

TREND ANALYSIS OF CASHEWNUT PRODUCTION, PRODUCTIVITY AND AREA OF DIFFERENT STATES IN INDIA

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Abstract:

Cashew is one of the most valuable processed nuts on global commodity markets. It has lot of potentiality to make employment for women and men in the rural areas people and highest revenue earner for developing countries in the world. India is the 2nd largest producer of raw cashew nut in the world in the year 2021-22 with the total production 774 MT. In India cashew is cultivated an area of 1.166,000 ha with production of 774 MT. Maharashtra is leading in cashew production (189.71 MT) with 26% share. The export earnings from cashew kernels and allied products from India during 2021-22 was 51,908 MT valued Rs. 3096.811cr. India earns considerable amount of foