409,637**	**85,680,832,132**	**204,890**	**4,069,367**	**80,625,500,616**	**100**

Source: AFA-Horticultural Crops Directorate

7.2.1 Banana Production

Banana fruit is the leading horticultural crop by value and volume and it is one of the most important fruits grown in Kenya accounting for 16 percent of the total value of domestic horticulture per value and 33.44 percent of all fruits. It is extensively cultivated as a staple food and also as income-generating activity by many local communities. The area under production dropped from 72,486 Ha in 2020 to 68,032 Ha in 2021, a 6.1 percent decrease. The production volume rose from 1,871,521 tons in 2020 to 1,984,282 tons in 2021, a 6.0 percent increase that was attributed to good rains in the main producing areas. The value decreased by 7.1 percent from KES 29.02 billion to KES 26.96 billion in 2021 as a result of depressed farm gate prices in the main growing areas of Meru. The main banana varieties grown in Kenya include the ripening (dessert) cultivars such as Gross Mitchel, Apple, Giant Cavendish, Dwarf Cavendish, and Williams's hybrid, Grand Nain, Vallery, Lacatan and Ugandan Red amongst others. The cooking varieties include Ng'ombe, Ugandan green, Mutahato and GradiShisikame while the multipurpose cultivars are Muraru, Gold finger, Ngo'mbe and Mkono watembo. Banana bacterial wilt, fusarium wilt and nematodes remain a threat to banana production. The leading counties per value were Meru, Murang'a, Kirinyaga, Taita Taveta and Kisii accounting for 32.3, 12.0, 6.9, 5.2 and 4.5 percent of the total value respectively as shown in Table 84.

Table 84: Banana Production by County 2018-2021

County	2018			2019			2020			2021			
	Area (Ha)	Volume (MT)	Value (KES)	Area (Ha)	Volume (MT)	Value (KES)	Area (Ha)	Volume (MT)	Value (KES)	Area (Ha)	Volume (MT)	Value (KES)	% Of Total Value
Meru	10,542	308,095	4,526,124,400	13,031	371,391	5,719,418,697	14,012	484,936	6,843,372,560	14,209	776,678	8,719,668,520	**32.3**
Murang'a	7,214	173,439	2,592,802,800	6,366	156,133	2,420,063,360	7,338	161,859	2,303,439,288	8,626	253,476	3,240,613,773	**12.0**
Kirinyaga	5,485	152,409	1,809,520,000	3,547	99,316	1,489,740,000	4,312	185,133	2,282,732,000	3,859	149,377	1,858,080,000	**6.9**
Taita Taveta	2,972	74,231	1,470,902,200	5,405	142,692	2,211,726,000	4,909	238,750	2,804,625,000	3,195	88,758	1,415,235,000	**5.2**

County	2018			2019			2020			2021			
	Area (Ha)	Volume (MT)	Value (KES)	Area (Ha)	Volume (MT)	Value (KES)	Area (Ha)	Volume (MT)	Value (KES)	Area (Ha)	Volume (MT)	Value (KES)	% Of Total Value
Kisii	3,791	64,158	821,181,326	8,342	178,132	2,133,761,493	6,019	119,662	1,565,162,500	5,332	111,767	1,206,005,400	**4.5**
Nyamira	1,898	37,840	702,360,000	3,332	44,990	858,020,000	3,316	43,550	877,821,132	2,842	40,450	816,724,528	**3.0**
Bungoma	2,829	42,014	566,100,000	3,321	38,188	498,538,276	2,401	64,450	1,009,791,800	2,235	42,132	775,466,000	**2.9**
Tharaka	3,410	66,540	765,040,000	3,419	72,074	1,048,208,000	4,283	54,980	682,495,500	1,564	56,443	755,859,150	**2.8**
Kiambu	4,262	70,194	1,133,123,360	2,451	64,873	720,788,360	2,140	60,921	1,197,137,500	2,189	79,490	729,545,000	**2.7**
Kakamega	2,518	38,380	742,365,440	2,366	17,574	439,559,000	2,518	38,380	742,000,000	2,745	34,587	576,311,948	**2.1**
Homabay	623	8,978	212,850,000	1,377	19,866	434,371,000	1,254	16,700	463,549,240	1,422	19,136	544,264,160	**2.0**
Siaya	1,250	9,560	438,500,000	1,312	10,154	455,850,000	1,446	15,106	463,935,000	1,873	21,006	538,576,360	**2.0**
Lamu	1,207	23,911	712,748,500	3,237	61,356	1,285,800,000	2,001	63,924	1,549,680,000	1,845	19,000	496,000,000	**1.8**
Migori	1,524	33,419	607,088,400	813	27,278	421,612,456	1,613	44,246	614,080,380	1,614	32,280	478,876,750	**1.8**
Kericho	751	10,293	239,449,240	412	12,023	421,256,000	466	12,872	504,960,000	530	14,321	447,990,000	**1.7**
Nyeri	1,531	35,194	433,795,390	1,670	37,967	464,461,856	1,352	37,459	399,277,376	1,333	32,556	410,773,780	**1.5**
Embu	1,801	49,628	466,275,000	1,583	37,992	531,888,000	1,304	44,870	610,700,000	1,121	36,580	386,460,000	**1.4**
Makueni	400	7,143	427,745,000	667	6,112	328,500,035	539	10,631	323,682,786	504	11,005	377,870,000	**1.4**
Others	14,240	213,750	3,569,780,232	9,250	113,902	2,739,318,831	11,264	173,093	3,790,449,143	10,994	165,240	3,186,095,026	**11.8**
Total	**68,248**	**1,419,176**	**22,237,751,288**	**71,901**	**1,512,013**	**24,622,881,364**	**72,486**	**1,871,521**	**29,028,891,206**	**68,032**	**1,984,282**	**26,960,415,395**	**100.0**

Source: AFA-Horticultural Crops Directorate

7.2.2 Avocado Production

Avocado contributed 15 percent of the total value of fruits and percent of the total value of horticulture in 2021. The area was 26,561 Ha in 2021 while production was 432,969 tons. The value on the other hand increased from KES 9.54 billion in 2020 to KES 12.39 billion in 2021, representing an increase in value by 30 percent. The production volume in 2021 decreased, mainly due to depressed rains in the main producing areas and damage from false codling moth and fruit fry while the value increased due to improved farm gate prices as well as improved prices in the international markets. As the global demand for avocados is increasing and the profitability of avocado is much higher than other tropical fruits, more farmers are starting to plant the fruit. The leading county was Murang'a that accounted for 22.2 percent by value of produce followed by, Kisii, Kiambu, Meru, Nakuru, Nyamira, Uasin Gishu and Bomet that contributed 12.5, 10, 9.8, 7.6, 6.8 and 4 percent respectively of the total value.

The major challenges in avocado production are inadequate availability of clean planting material, false codling moth, fruit fly infestations, anthracnose especially on Fuerte variety, harvesting of immature avocados and poor postharvest handling of the fruit. For more details refer to Table 85 below.

Table 85: Avocado production 2018-2021

County	2018			2019			2020			2021			
	Area (Ha)	Volume (MT)	Value (KES)	Area (Ha)	Volume (MT)	Value (KES)	Area (Ha)	Volume (MT)	Value (KES)	Area (Ha)	Volume (MT)	Value (KES)	% of Total Value
Murang'a	4,321	123,555	2,543,873,660	4,882	136,080	2,899,048,369	5,890	137,561	2,923,607,824	6,128	115,774	2,748,223,433	**22.2**
Kisii	1,532	28,830	429,530,000	2,294	73,728	1,194,732,344	2,641	73,102	748,196,800	2,746	67,177	1,543,954,000	**12.5**
Kiambu	1,819	37,964	682,031,000	1,637	49,125	1,204,258,500	1,676	51,584	988,561,000	1,770	33,531	1,237,363,292	**10.0**
Meru	755	8,553	209,966,667	1,208	24,054	462,350,000	2,575	17,499	387,438,292	2,545	29,404	1,208,526,240	**9.8**
Nakuru	371	1,664	42,140,000	483	10,982	234,946,000	1,553	24,501	700,980,163	1,589	21,037	944,977,500	**7.6**
Nyamira	1,482	29,280	309,280,000	1,597	30,270	489,480,000	2,660	31,269	551,640,000	2,768	38,710	837,870,000	**6.8**
Uasin Gishu	230	3,027	61,350,000	253	4,167	152,995,000	511	2,117	105,810,000	834	6,759	490,205,000	**4.0**
Bomet	474	10,590	217,800,000	672	12,897	484,832,000	687	11,566	363,456,000	398	7,803	426,040,000	**3.4**
Nyeri	584	5,784	112,702,064	657	7,404	173,066,717	1,352	34,199	310,593,376	669	9,890	419,978,320	**3.4**
Kirinyaga	367	5,892	147,040,000	718	12,965	320,930,000	709	12,940	348,380,000	687	16,435	371,600,000	**3.0**
Embu	709	14,543	216,525,000	553	8,297	165,940,000	538	18,727	354,673,440	563	16,040	329,800,000	**2.7**
Trans Nzoia	106	1,065	16,667,441	455	3,862	113,000,000	296	1,047	20,940,000	349	5,915	270,750,000	**2.2**

County	2018			2019			2020			2021			
	Area (Ha)	Volume (MT)	Value (KES)	Area (Ha)	Volume (MT)	Value (KES)	Area (Ha)	Volume (MT)	Value (KES)	Area (Ha)	Volume (MT)	Value (KES)	% of Total Value
Nandi	127	2,073	56,581,000	238	2,719	117,282,000	368	7,661	257,755,000	368	7,661	257,755,000	**2.1**
Bungoma	299	6,028	201,320,000	464	7,450	172,800,000	273	7,300	105,200,000	466	8,648	146,687,000	**1.2**
Others	3,325	38,239	680,128,846	4,129	36,430	817,742,309	5,413	61,651	1,375,089,711	4,681	48,184	1,157,411,803	**9.3**
TOTAL	**16,501**	**317,087**	**5,926,935,678**	**20,240**	**420,430**	**9,003,403,239**	**27,141**	**492,724**	**9,542,321,606**	**26,561**	**432,969**	**12,391,141,588**	**100.0**

Source: AFA-Horticultural Crops Directorate

7.2.3 Mango production

In 2021, mango contributed 15 percent of the total value of fruits in Kenya. During the period of review, the area under mangoes decreased from 62,234 Ha in 2020 to 56,668 Ha representing a 9 percent decrease while production dropped by 54,959 tons a 7 percent drop as compared to 793,280 tons in 2020. There was a substantial decrease in value of KES 2.7 billion during the year under review attributed to a decrease in production and average farm gate prices. The leading counties in mango production in 2020 ranked by value were Makueni, Lamu, Kilifi, Meru, Kitui and Tana River which accounted for 34, 13.9, 7.9, 7.7, 4.4 and 4.4 percent of the national value of mangoes as shown in Table 86. Mango fruit fly remains the main challenges in the production of mango in the country. Other challenges are mango weevil, rust and poor-quality planting material.

Table 86: Mango production 2018-2021

County	2018			2019			2020			2021			
	Area (Ha)	Volume (MT)	Value (KES)	Area (Ha)	Volume (MT)	Value (KES)	Area (Ha)	Volume (MT)	Value (KES)	Area (Ha)	Volume (MT)	Value (KES)	% of Total Value 2021
Makueni	12,944	120,888	2,000,800,000	13,268	158,973	2,534,904,335	21,985	159,622	3,033,538,500	20,414	281,398	4,163,470,000	**34.0**
Lamu	5,453	90,855	2,073,325,000	6,056	98,132	2,135,770,000	5,604	165,820	2,921,400,000	6,248	136,576	1,698,640,000	**13.9**

County	2018			2019			2020			2021			
	Area (Ha)	Volume (MT)	Value (KES)	Area (Ha)	Volume (MT)	Value (KES)	Area (Ha)	Volume (MT)	Value (KES)	Area (Ha)	Volume (MT)	Value (KES)	% of Total Value 2021
Kilifi	10,017	147,530	1,858,941,500	7,735	138,089	1,724,634,206	7,589	83,675	1,882,375,000	6,374	50,236	969,259,500	**7.9**
Meru	2,247	22,404	396,663,333	3,132	53,332	568,738,333	3,638	58,974	1,244,075,333	4,417	49,773	937,442,190	**7.7**
Kitui	1,918	25,855	560,265,000	2,646	52,270	1,054,240,000	3,696	53,090	883,990,000	2,701	27,010	539,750,000	**4.4**
Tana River	1,334	22,590	370,000,000	1,840	31,158	491,976,000	1,255	36,526	509,824,000	1,243	19,764	533,520,000	**4.4**
Kwale	2,938	57,085	1,242,075,000	3,725	63,943	1,586,551,000	3,725	63,943	1,293,551,000	2,105	25,254	505,080,000	**4.1**
Machakos	5,500	158,692	2,664,520,000	5,657	147,095	2,295,528,750	2,300	21,655	398,709,250	2,740	24,497	413,876,750	**3.4**
Elgeyo Marakwet	301	2,916	100,400,000	1,127	16,668	341,196,736	1,086	14,630	351,500,430	895	11,716	262,491,150	**2.1**
Siaya	638	11,960	225,507,000	1,117	13,191	344,698,790	1,435	12,028	342,775,000	1,059	10,360	220,525,000	**1.8**
Migori	423	5,637	123,873,800	510	6,898	143,370,000	519	7,544	207,360,450	494	7,211	236,564,820	**1.9**
Baringo	404	4,749	83,650,000	486	5,521	107,030,000	478	6,229	111,570,000	211	3,051	74,975,000	**0.6**
Bungoma	240	1,990	78,654,000	246	2,081	61,227,500	173	5,711	106,095,060	239	3,603	68,080,000	**0.6**
Embu	947	14,733	215,040,000	1,598	29,084	383,168,597	1,540	17,962	262,897,000	1,610	18,159	240,851,000	**2.0**
Tharaka Nithi	452	2,540	43,300,000	1,340	8,110	129,490,000	2,231	13,461	261,110,000	1,274	11,461	275,610,530	**2.3**
Kirinyaga	462	7,793	229,705,000	394	5,677	158,850,000	462	5,610	124,350,000	396	11,452	170,350,000	**1.4**
Murang'a	1,131	14,495	247,957,017	1,097	17,385	275,986,308	959	13,056	198,482,764	945	10,183	165,390,882	**1.4**
Taita Taveta	315	4,350	61,011,000	341	4,890	68,516,000	482	7,822	106,023,000	272	4,236	55,140,000	**0.5**
Garissa	604	6,516	89,529,000	604	7,163	156,479,000	640	7,608	101,610,000	642	7,862	106,500,000	**0.9**
Others	2,335	27,662	633,030,463	2,063	28,301	501,005,909	2,439	38,315	627,149,201	2,390	24,519	608,698,018	**5.0**
Total	**50,603**	**751,240**	**13,298,247,113**	**54,982**	**887,961**	**15,063,361,464**	**62,234**	**793,280**	**14,968,385,988**	**56,668**	**738,321**	**12,246,214,840**	**100.0**

Source: AFA-Horticultural Crops Directorate

7.2.4 Water melon production

In 2021, the area under Melons was 13,383 Ha, a decrease of 4,145 Ha compared to 17,528 Ha recorded in 2020. Production decreased by 29 per cent from 386,261 tons in 2020 to 275,630 tons in 2021.

Melons are grown mainly in arid and semi-arid counties. Irrigation and use of hybrid seeds has also contributed high productivity of this crop. The main production counties are Lamu, Migori, Kajiado, Makueni, Mandera, Taita Taveta, Kitui and Elgeyo Marakwet are the leading counties accounting for 46.7, 13.6, 7.0, 6.0, 3.5, 3.1, 3.1 and 2.7 percent of the national value as shown in Table 87.

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

Table 87: Water melon production 2018-2021

County	2018			2019			2020			2021			
	Area (Ha)	Volume (MT)	Value (KES)	Area (Ha)	Volume (MT)	Value (KES)	Area (Ha)	Volume (MT)	Value (KES)	Area (Ha)	Volume (MT)	Value (KES)	% of Total Value
Lamu	4,656	124,030	2,956,190,000	7,102	223,350	4,465,700,000	8,515	212,875	4,257,500,000	10,030	174,750	3,843,000,000	**46.7**
Migori	320	9,350	223,362,001	394	3,127	91,739,000	2,593	46,262	1,061,196,000	2,419	44,409	1,119,840,000	**13.6**
Kajiado	328	6,770	175,400,740	156	2,956	140,780,000	136	2,566	135,780,000	860	21,198	573,750,000	**7.0**
Makueni	339	6,115	138,140,000	589	5,529	179,000,074	854	18,723	206,796,250	670	20,265	489,660,000	**6.0**
Mandera	200	2,600	104,000,000	200	2,600	104,000,000	351	3,998	202,054,000	420	4,642	284,520,000	**3.5**
Taita Taveta	121	2,322	65,185,000	326	6,540	142,412,000	489	12,934	202,202,500	464	11,929	252,620,000	**3.1**
Kitui	219	5,335	122,280,000	664	19,250	342,300,000	626	11,955	186,200,000	846	12,784	251,057,150	**3.1**
Elgeyo Marakwet	197	3,638	67,838,000	217	3,828	73,838,000	184	4,643	232,601,000	365	8,560	218,729,900	**2.7**
Kisumu	106	2,533	82,250,000	98	2,925	79,800,000	186	4,218	124,246,000	183	5,169	137,542,000	**1.7**
Machakos	1,390	13,925	338,774,000	783	7,273	168,327,500	366	2,539	67,227,500	385	3,881	102,215,000	**1.2**
Tana River	753	21,000	410,560,000	394	3,127	91,739,000	603	12,114	198,118,000	373	7,115	97,670,000	**1.2**
Homabay	322	7,177	170,970,000	431	8,745	180,674,000	246	5,333	108,955,500	225	4,253	90,116,886	**1.1**
Kirinyaga	140	1,860	32,456,000	124	1,786	27,422,000	194	4,862	98,670,000	206	2,969	80,680,000	**1.0**
Meru	228	5,786	161,300,000	77	1,808	60,620,000	225	6,624	158,130,000	159	3,127	80,634,800	**1.0**

County	2018			2019			2020			2021			
	Area (Ha)	Volume (MT)	Value (KES)	Area (Ha)	Volume (MT)	Value (KES)	Area (Ha)	Volume (MT)	Value (KES)	Area (Ha)	Volume (MT)	Value (KES)	% of Total Value
Narok	71	1,960	95,500,000	78	2,060	100,500,000	86	2,580	63,930,000	49	1,470	70,650,000	**0.9**
Tharaka Nithi	63	1,760	53,100,000	111	2,062	59,730,000	99	1,400	33,551,300	118	3,191	69,441,020	**0.8**
Murang'a	89	1,391	27,800,000	206	2,714	66,729,556	110	2,195	59,529,750	181	2,624	51,954,128	**0.6**
Others	2,586	46,988	1,333,837,868	4,049	31,256	908,078,650	1,665	30,441	658,806,370	1,431	17,294	412,780,500	**5.0**
Total	**12,128**	**264,540**	**6,558,943,609**	**15,999**	**330,936**	**7,283,389,780**	**17,528**	**386,261**	**8,055,494,170**	**13,383**	**275,630**	**6,398,861,384**	**100.0**

Source: AFA-Horticultural Crops Directorate

7.3 Exotic Vegetables

In 2021, Exotic vegetables contributed 42.4 percent to the domestic value of horticulture. The area, production and value were 158,567 Ha, 3.1 million tons valued at KES 72.65 billion respectively. The area increased from 158,291 Ha in 2020 to 158,567 Ha a 0.17 percent increase while production decreased from 3.4 million tons in 2020 to 3.1 million tons in 2021. The value rose from KES 71.4 billion in 2020 to KES 72.65 billion in 2021 attributed to improved farm gate prices realized in tomatoes that accounts for 32.5 percent of the exotic vegetables. The leading vegetables per value were Tomatoes, Cabbage, Kales, Garden peas, spinach and French Beans accounting for 32.5, 17.52, 15.27, 13.94 and 5.25 per cent of the total value of exotic vegetables as shown in Table 88. These are the most popular and widely consumed exotic vegetables in the country jointly accounting for 86.48 percent of all exotic vegetables.

Table 88: Exotic Vegetables

Crop	2018			2019			2020			2021			
	Area (Ha)	Volume (MT)	Value (KES)	Area (Ha)	Volume (MT)	Value (KES)	Area (Ha)	Volume (MT)	Value (KES)	Area (Ha)	Volume (MT)	Value (KES)	% of Total Value
Tomato	30,538	601,018	21,515,752,256	29,086	936,787	25,136,419,090	31,486	973,304	20,685,272,770	30,882	686,667	23,611,371,552	**32.50**

Crop	2018			2019			2020			2021			
	Area (Ha)	Volume (MT)	Value (KES)	Area (Ha)	Volume (MT)	Value (KES)	Area (Ha)	Volume (MT)	Value (KES)	Area (Ha)	Volume (MT)	Value (KES)	% of Total Value
Cabbage	22,892	620,523	7,646,157,500	33,473	991,549	10,743,341,479	30,288	978,054	10,504,359,488	31,540	1,098,929	12,727,528,603	**17.52**
Kales	35,034	600,766	9,583,285,962	37,730	654,067	9,604,617,372	37,871	668,666	10,454,660,761	38,037	695,513	11,092,792,066	**15.27**
Garden peas	22,537	86,558	2,958,274,073	22,537	86,558	2,958,274,073	26,354	278,152	12,500,572,509	27,375	248,427	10,128,657,641	**13.94**
Spinach	9,325	172,721	2,947,746,508	9,789	243,336	3,801,401,753	9,349	238,452	3,729,358,253	10,764	156,558	3,815,884,464	**5.25**
French beans	7,942	66,765	3,309,256,570	7,942	66,765	3,309,256,570	8,180	83,530	4,205,300,926	6,935	60,013	3,121,537,794	**4.30**
Runner beans	94	1,386	180,717,500	94	1,386	180,717,500	534	15,628	2,342,220,000	564	16,094	2,365,150,000	**3.26**
Carrots	6,305	99,119	1,717,446,255	6,305	99,119	1,717,446,255	5,454	87,512	2,214,754,579	5,582	97,296	1,808,906,183	**2.49**
Snow peas	2,866	22,786	1,672,493,373	2,866	22,786	1,672,493,373	2,537	25,308	1,708,659,920	2,244	24,581	1,808,672,467	**2.49**
Bell pepper	1,850	14,683	654,975,276	1,850	14,683	654,975,276	2,236	26,462	1,043,497,181	1,391	11,148	576,497,602	**0.79**
Snap peas	830	8,713	403,446,124	830	8,713	403,446,124	1,014	10,021	494,881,000	551	6,638	512,419,039	**0.71**
Baby corns	468	6,803	666,516,010	60	654	17,775,000	819	15,294	691,646,022	800	15,898	389,223,000	**0.54**
Broccoli	920	18,787	362,496,450	468	6,803	666,516,010	380	4,815	236,711,120	297	3,173	236,822,200	**0.33**
Butternuts	60	654	17,775,000	920	18,787	362,496,450	915	14,609	382,769,400	707	9,544	192,815,644	**0.27**
Courgetts	618	4,661	203,033,000	618	4,661	203,033,000	613	3,918	139,326,424	646	3,735	128,206,210	**0.18**
OTHERS	853	10,895	467,591,336	578	6,492	196,984,245	261	2,958	107,346,209	252	3,308	133,280,723	**0.18**
TOTAL	**143,132**	**2,336,838**	**54,306,963,193**	**155,146**	**3,163,146**	**61,629,193,570**	**158,291**	**3,426,683**	**71,441,336,562**	**158,567**	**3,137,522**	**72,649,765,188**	**100**

Source: AFA-Horticultural Crops Directorate

7.3.1 Tomato Production

Tomato is the leading vegetable accounting for 32.5 percent of the value of exotic vegetables and 12 percent of the total value of horticulture grown in Kenya. During the period under review, the area under production decreased from 31,486 Ha in 2020 to 30,882 Ha in 2021, while production decreased from 973,304 tons in 2020 to 686,667 tons in 2021 accounting for 29 percent drop. The value however, increased by 14 percent from KES 20.69 billion in 2020 to KES 23.61

billion in 2021 that was attributed to improved farm gate prices. Pests and diseases remain major challenges in tomato production especially in the central Kenya counties. The leading counties were Kirinyaga, Taita Taveta, Narok, Lamu and Siaya accounting for 13.4, 12.6, 8.0, 6.7 and 5.2 percent of the total value as shown in Table 89.

Table 89: Tomato Production from 2018-2021

County	2018			2019			2020			2021			
	Area (Ha)	Volume (MT)	Value (KES)	Area (Ha)	Volume (MT)	Value (KES)	Area (Ha)	Volume (MT)	Value (KES)	Area (Ha)	Volume (MT)	Value (KES)	% of Total Value
Kirinyaga	2,460	60,587	2,037,800,000	3,515	62,383	2,482,120,000	3,157	64,038	1,793,233,474	2,935	116,341	3,169,070,000	**13.4**
Taita Taveta	2,275	26,560	1,612,200,000	2,932	144,710	1,716,650,000	3,515	71,077	1,620,838,000	3,546	104,028	2,978,125,000	**12.6**
Narok	2,420	54,082	1,886,227,500	1,682	35,169	1,290,490,000	1,701	31,855	1,183,474,200	2,226	39,484	1,879,898,004	**8.0**
Lamu	491	16,242	693,153,000	608	12,210	628,100,000	645	12,390	788,400,000	1,274	31,800	1,588,750,000	**6.7**
Siaya	628	9,523	431,532,500	519	9,237	452,980,000	1,227	13,496	482,480,000	1,741	26,932	1,229,440,000	**5.2**
Murang'a	1,315	9,250	448,946,300	1,262	17,991	816,888,771	1,330	27,543	1,079,443,709	1,392	31,795	1,049,745,741	**4.4**
Kajiado	3,024	71,250	2,379,680,250	2,860	66,086	2,407,180,250	3,033	62,510	1,830,280,000	1,681	32,330	993,900,000	**4.2**
Machakos	4,075	56,225	1,328,475,000	2,294	36,248	1,454,280,500	2,022	21,407	660,365,500	2,641	29,932	918,945,502	**3.9**
Trans Nzoia	441	14,633	518,266,000	747	14,475	601,158,000	762	14,149	716,950,800	785	19,463	872,775,000	**3.7**
Kitui	735	13,588	459,685,000	715	10,443	455,400,000	956	25,085	755,000,650	967	26,900	756,010,500	**3.2**
Meru	498	9,702	316,985,000	532	8,073	387,094,000	549	14,632	453,536,000	626	18,877	663,494,600	**2.8**
Makueni	931	27,675	941,600,000	1,067	19,843	935,750,000	1,273	34,229	1,126,388,240	702	20,710	663,105,820	**2.8**
Bungoma	564	11,129	442,570,000	849	17,134	1,032,290,000	694	19,397	826,427,000	633	16,285	656,125,000	**2.8**
Laikipia	321	10,999	376,500,000	504	10,990	422,420,000	626	20,425	802,874,000	543	14,130	590,200,000	**2.5**
Nakuru	616	17,627	293,080,006	646	10,482	443,170,000	549	19,821	799,690,734	328	10,612	495,050,000	**2.1**
Homabay	535	8,704	261,120,000	540	8,778	291,506,086	716	15,560	810,169,000	551	8,073	476,518,496	**2.0**
Kiambu	769	24,499	1,249,126,000	1,359	49,842	1,023,683,000	874	19,955	738,670,000	771	19,781	336,808,700	**1.4**
Bomet	550	9,849	320,578,000	574	10,137	425,900,000	1,234	28,120	1,124,800,000	292	6,247	251,225,000	**1.1**

County	2018			2019			2020			2021			
	Area (Ha)	Volume (MT)	Value (KES)	Area (Ha)	Volume (MT)	Value (KES)	Area (Ha)	Volume (MT)	Value (KES)	Area (Ha)	Volume (MT)	Value (KES)	% of Total Value
Others	7,890	148,894	5,518,227,700	5,882	392,556	7,869,358,483	6,624	457,616	3,092,251,463	7,248	112,947	4,042,184,189	**17.1**
Total	**30,538**	**601,018**	**21,515,752,256**	**29,086**	**936,787**	**25,136,419,090**	**31,486**	**973,304**	**20,685,272,770**	**30,882**	**686,667**	**23,611,371,552**	**100.0**

Source: AFA-Horticultural Crops Directorate

7.3.2 Cabbage production

During the year under review, the area increased from 30,288 Ha in 2020 to 31,540 Ha in 2021 while production rose from 978,054 tons to 1,098,929 tons the same period. The value of cabbages increased from KES 10.5 billion to KES 12.7 billion in 2021 a 21 percent increase. The increase was attributed to favorable weather conditions in the main production areas. The leading county was Nyandarua that accounted for 40.3 percent of the total value followed by Nakuru, Nyeri, Meru and Narok that accounted for 9.2, 7.9, 7.5 and 6.5 of the national value respectively as shown in Table 90. All cabbages accounted for 17.52 percent of all vegetable value.

Table 90: Cabbage production 2018-2021

County	2018			2019			2020			2021			
	Area (Ha)	Volume (MT)	Value (KES)	Area (Ha)	Volume (MT)	Value (KES)	Area (Ha)	Volume (MT)	Value (KES)	Area (Ha)	Volume (MT)	Value (KES)	% of Total Value
Nyandarua	6,297	171,070	1,288,390,000	14,480	397,200	2,235,750,000	10,245	373,690	1,969,070,000	11,970	527,700	5,123,620,000	**40.3**
Nakuru	1,635	54,944	583,952,006	2,209	76,703	647,132,800	2,207	97,042	981,320,000	2,319	75,132	1,166,678,000	**9.2**
Nyeri	2,000	70,549	976,553,480	1,408	41,620	252,383,800	2,150	78,050	724,615,340	1,707	67,896	1,001,643,110	**7.9**
Meru	2,205	53,646	786,372,000	757	17,586	401,436,000	1,904	64,993	902,370,000	2,388	76,382	950,858,800	**7.5**
Narok	1,810	74,127	842,670,000	2,031	101,240	1,219,111,000	1,952	73,174	1,031,061,000	1,749	58,855	822,662,586	**6.5**
Bomet	679	27,010	279,260,000	1,167	55,580	991,695,810	1,014	38,010	584,970,000	828	39,927	463,810,000	**3.6**
Elgeyo Marakwet	947	25,402	529,326,269	951	25,467	530,356,269	930	23,504	487,405,760	887	24,824	367,134,800	**2.9**
Murang'a	434	5,731	114,887,150	414	16,430	213,292,515	930	23,504	487,405,760	569	32,789	345,078,672	**2.7**

County	2018			2019			2020			2021			
	Area (Ha)	Volume (MT)	Value (KES)	Area (Ha)	Volume (MT)	Value (KES)	Area (Ha)	Volume (MT)	Value (KES)	Area (Ha)	Volume (MT)	Value (KES)	% of Total Value
Kiambu	1,870	33,253	575,042,000	2,348	43,954	476,318,000	2,287	50,668	709,648,000	2,212	28,835	240,962,000	**1.9**
Trans Nzoia	339	7,430	152,011,428	603	11,955	207,946,800	483	12,600	300,425,000	261	8,468	159,710,000	**1.3**
Makueni	416	7,833	245,637,500	1,486	32,123	801,950,000	317	6,407	209,930,000	359	6,980	139,600,000	**1.1**
Bungoma	473	11,565	139,125,000	1,124	55,580	991,695,810	599	15,339	171,210,610	451	12,214	137,300,000	**1.1**
Kisii	287	5,772	80,335,467	691	28,577	557,852,000	857	28,661	666,855,600	308	11,435	136,474,416	**1.1**
Laikipia	206	4,827	93,940,000	406	9,426	184,448,000	421	9,819	196,041,000	335	7,140	121,225,000	**1.0**
Others	3,294	67,364	958,655,200	3,398	78,108	1,031,972,675	3,991	82,593	1,082,031,418	5,198	120,353	1,550,771,219	**12.2**
Total	**22,892**	**620,523**	**7,646,157,500**	**33,473**	**991,549**	**10,743,341,479**	**30,288**	**978,054**	**10,504,359,488**	**31,540**	**1,098,929**	**12,727,528,603**	**100.0**

Source: AFA-Horticultural Crops Directorate

7.3.3 Kales

Kales or "Sukuma wiki" as commonly referred to is produced for the domestic market. It is one of the most popular consumed leafy vegetables in the country, grown in almost all the counties. In 2021, the area under kales production increased by 166 Ha, while production and value increased by 26,847 tons and KES 638.1 million a 4 percent and 6 percent respectively. During the year under review the value of kales accounted for 15.27 percent of all the exotic vegetables by value. For more details, refer to Table 91 below.

Table 91: Kales production 2018-2021

County	2018			2019			2020			2021			
	Area (Ha)	Volume (MT)	Value (KES)	Area (Ha)	Volume (MT)	Value (KES)	Area (Ha)	Volume (MT)	Value (KES)	Area (Ha)	Volume (MT)	Value (KES)	% of Total Value
Kiambu	3,776	111,531	1,112,061,714	4,601	123,855	1,183,654,200	4,356	107,355	1,258,598,000	4,433	99,819	1,086,675,000	**9.8**
Narok	2,089	75,780	1,491,960,000	2,498	73,200	805,410,000	1,441	66,579	709,125,828	1,362	64,725	996,340,604	**9.0**
Nyamira	1,075	38,650	642,050,000	1,108	38,890	681,100,000	898	13,940	204,150,000	1,294	49,280	743,150,000	**6.7**

County	2018			2019			2020			2021			
	Area (Ha)	Volume (MT)	Value (KES)	Area (Ha)	Volume (MT)	Value (KES)	Area (Ha)	Volume (MT)	Value (KES)	Area (Ha)	Volume (MT)	Value (KES)	% of Total Value
Kitui	610	5,811	183,912,500	1,224	24,920	365,051,600	1,394	26,580	553,600,000	1,350	26,980	710,090,000	**6.4**
Murang'a	989	14,835	308,371,060	1,009	17,571	365,244,048	1,101	29,832	565,988,938	1,122	36,239	683,481,858	**6.2**
Nakuru	1,157	24,483	182,545,608	2,682	68,608	765,746,200	1,762	49,059	844,742,000	1,677	47,628	665,515,000	**6.0**
Machakos	4,276	47,079	796,680,000	3,474	24,630	420,019,000	2,140	21,498	521,551,500	3,380	32,128	646,886,500	**5.8**
Kisii	1,720	24,339	333,849,685	1,185	28,755	418,785,005	1,825	24,381	493,508,200	2,549	75,442	605,387,600	**5.5**
Migori	999	6,225	127,227,000	1,086	6,479	148,028,217	3,131	26,575	328,857,912	3,232	26,497	446,670,784	**4.0**
Bungoma	780	8,870	89,750,000	698	7,723	81,861,500	1,020	18,548	373,358,636	1,020	18,548	373,358,636	**3.4**
Homabay	2,881	27,139	697,931,800	1,671	26,640	707,614,811	2,261	21,597	380,678,000	1,196	15,974	371,615,768	**3.4**
Kisumu	902	15,685	199,060,000	561	12,050	302,500,000	486	4,637	138,420,000	950	10,360	355,290,000	**3.2**
Kakamega	2,270	9,257	227,617,000	1,826	17,926	282,361,000	2,270	9,257	228,000,000	1,864	9,041	299,244,125	**2.7**
Makueni	723	12,645	245,550,000	830	10,953	197,975,018	1,175	67,392	814,312,999	580	10,970	246,959,000	**2.2**
Siaya	1,132	11,619	231,994,000	1,102	20,018	314,764,875	1,765	22,868	612,960,600	1,965	9,995	202,300,000	**1.8**
Nyandarua	940	18,480	151,200,000	1,605	23,700	233,000,000	735	12,100	72,800,000	825	16,185	199,664,000	**1.8**
Lamu	264	6,600	105,600,000	301	7,525	180,500,000	355	8,813	178,150,000	725	7,743	189,390,000	**1.7**
Meru	711	13,271	267,518,000	725	12,915	297,298,000	731	15,330	170,305,000	724	15,555	178,133,304	**1.6**
Bomet	987	23,634	357,650,000	1,624	21,425	311,836,000	1,491	18,730	256,880,000	754	7,941	166,020,000	**1.5**
E marakwet	747	10,325	140,834,835	759	10,393	144,334,835	557	7,718	109,141,500	564	9,562	151,147,090	**1.4**
Kirinyaga	371	7,443	101,585,000	489	8,430	145,640,000	458	5,620	56,820,000	456	9,786	99,655,000	**0.9**
Busia	597	4,480	200,637,220	592	4,374	195,890,000	777	8,291	262,775,045	461	2,775	88,670,000	**0.8**
Trans nzoia	458	14,501	160,689,888	688	20,384	463,636,000	745	9,909	143,999,000	351	3,833	81,277,000	**0.7**
Others	4,580	68,084	1,227,010,652	5,392	42,703	592,367,064	4,997	72,056	1,175,937,603	5,203	88,508	1,505,870,797	**13.6**
Total	**35,034**	**600,766**	**9,583,285,962**	**37,730**	**654,067**	**9,604,617,372**	**37,871**	**668,666**	**10,454,660,761**	**38,037**	**695,513**	**11,092,792,066**	**100.0**

Source: AFA-Horticultural Crops Directorate

7.4 Aromatic plants

The area under production increased from 11,330 Ha in 2020 to 15,056 Ha in 2021 while production increased by 33,662 tons. The value increased by KES 1.28 billion from KES 7.03 billion in 2020 to KES 8.32 billion in 2021. The leading crops in this category were bulb onions, spring onions, coriander, garlic and African bird eye chili accounting for 63.0, 11.2, 9.3, 4.6 and 4.4 percent respectively as shown in Table 92.

Table 92: Aromatic Plants Production 2018-2021

Crop	2018			2019			2020			2021			
	Area (Ha)	Volume (MT)	Value (KES)	Area (Ha)	Volume (MT)	Value (KES)	Area (Ha)	Volume (MT)	Value (KES)	Area (Ha)	Volume (MT)	Value (KES)	% of Total Value
Bulb Onions	8,689	137,611	5,342,012,958	6,729	113,582	4,682,167,942	6,793	117,651	5,055,409,526	9,024	129,864	5,242,575,035	**63.0**
Spring Onions	3,645	51,360	759,515,194	2,742	27,568	732,048,635	2,455	43,686	1,113,701,191	2,892	34,354	931,266,302	**11.2**
Coriander	605	6,148	808,171,531	907	13,300	729,003,514	885	8,942	273,765,477	1,123	15,605	775,488,974	**9.3**
Garlic	265	3,181	572,653,675	266	3,162	577,449,600	25	198	8,100,000	207	18,103	383,850,000	**4.6**
African Birds eye chili	396	3,779	203,074,002	354	3,869	247,993,500	607	6,791	337,175,600	339	7,274	368,112,860	**4.4**
Long Cayene	370	3,093	230,774,800	464	4,199	283,067,035	92	1,045	34,820,600	797	6,499	260,648,000	**3.1**
Rosemary	147	1,336	57,781,447	149	1,597	56,570,000	140	1,369	55,638,590	276	3,377	182,091,719	**2.2**
Celery	2	15	730,000	2	16	740,008	4	25	1,400,000	10	380	40,707,728	**0.5**
Bullet Chilli	135	1,439	67,096,300	115	842	41,230,200	92	1,045	34,820,600	136	1,121	38,143,500	**0.5**
Ginger	26	239	7,182,000	39	359	10,880,000	84	1,683	38,192,100	78	925	36,700,000	**0.4**
Chives	36	207	10,294,200	32	200	10,566,520	22	145	8,700,000	114	448	26,070,000	**0.3**
Basil	2	15	1,500,000	3	16	1,600,000	13	149	19,020,000	11	147	19,280,000	**0.2**
Leeks	23	99	4,660,149	22	179	7,089,758	34	356	18,060,224	47	320	17,239,066	**0.2**
Tumeric	3	42	2,340,000	2	38	2,250,000	84	1,683	38,192,100	3	12	600,000	**0.01**
Total	**14,344**	**208,564**	**8,067,786,256**	**11,826**	**168,927**	**7,382,656,712**	**11,330**	**184,767**	**7,036,996,008**	**15,056**	**218,429**	**8,322,773,184**	**100.0**

Source: AFA-Horticultural Crops Directorate

7.5 Indigenous Vegetables (African Leafy Vegetables)

In 2021, the area, volumes and values decreased by 20, 7, and 6 percent respectively. The area under these vegetables was 44,976 ha producing 277,929 tons worth KES 8.28 billion down from 56,136 ha 299,628 tons and KES 8.85 billion realized in 2020. In this category of vegetables, African Nightshade contributed 28.3 percent followed by cowpeas, spider plant, leaf Amaranthus and pumpkin fruits that contributed 26.7, 14.9, 13.0 and 8.2 percent respectively as indicated in Table 93.

Table 93:Indigenous Vegetables Production 2018-2020

Crop	2018			2019			2020			2021			
	Area (Ha)	Volume (MT)	Value (KES)	Area (Ha)	Volume (MT)	Value (KES)	Area (Ha)	Volume (MT)	Value (KES)	Area (Ha)	Volume (MT)	Value (KES)	% of Total Value
African Nightshade	5,849	68,828	2,378,251,829	6,950	69,254	2,397,810,725	5,629	54,097	1,707,984,726	6,250	59,724	2,345,990,267	**28.3**
Cowpea	36,745	119,326	2,495,426,701	79,554	159,075	3,504,117,335	36,438	114,583	3,378,185,703	26,284	100,712	2,209,524,211	**26.7**
Spider Plant	3,788	28,932	1,051,113,259	4,280	35,295	1,229,098,895	3,949	36,445	1,315,530,681	3,541	33,649	1,232,029,685	**14.9**
Leaf Amaranthus	2,425	29,843	960,658,213	3,996	54,813	1,322,286,150	3,237	38,172	831,076,886	4,500	38,877	1,074,513,909	**13.0**
Pumpkin Fruits	1,380	24,267	569,098,694	1,487	31,022	722,892,977	1,755	35,829	813,596,889	1,391	22,587	677,690,153	**8.2**
Jute Mallow	598	3,810	174,929,060	672	5,894	309,079,967	657	3,373	155,029,483	649	6,363	288,858,648	**3.5**
Pumpkin Leaves	716	4,969	150,877,111	903	6,650	147,623,496	870	6,030	153,529,801	1,011	5,813	131,441,440	**1.6**
Grain Amarantha	376	891	52,524,597	453	3,020	178,728,617	511	2,459	127,453,939	424	2,513	117,742,084	**1.4**
Sleder	612	6,792	226,624,830	355	7,107	350,836,860	841	5,605	260,730,596	470	2,148	91,590,755	**1.1**
Vine Spinash	80	977	42,014,000	193	811	33,530,230	217	1,030	29,476,001	226	1,410	46,842,000	**0.6**
Russian Confrey	74	635	21,145,000	75	644	19,460,000	163	1,354	50,321,660	138	3,500	40,095,489	**0.5**
Malabor	42	590	27,607,919	41	593	27,780,000	70	652	23,344,245	92	633	26,064,282	**0.3**
Total	**52,685**	**289,860**	**8,150,271,213**	**98,959**	**374,178**	**10,243,245,252**	**56,136**	**299,628**	**8,846,260,610**	**44,976**	**277,929**	**8,282,382,923**	**100.0**

Source: AFA-Horticultural Crops Directorate

7.6 Asian Vegetables

During the year under review, there was an increase in area from 3,258 Ha in 2020 to 3,284 Ha while volume increased from 33,926 tons in 2020 to 43,804 tons. The value increased from KES 1.139 billion in 2020 to KES 1.458 billion in 2021 mainly due to increased farm gate prices. Most of the vegetables were consumed locally due to self-imposed stringent measures that has hampered the export of the same. For more details, refer to Table 94.

Table 94: Asian Vegetables by Area, Volume and Value 2018-2021

Crop	2018			2019			2020			2021			
	Area (Ha)	Volume (MT)	Value (KES)	Area (Ha)	Volume (MT)	Value (KES)	Area (Ha)	Volume (MT)	Value (KES)	Area (Ha)	Volume (MT)	Value (KES)	% of Total Value
Eggplant	996	11,381	329,311,082	1,585	15,286	523,766,111	1,197	16,526	537,055,934	1,063	17,531	545,067,100	**37.4**
Okra	1,242	9,089	384,473,243	1,445	7,335	310,656,825	1,774	15,105	479,159,416	1,188	14,008	362,154,700	**24.8**
Dudhi	612	6,792	226,624,830	355	7,107	350,836,860	87	1,028	61,645,000	485	6,472	297,590,000	**20.4**
Karella	230	2,535	130,800,000	106	820	59,048,500	72	521	38,453,500	369	3,393	163,802,000	**11.2**
Turia	101	555	16,130,000	102	555	16,130,000	94	509	14,605,000	108	675	19,649,000	**1.3**
Tindori	124	1,588	55,413,000	63	1,217	40,565,000	15	150	4,500,000	57	1,658	66,310,000	**4.5**
Valore	112	1,130	32,415,000	25	159	3,990,000	19	88	3,950,000	14	67	3,050,000	**0.2**
Total	**3,417**	**33,070**	**1,175,167,155**	**3,681**	**32,479**	**1,304,993,296**	**3,258**	**33,926**	**1,139,368,850**	**3,284**	**43,804**	**1,457,622,800**	**100.0**

Source: AFA-Horticultural Crops Directorate

7.7 Horticultural Exports

The total value of Horticultural produce exported rose from KES 150.16 billion in 2020 to KES 157.69 billion in 2021 representing a 5.0 percent increase. This was attributed to increase in export volumes by 91.9 thousand tons (29.3 percent) from 313.69 thousand tons in 2020 to 405.59 thousand tons in 2021. The value of flowers exports increased by

3.1 percent from KES 107.5 billion in 2020 to KES 110.8 billion. Fruits exported value decreased by 0.3 percent from KES 18.43 billion in 2020 to KES 18.38 billion in 2021. During the period under review the value of vegetables exports increased by 17.5 percent from KES 24.23 billion in 2020 to KES 28.46 billion in 2021. In 2021, flower exports accounted for 70 percent of the total export values while vegetables and fruits accounted for 18 and 12 percent of the total value respectively as shown in Table 95.

Table 95: Horticulture Exports 2018 to 2021

CROP	2017		2018		2019		2020		2021		% of Total Value
	Volume (MT)	Value '000 (KES)	Volume (MT)	Value (KES)	Volume (MT)	Value (KES)	Volume (MT)	Value (KES)	Volume (MT)	Value (KES)	
FLOWERS	159,961	82,249	161,227.19	113,165,186,323	173,719.29	104,141,752,588	146,033.54	107,508,570,585	210,135.89	110,849,269,528	**70**
VEGETABLES	87,240	24,065	98,414.27	27,685,191,354	72,733.46	25,387,785,979	62,575.40	24,228,432,839	78,138.85	28,461,515,001	**18**
FRUITS	56,945	9,009	75,552.99	12,831,093,042	81,882.69	13,189,032,129	105,059.55	18,426,943,075	117,321.79	18,382,912,091	**12**
TOTAL	**304,147**	**115,323**	**335,194.46**	**153,681,470,719**	**328,335.45**	**142,718,570,696**	**313,668.50**	**150,163,946,499**	**405,596.54**	**157,693,696,620**	**100**

Source: AFA-Horticultural Crops Directorate – Valued at FOB

7.7.1 Flower export performance in 2021

In 2021, floriculture contributed KES 110.85 billion up from KES 107.51 realized in 2020 which was 3.1 percent increase from what was realized in 2020. The volume increased from 146,033 tons in 2020 to 210,135 tons in 2021 accounting for 44 percent increase. The increase in value was attributed to high unit price for Kenyan flowers especially roses and cuttings. Flowers exports accounted for 70 percent of total horticulture value. The leading flowers per value were roses, cuttings and mixed flowers accounting for 70.5, 19.1 and 7.1 percent of total flower exports as shown in Table 96.

Table 96: Summary of leading Export Flowers per value from 2017-2021

CROP	2017		2018		2019		2020		2021		
	Volume (MT)	**Value (KES)**	**Volume (MT)**	**Value (KES)**	**Volume (MT)**	**Value (KES)**	**Volume (MT)**	**Value (KES)**	**Volume (MT)**	**Value (KES)**	**% of Total Value**
ROSES	132,767.95	57,506,227,038	129,688.50	72,885,329,999	138,208.04	71,839,170,457	109,662	76,162,646,852	152,509.36	78,133,646,561	**70.5**
CUTTINGS	3,113.73	10,887,146,831	2,634.37	16,599,630,173	3,092.15	11,769,636,781	2,878.06	13,985,917,196	30,994.70	21,144,457,708	**19.1**
MIXED FLOWERS	9,846.09	6,340,022,717	14,167.46	14,489,864,245	17,267.38	12,491,349,356	21,448.06	11,014,627,017	19,479.69	7,875,874,491	**7.1**
CARNATION / DIANTHUS	2,146.70	1,090,117,908	1,501.50	1,606,922,475	1,339.27	709,601,026	1,101.33	602,234,330	2,233.87	735,652,482	**0.7**
ALSTROEMERIA	1,970.04	630,441,621	2,190.18	1,038,594,723	2,225.86	1,115,351,432	2,046.66	934,704,656	1,005.64	594,897,400	**0.5**
GYPSOPHILLA / MILLION STARS	2,265.95	1,551,458,270	2,423.88	1,103,781,970	2,398.20	1,467,003,538	1,593.22	947,094,115	794.64	574,050,837	**0.5**
HYPERICUM	1,674.08	933,880,990	2,215.10	889,362,493	2,370.34	1,098,617,349	2,013.10	954,302,241	735.95	395,597,265	**0.4**
Others	6,176.61	3,309,555,798	6,406.17	4,551,700,245	6,818.03	3,651,022,649	5,291.07	2,907,044,178	2,382.01	1,395,092,783	**1.3**
Total	**159,961.19**	**82,248,851,173**	**161,227.19**	**113,165,186,323**	**173,719.29**	**104,141,752,588**	**146,033.54**	**107,508,570,585**	**210,135.89**	**110,849,269,528**	**100.0**

Source: AFA-Horticultural Crops Directorate - Valued at FOB

7.7.2 Vegetable exports

During the period under review vegetable exports volumes increased from 62,575,409 tons in 2020 to 78,138,851 tons in 2021 representing 25 percent increase. The value also increased from KES 24.23 billion 2020 to KES 28.46 billion in 2021 representing a 17.5 percent increase from what was realized in 2020. Mixed vegetables, fine beans, herbs and garden peas were the leading products accounting for 35.8, 14.8, 5.8 and 3.2 percent respectively of total value of vegetable exports. Exports for carrots and capsicum were started in 2021. For more details refer to Table 97 below.

Table 97: Summary of leading Vegetables per value 2017-2021

CROP	2017		2018		2019		2020		2021		
	Volume (MT)	**Value (KES)**	**Volume (MT)**	**Value (KES)**	**Volume (MT)**	**Value (KES)**	**Volume (MT)**	**Value (KES)**	**Volume (MT)**	**Value (KES)**	**% of Total Value**
Mixed Vegetables	30,545.85	11,758,610,439	31,010.07	12,670,136,843	35,710.30	12,564,969,369	35,730.60	14,061,147,576	21,797.93	10,180,438,329	**35.8**

CROP	2017		2018		2019		2020		2021		
	Volume (MT)	Value (KES)	Volume (MT)	Value (KES)	Volume (MT)	Value (KES)	Volume (MT)	Value (KES)	Volume (MT)	Value (KES)	% of Total Value
Fine Beans	20,208.84	5,117,431,712	22,098.50	6,328,868,135	18,416.90	5,651,615,992	14,495.69	4,726,721,606	14,333.93	4,219,386,051	**14.8**
Herbs	1,727.00	1,377,926,492	2,525.73	1,328,004,574	3,548.83	1,919,421,821	3,070.51	1,699,937,146	2,549.77	1,637,410,966	**5.8**
Garden Peas	296.34	112,565,092	22.938	116,892,976	197.13	87,734,917	240.34	101,259,310	2,255.79	903,770,001	**3.2**
Basil	445.40	211,229,114	987.924	1,735,367,721	1,716.75	928,387,145	1,797.07	1,288,418,754	1,081.72	645,030,672	**2.3**
Snap Peas	898.32	302,791,820	687.190	344,300,113	859.51	1,535,765,586	924.85	262,725,466	936.70	392,952,813	**1.4**
Broccoli	672.02	272,603,743	574.602	238,922,230	855.08	309,969,119	830.92	309,754,526	1,069.18	356,695,867	**1.3**
Snow/Mangetout	2,332.65	1,150,056,268	2,154.38	813,483,030	2,296.58	906,994,859	1,910.60	666,969,527	843.38	340,567,725	**1.2**
Capsicum	-	-	-	-	-	-	-	-	1,006.39	301,503,030	**1.1**
Chillies	1,388.46	374,617,575	1,056.62	279,932,412	1,286.41	244,684,534	1,980.39	553,563,058	1,087.21	301,503,030	**1.1**
Bean Processed	26,964.24	2,883,807,927	29,299.81	3,272,807,303	5,577.73	595,482,720	-	-	2,044.47	261,239,006	**0.9**
Baby Corn	35.22	15,601,039	61.68	38,666,645	85.077	51,110,276	112.86	51,191,598	214.67	148,008,576	**0.5**
Aubergines	1,176.12	287,962,343	1,176.37	269,743,906	1,387.22	242,620,823	896.21	130,696,802	738.95	128,111,456	**0.5**
Carrots	-	-	-	-	-	-	-	-	3,444.04	125,860,516	**0.4**
Chives	134.30	61,954,063	158.73	87,902,729	182.59	126,685,689	126.23	77,704,469	94.89	61,226,285	**0.2**
Others	415.45	137,482,802	6,599.68	160,162,737	613.31	222,343,129	459.09	298,343,001	24,232.99	8,441,760,707	**29.7**
Total	**87,240.27**	**24,064,640,429**	**98,414.27**	**27,685,191,354**	**72,733.46**	**25,387,785,979**	**62,575.40**	**24,228,432,839**	**78,138.85**	**28,461,515,001**	**100.0**

Source: AFA-Horticultural Crops Directorate - Valued at FOB

7.7.3 Fruits Exports 2017-2020

During the period under review fruits contributed KES 18.38 billion by value of horticultural exports accounting for 12 percent of horticulture exports. Out of the total value of fruits, Avocado contributed KES 14.64 billion accounting for 79.7 percent of fruits exports. Mango exports was KES 1.7 billion accounting for 9.34 percent of fruits exports, while pineapple contributed KES 1.50 billion accounting for 8.17 percent of the value of fruits exported. For more details refer to Table 98.

Table 98: Summary of Fruits Export per Value from 2017-2021

CROP	2017		2018		2019		2020		2021		% of Total Value
	Volume (MT)	Value (KES)	Volume (MT)	Value (KES)	Volume (MT)	Value (KES)	Volume (MT)	Value (KES)	Volume (MT)	Value (KES)	
Avocado	46,647.63	7,263,421,418	64,477,082	10,839,367,033	59,331.03	10,616,276,977	72,049.20	14,735,103,016	86,980.31	14,646,211,796	**79.7**
Mango	9,306.89	1,427,842,382	9,659,925	1,612,454,056	9,446.61	1,424,695,762	7,114.72	1,059,193,050	10,378.48	1,716,810,718	**9.34**
Pineapple	202.48	11,376,180	494,759	29,887,183	12,298.43	850,913,106	24,491.91	2,132,028,965	18,178.34	1,502,300,646	**8.17**
Raspberries	188.58	140,720,450	264,196	153,960,221	165.30	97,276,960	479.30	297,358,125	264.97	176,406,647	**0.96**
Passion F.	524.27	157,694,455	595,959	179,989,749	596.67	190,128,972	791.26	169,637,879	360.69	115,257,043	**0.63**
Lemon	2.21	214,775	574	281,627	0.81	435,746	37.95	11,796,468	21.70	12,118,339	**0.07**
Apple	6.77	1,207,937	14,671	2,997,600	8.21	1,825,989	4.80	977,576	9.75	2,345,786	**0.01**
Custard	13.39	1,529,557	30,712	6,327,252	22.73	5,352,183	20.38	3,873,861	7.48	1,567,942	**0.01**
Pawpaw	1.59	700,161	8,558	1,331,632	11.46	1,543,668	42.92	8,344,475	4.20	562,125	**0.003**
Others	51.52	4,611,759	6,561	4,496,689	1.41	582,766	27.07	8,629,660	1,115.82	209,331,050	**1.1**
Total	**56,945.36**	**9,009,319,074**	**75,552,997**	**12,831,093,042**	**81,882.69**	**13,189,032,129**	**105,059.55**	**18,426,943,075**	**117,321.79**	**18,382,912,091**	**100.0**

Source: AFA-Horticulture Crops Directorate - Valued at FOB

ANNEXURE

Table 99: Coffee exports destination by value and volume 2020/21

No	Destination	No Bags	Weight(GBE) Kg	Value ($)	Value(KES)	Avg price/bag	%
1	Belgium	148,805	8,928,312.38	58,293,696.08	6,350,867,695.00	391.75	21%
2	USA	102,794	6,167,610.21	37,443,314.71	4,075,519,361.20	364.26	15%
3	Germany	92,455	5,547,320.00	28,132,518.98	3,074,846,412.98	304.28	13%
4	South Korea	67,324	4,039,467.60	22,848,615.95	2,492,747,626.96	339.38	10%
5	Sweden	49,193	2,951,565.00	17,781,824.01	1,940,358,901.23	361.47	7%
6	Japan	29,423	1,765,405.00	12,886,626.11	1,402,598,758.09	437.97	4%
7	Finland	23,875	1,432,486.94	8,803,674.96	964,779,660.89	368.74	3%
8	Australia	23,545	1,412,695.70	9,301,280.36	1,013,172,449.75	395.04	3%
9	Norway	23,508	1,410,501.00	39,579,972.98	1,083,327,494.33	1,683.66	3%
10	Canada	21,005	1,260,270.00	8,102,506.11	883,245,846.74	385.75	3%
11	Denmark	19,744	1,184,660.56	6,606,390.23	719,658,170.67	334.6	3%
12	United Kingdom	11,829	709,725.50	4,542,861.64	494,857,936.99	384.05	2%
13	Netherlands	8,721	523,239.82	2,569,543.38	280,258,257.35	294.65	1%
14	Romania	7,570	454,200.00	17,331,585.91	332,932,603.22	2,289.51	1%
15	India	7,120	427,200.00	1,047,585.82	113,965,072.86	147.13	1%
16	France	5,942	356,495.00	1,391,723.82	151,326,363.54	234.23	1%
17	United Arab Emirates	5,543	332,587.30	948,081.40	102,926,218.48	171.04	1%
18	Jordan	5,420	325,211.40	1,386,559.45	151,512,884.56	255.81	1%
19	Spain	5,286	317,161.00	1,842,148.68	200,979,839.27	348.49	1%
20	China	5,263	315,783.75	2,184,949.38	237,029,283.48	415.15	1%
21	Italy	5,150	309,000.00	698,983.16	76,220,515.13	135.72	1%
22	Taiwan	4,258	255,490.70	1,919,175.25	208,616,656.48	450.7	1%
23	Russian Federation	3,182	190,900.00	1,237,087.72	133,971,155.36	388.82	0%
24	Ireland	3,149	188,940.00	1,232,897.90	134,811,201.49	391.52	0%
25	New Zealand	2,717	163,020.00	951,589.08	103,121,440.79	350.24	0%
26	Syrian Arab Republic	2,560	153,600.00	307,200.00	33,758,714.88	120	0%
27	Iran	2,253	135,200.00	318,600.00	34,853,391.15	141.39	0%
28	Saudi Arabia	1,529	91,739.00	525,129.83	57,488,012.21	343.45	0%
29	Turkey	1,460	87,600.00	379,769.44	41,296,508.39	260.12	0%
30	Somalia	1,142	68,498.86	140,085.00	15,359,157.87	122.7	0%
31	South Africa	903	54,180.00	253,432.97	27,832,632.74	280.66	0%
32	Congo D. Republic	728	43,664.32	207,820.00	22,591,642.33	285.57	0%
33	Greece	683	40,950.00	307,192.18	33,071,853.23	450.1	0%
34	Oman	650	39,012.00	96,625.00	10,535,189.58	148.61	0%
35	Ukraine	506	30,361.00	120,379.82	12,915,418.59	237.9	0%
36	Latvia	474	28,440.00	205,292.25	22,441,528.51	433.11	0%

No	Destination	No Bags	Weight(GBE) Kg	Value ($)	Value(KES)	Avg price/bag	%
37	Malaysia	325	19,470.00	94,519.42	10,307,818.89	291.28	0%
38	Singapore	194	11,622.00	98,285.12	10,598,224.29	507.41	0%
39	Switzerland	176	10,560.00	23,232.00	2,522,653.69	132	0%
40	Thailand	78	4,650.00	32,112.27	3,486,390.64	414.35	0%
41	Kuwait	69	4,140.40	52,849.71	5,757,907.26	765.86	0%
42	Estonia	33	2,000.00	15,600.00	1,683,240.00	468	0%
43	Bangladesh	10	600	2,250.00	242,775.00	225	0%
44	Qatar	5	300	1,650.00	180,298.47	330	0%
45	South Sudan	5	300	2,490.00	272,984.68	498	0%
46	Uganda	5	300	2,490.00	268,553.72	498	0%
47	Bahrain	3	203.49	4,093.00	450,296.12	1,206.84	0%
48	Nigeria	2	120	954.6	103,777.49	477.3	0%
	Grand Total	**696,613**	**41,796,759.93**	**292,257,245.68**	**27,071,670,776.57**	**419.54**	**100%**

Source: AFA-Coffee Directorate

Table 100: Coffee export volumes by destination and weight (Kg)

DESTINATION	2016/17	2017/18	2018/19	2019/20	2020/21
Belgium	5,957,720.00	6,074,113.00	8,986,732.79	7,537,924.60	8,928,312.38
USA	8,849,157.80	6,765,946.80	6,614,118.00	9,165,613.60	6,167,610.21
Germany	8,309,960.00	6,775,017.40	9,993,993.00	8,613,387.00	5,547,320.00
South Korea	2,494,845.60	5,226,660.00	4,317,234.00	4,234,680.00	4,039,467.60
Sweden	3,687,200.00	3,529,429.80	2,869,500.00	2,640,878.00	2,951,565.00
Japan	770,360.00	755,226.51	932,430.00	697,111.50	1,765,405.00
Finland	1,485,600.00	1,384,560.00	1,336,500.00	1,515,619.20	1,432,486.94
Australia	978,841.00	1,516,682.00	1,715,206.00	1,278,500.00	1,412,695.70
Norway	1,117,602.00	1,100,630.00	1,464,440.00	1,325,610.00	1,410,501.00
Canada	811,960.00	935,930.00	903,918.00	638,940.00	1,260,270.00
Denmark	303,694.58	40,680.00	66,013.00	895,337.04	1,184,660.56
United Kingdom	1,173,839.00	1,034,339.00	1,104,126.00	1,132,860.30	709,725.50
Netherlands	627,600.00	804,709.00	396,057.00	887,206.00	523,239.82
Romania	272,400.00	613,200.00	1,073,400.00	494,400.00	454,200.00
India	328,980.00	425,760.00	703,823.00	241,572.00	427,200.00
France	980,450.00	464,820.00	323,680.00	284,212.00	356,495.00
United Arab Emirates	442,000.00	627,240.00	220,712.60	268,048.80	332,587.30
Jordan	245,040.00	504,660.00	492,592.50	454,380.00	325,211.40
Spain	876,120.00	638,220.00	795,600.00	710,477.42	317,161.00
China	86,870.00	146,807.00	201,409.00	477,464.80	315,783.75
Italy	295,900.00	444,652.00	363,600.00	482,910.00	309,000.00
Taiwan	354,014.80	230,348.80	273,293.00	290,261.00	255,490.70

DESTINATION	2016/17	2017/18	2018/19	2019/20	2020/21
Russian Federation	163,200.00	72,900.00	318,900.00	121,483.00	190,900.00
Ireland	77,100.00	286	57,600.00	230,400.00	188,940.00
New Zealand	301,080.00	243,108.00	277,530.00	259,230.00	163,020.00
Syria	717,000.00	523,200.00	540,000.00		153,600.00
Iran	18,000.00	38,800.00	257,200.00	57,420.00	135,200.00
Saudi Arabia	479,220.00	172,140.00	372,100.00	101,900.00	91,739.00
Turkey	98,220.00	79,440.00	126,930.00	115,980.00	87,600.00
Somalia	-	-	43,279.00	67,684.00	68,498.86
South Africa	64,500.00	110,593.00	79,200.00	79,670.68	54,180.00
Congo D. Republic	-	-	-	-	43,664.32
Greece	96,000.00	19,200.00	194,410.00	60,000.00	40,950.00
Oman	19,620.00	59,340.00	18,000.00	-	39,014.28
Ukraine	-	-	-	-	30,361.00
Latvia	-	11,280.00	29,730.00	124,500.00	28,440.00
Malaysia	31,260.00	36,000.00	18,000.00	18,000.00	19,470.00
Singapore	6,000.00	15,000.00	33,120.00	9,301.00	11,622.00
Switzerland	153,600.00	222,000.00	304,542.00	906	10,560.00
Thailand	-	-	-	8	4,650.00
Kuwait	-	-	-	275	4,140.40
Estonia	-	-	3,960.00	-	2,000.00
Bangladesh	-	-	-	-	600
Qatar	-	-	-	100	300
South Sudan	57,600.00	-	-	-	300
Uganda	-	-	-	-	300
Bahrain	-	-	-	-	203.49
Nigeria	16,320.00	-	15,000.00	14,400.00	120
Belize	18,930.00	900	-	-	-
Bulgaria	-	19,200.00	-	19,200.00	-
Chile	96,000.00	-	-	-	-
Croatia	-	230,400.00	-	-	-
Czech Republic	-	1,090.00	-	-	-
Djibouti	-	223,200.00	366,000.00	93,300.00	-
Egypt	-	-	20,700.00	93,450.00	-
Hong Kong	3,720.00	24,840.00	14,940.00	7,050.00	-
Israel	76,800.00	-	57,600.00	-	-
Lebanon	38,400.00	27,747.00	76,200.00	18,001.00	-
Lithuania	-	-	7,200.00	-	-
Madagascar	-	100,800.00	-	-	-
Mexico	-	-	880,200.00	74,400.00	-

DESTINATION	2016/17	2017/18	2018/19	2019/20	2020/21
Morocco	96,000.00	-	-	-	-
Philippines	-	6,000.00	12,000.00	-	-
Poland	-	55,800.00	787,620.00	198,000.00	-
Tunisia	300,000.00	956,720.00	540,000.00	-	-
Vietnam	-	-	-	129,600.00	-
Grand Total	**43,378,724.78**	**43,289,615.31**	**50,600,338.89**	**46,161,651.94**	**41,796,762.21**

Source: AFA-Coffee Directorate

*Data arranged in descending order of volume in 2020/21

Table 101: Coffee export value in KES by destination

Destination	2016/17	2017/18	2018/19	2019/20	2020/21
Belgium	3,276,018,688.90	3,187,675,303.55	4,178,302,430.52	3,709,313,684.95	6,350,867,695.00
USA	5,620,223,213.89	4,237,319,314.80	3,008,287,431.34	4,441,201,980.19	4,075,519,361.20
Germany	4,140,337,013.79	3,698,482,102.61	3,860,260,249.61	3,675,957,586.27	3,074,846,412.98
South Korea	1,308,486,562.90	2,549,099,997.64	1,893,895,783.11	1,938,102,109.89	2,492,747,626.96
Sweden	2,123,585,441.58	2,040,290,060.48	1,433,566,322.49	1,349,232,617.44	1,940,358,901.23
Japan	510,004,097.28	539,884,771.00	598,480,614.63	503,242,863.03	1,402,598,758.09
Norway	752,781,664.84	763,927,277.88	928,363,081.59	904,693,797.33	1,083,327,494.33
Australia	634,790,925.35	966,344,230.62	956,623,777.22	714,103,994.41	1,013,172,449.75
Finland	753,419,024.91	677,236,435.81	508,884,482.34	644,129,679.83	964,779,660.89
Canada	476,296,557.90	576,755,978.87	448,731,528.07	300,399,799.58	883,245,846.74
Denmark	177,179,697.40	35,769,448.68	60,834,140.74	546,579,940.40	719,658,170.67
United Kingdom	820,503,026.62	796,551,893.54	670,110,490.87	609,858,870.76	494,857,936.99
Romania	177,036,565.98	348,999,907.20	403,074,710.70	268,480,807.79	332,932,603.22
Netherlands	385,869,593.84	481,797,188.10	202,897,340.89	463,289,332.36	280,258,257.35
China	69,373,908.42	93,774,668.74	126,504,155.92	274,917,886.86	237,029,283.48
Taiwan	174,427,312.65	177,226,130.19	172,827,914.58	194,258,681.35	208,616,656.48
Spain	429,123,718.67	370,306,931.40	330,432,628.17	261,551,445.02	200,979,839.27
Jordan	106,770,135.82	214,483,646.65	180,458,315.26	150,512,540.73	151,512,884.56
France	288,488,819.60	131,462,049.53	87,946,920.38	89,459,787.52	151,326,363.54
Ireland	48,789,513.06	438,243.35	37,595,048.10	129,348,053.17	134,811,201.49
Russia	34,094,047.60	29,158,024.30	99,817,409.53	87,070,212.07	133,971,155.36
India	54,056,340.42	101,932,684.33	132,839,601.83	48,558,002.46	113,965,072.86
New Zealand	151,142,972.32	137,825,581.95	127,519,395.70	119,286,098.93	103,121,440.79
United Arab Emirates	118,261,317.40	132,276,988.66	65,997,885.83	94,685,071.83	102,926,218.48
Italy	128,588,431.76	142,644,744.10	113,895,580.65	123,264,854.01	76,220,515.13
Saudi Arabia	149,824,876.61	114,096,315.18	110,630,944.29	68,281,430.88	57,488,012.21
Turkey	29,249,494.90	24,181,825.42	35,674,096.83	29,414,381.97	41,296,508.39

Destination	2016/17	2017/18	2018/19	2019/20	2020/21
Iran	7,027,246.26	14,177,784.29	57,695,391.81	19,140,005.87	34,853,391.15
Syria	135,771,638.96	99,801,372.72	105,446,926.08		33,758,714.88
Greece	35,147,553.23	6,333,112.13	57,144,149.21	27,013,068.21	33,071,853.23
South Africa	32,683,915.55	57,725,311.38	39,112,361.97	37,269,152.68	27,832,632.74
Congo	-	-	-	-	22,591,642.33
Latvia	-	9,413,061.48	20,481,641.60	52,692,943.61	22,441,528.51
Somalia	-	-	42,066,158.34	16,878,951.26	15,359,157.87
Ukraine	-	-	-	-	12,915,418.59
Singapore	3,210,634.14	10,849,388.10	13,366,985.18	7,278,597.26	10,598,224.29
Oman	5,344,429.14	15,935,912.59	4,477,861.95		10,535,189.58
Malaysia	10,804,356.37	5,626,638.36	2,569,281.12	2,562,661.08	10,307,818.89
Kuwait	-	-	-	250,145.32	5,757,907.26
Thailand	-	-	-	1,056.27	3,486,390.64
Switzerland	65,712,405.31	118,430,827.94	80,648,699.10	958,134.40	2,522,653.69
Estonia	-	-	2,225,224.94	-	1,683,240.00
Bahrain	-	-	-	-	450,296.12
South Sudan	11,100,601.35	-	-	-	272,984.68
Uganda	-	-	-	-	268,553.72
Bangladesh	-	-	-	-	242,775.00
Qatar	-	-	-	47,874.69	180,298.47
Nigeria	6,957,505.98	-	6,852,303.00	5,246,481.17	103,777.49
Belize	16,549,527.01	711,893.70	-	-	-
Bulgaria		12,379,311.74	-	8,887,138.94	-
Chile	16,999,793.28		-	-	-
Croatia	-	50,567,330.37	-	-	-
Czech Republic	-	778,765.45	-	-	-
Djibouti	-	31,088,457.38	54,847,823.46	9,565,722.45	-
Egypt	-	-	4,910,845.15	14,815,761.89	-
Hong Kong	2,637,613.77	16,119,220.38	9,895,835.83	7,110,648.96	-
Indonesia	-	-	-	-	-
Israel	27,401,563.24	-	25,484,389.63	-	-
Lebanon	8,133,575.16	8,033,688.66	17,677,874.35	1,963,235.59	-
Lithuania	-	-	2,503,283.18	-	-
Madagascar	-	26,167,402.80	-	-	-
Mexico	-	-	116,016,692.53	16,295,202.79	-
Morocco	17,125,434.24	-	-	-	-
Philippines	-	3,637,797.48	3,306,431.04	-	-

Destination	2016/17	2017/18	2018/19	2019/20	2020/21
Poland	-	10,119,313.27	139,704,993.10	32,752,873.57	-
Tunisia	127,235,980.50	240,110,985.03	100,191,155.91	-	-
Vietnam	-	-	-	19,648,522.50	-
Grand Total	**23,468,566,737.90**	**23,307,949,319.83**	**21,681,078,589.67**	**22,019,573,689.54**	**27,071,670,776.57**

Source: AFA-Coffee Directorate

*Data arranged in descending order of value in 2020/21

Table 102: Coffee Area and Production 1962/63-2020/21

No	YEAR	ESTATE		SMALLHOLDER		COUNTRY TOTAL	
		AREA(HA)	PROD(MT)	AREA(HA)	PROD(MT)	AREA(HA)	PROD(MT)
1	1962/63	32,538	24,800	49,121	16,000	81,659	41,400
2	1963/64	32,538	28,405	49,121	15,373	81,669	43,778
3	1964/65	32,423	22,393	51,577	14,774	84,000	37,167
4	1965/66	32,267	25,683	53,097	25,523	85,364	51,296
5	1966/67	31,964	25,231	52,450	27,558	84,414	52,789
6	1967/68	31,188	13,246	54,087	20,515	85,275	33,761
7	1968/69	30,690	22,342	54,984	23,264	85,674	45,606
8	1969/70	29,903	26,521	54,057	26,275	83,960	52,796
9	1970/71	29,900	28,600	53,800	26,302	83,700	54,902
10	1971/72	29,535	29,984	55,555	28,362	85,090	58,346
11	1972/73	29,535	39,956	55,287	34,734	84,222	74,690
12	1973/74	29,129	31,152	55,600	40,864	84,729	72,016
13	1974/75	28,603	29,985	57,786	35,464	86,389	65,449
14	1975/76	28,603	37,675	56,595	36,135	85,198	73,810
15	1976/77	27,821	49,685	56,600	47,660	84,421	97,345
16	1977/78	30,888	33,685	56,600	47,744	87,488	81,429
17	1978/79	29,195	26,809	62,574	46,079	91,769	72,888
18	1979/80	31,232	39,109	71,172	51,900	102,404	91,009
19	1980/81	32,861	34,744	84,710	64,007	117,571	98,751
20	1981/82	33,635	34,392	97,473	52,531	131,108	86,923
21	1982/83	33,605	32,981	100,967	52,469	134,572	85,450
22	1983/84	35,711	54,258	114,235	74,682	149,946	128,941
23	1984/85	35,711	28,922	116,328	67,717	152,039	96,639
24	1985/86	38,627	45,542	117,677	68,385	156,304	113,927
25	1986/87	38,487	36,881	116,056	67,907	154,534	104,288
26	1987/88	36,677	44,506	116,353	84,356	153,030	128,862
27	1988/89	39,579	38,649	116,087	78,340	155,666	116,989
28	1989/90	38,084	34,356	117,459	69,483	115,543	103,839
29	1990/91	38,024	37,520	120,238	41,977	158,262	79,497

No	YEAR	ESTATE		SMALLHOLDER		COUNTRY TOTAL	
		AREA(HA)	PROD(MT)	AREA(HA)	PROD(MT)	AREA(HA)	PROD(MT)
30	1991/92	38,160	32,781	120,563	42,426	158,723	75,207
31	1992/93	38,372	33,037	122,660	39,747	161,032	71,787
32	1993/94	38,372	38,735	122,660	52,264	161,032	90,999
33	1994/95	38,372	40,109	122,660	56,885	162,410	96,994
34	1995/96	39,750	29,737	122,660	38,260	162,470	67,997
35	1996/97	39,750	22,050	122,720	33,584	167,398	55,634
36	1997/98	40,127	28,591	127,271	40,086	167,398	68,677
37	1998/99	40,127	38,585	127,271	62,265	167,398	100,850
38	1999/00	40,127	26,743	127,271	23,800	167,398	50,543
39	2000/01	42,000	26,900	128,000	25,000	170,000	51,900
40	2001/02	42,000	23,073	128,000	28,822	170,000	51,895
41	2002/03	42,000	21,417	128,000	34,026	170,000	55,443
42	2003/04	42,000	18,473	128,000	29,958	170,000	48,431
43	2004/05	42,000	20,745	128,000	24,500	170,000	45,245
44	2005/06	42,000	21,257	128,000	27,046	170,000	48,303
45	2006/07	42,000	25,000	120,720	28,368	162,720	53,368
46	2007/08	40,680	19,740	122,040	22,260	162,720	42,000
47	2008/09	24,521	24,650	84,263	29,370	108,784	54,020
48	2009/10	24,521	19,720	84,263	22,280	108,784	42,000
49	2010/11	24,521	16,690	84,263	19,630	108,784	36,629
50	2011/12	24,606	25,001	85,189	31,256	109,795	49,960
51	2012/13	24,606	13,773	85,189	26,092	109,795	39,865
52	2013/14	24,700	16,805	85,300	32,652	110,000	49,475
53	2014/15	26,067	14,808	87,433	27,230	113,500	42,038
54	2015/16	25,800	15,267	88,200	30,758	114,500	46,121
55	2016/17	25,900	14,151	88,800	24,468	114,700	38,620
56	2017/18	25,155	10,994	90,415	30,381	115,570	41,375
58	2018/19	25,349	14,103	90,844	30,881	116,193	44,989
59	2019/20	26,049	10,972	93,626	25,901	119,675	36,873
60	2020/21	25,026	11,671	83,173	22,840	108,199	34,512

Source: AFA-Coffee Directorate

Table 103: Coffee Auction Price in Us Dollars Per Bag For All Grades 2016/17 To 2020/21

Grade	2020/21	2019/20	2018/19	2017/18	2016/17
AA	339.63	311.31	255.07	345.52	333.75
AB	316.01	219.21	182.4	247.17	281.24
C	269.26	156.67	112.9	171.48	227.08
E	269.6	190.71	279.2	252.52	276.29
PB	302.34	207.55	153.72	219.26	261.37
T	116.13	90.06	68.48	84.04	111.72
TT	232.62	147.5	104.38	155.61	207.31
HE	131.18	102.74	72.08	87.49	140.62
SB	64.5	38.17	21.46	28.84	46.41
UG	130.01	90.99	61.04	65.23	130.73
UG1	179.63	107.27	77.12	95.99	161.75
UG2	109.47	74.19	50.49	69.15	101.59
UG3	65.34	56.98	34.33	47.17	67.25
MH	102.9	86.05	70.51	87.1	102.89
ML	71.58	54.25	38.59	55.84	70.28
ALL GRADES	**281.07**	**189.06**	**153.86**	**203.53**	**233.5**

Source: AFA-Coffee Directorate

Table 104: Area under Cotton, Seed Cotton Production and Marketing

YEAR	Area (Ha)	Seed cotton Production (MT)	Seed Cotton price (KES/kg)	Bales (Cotton Lint)	Yield (MT/ha)
2005	32357	19414	20	23000	0.6
2006	36277	22492	21	51000	0.6
2007	35929	24993	20	45035	0.69
2008	43035	15093	22	27027	0.35
2009	39963	14886	26	28000	0.37
2010	20533	11822	48	21300	0.58
2011	32240	15255	65	27487	0.6
2012	25540	13877	35	21450	0.55
2013	24093	13781	42	24832	0.5
2014	29108	16500	42	30000	0.572
2015	28627	15726	42	28340	0.65
2016	28700	15800	42	28468	0.55
2017	20717	11850	46	21351	0.57
2018	13432	5321	46	10672	0.4
2019	18000	3015	52	5432	0.17
2020	9837	3495	48	6196	0.35
2021	10641	1297	50	2527	0.12

Source: AFA Fibre Crops Directorate

Table 105: Cotton Sub-Sector in Kenya

	Parameter	Current Production (Year 2020)	Potential
1	Number of households growing cotton	30000	200000
2	Area under production (ha)	9987	385000
3	Average area per farmer	1 acre	2-3 acre
4	Average yield tons/ha	0.572	3.5 MT -under irrigation 4 MT -Hybrid seed/BT cotton 2.5 MT-under Rainfed
5	Annual production-seed cotton(tones)	3495	220,000 MT
6	Annual Production for Lint (No. of bales (185 kg lint)	6196	400,000 bales (74,000 tons)
7	Seed cotton Value (KES) (52/50 per Kg)	177 million	11 billion
8	Value of lint (KES) (@ KES 180/- per Kg)	206 million	13.3 billion
9	Average national per capita consumption (The 4 Ginneries)	41,200 bales	140,000 bales (25,900MT)

	Parameter	Current Production (Year 2020)	Potential
		(7,600MT)	
10	Farmers	40000	200000
11	Types Grown in Kenya	Conventional (Hart 89, KSA 81), BT Cotton, Hybrid	Hart 89, KSA 81, BT Cotton, Hybrid, short early maturing
12	Employment	200000	10 million

Source: AFA Fibre Crops Directorate

Table 106: Sisal Fibre Grades

Grade	Description
No. 1	Length from 3ft. upwards, average 3ft. 6in. Free of defective decortication, properly brushed free of tow, tousled and bunchy ends, knots and harshness. Color creamy-white to cream.
No. 2	Length from 2ft. 6in. upwards. Free of defective decortication, properly brushed, free of tow, tousled or bunchy ends, knots and harshness. Color creamy-white to cream.
No. 3	Length from 2ft. upwards. Brushed fibre with minor defects in cleaning permissible, but must be free of tow, knots, barky or undecorticated fibre. Color may vary from creamy-white to yellowish, but a higher proportion of spotted or discolored fibre is permissible.
3L (3 Long)	Length from 3ft. upwards. Brushed fibre with minor defects in cleaning permissible, but it must be free of tow, knots, barky or undecorticated fibre. Color may vary from creamy-white to yellowish but a higher proportion of spotted or discolored fibre is permissible.
UG (Under grade)	Fibre that does not conform to the above grades as regards color, cleaning and length. Defects in cleaning, some imperfectly decorticated fibre or barky runners allowed but must be free from undecorticated leaf and knots. Length must not be less than 2ft.
S.C.W.F. (Short clean white fibre)	Length from 18-24in. Free of defective decortication, properly brushed, free of tow, tousled and bunchy ends, knots and harshness. Color creamy-white to cream.
U.H.D.S. (Unwashed hand decorticated sisal)	Shall not be graded in accordance with sisal grading definitions, but shall be sold by sample.
Tow 1	Proper tow from brushing machines. Free of line fibre cuttings, dirt and reasonably free of dust but entirely free of sweepings, knots, barky or undecorticated fibre. Color creamy-white to cream.

Source: AFA Fibre Crops Directorate

Table 107: Sisal Exports in Value and Volume 2017 - 2021

YEAR	EXPORTS VOLUME (MT)	EXPORTS VALUE (KES)
2017	20,293.3	3,557,820,208
2018	23,072.3	3,794,336,317
2019	22,281.7	3,618,218,551
2020	28,463.3	4,670,949,884
2021	28,927.6	5,120,991,809

Source: AFA Fibre Crops Directorate

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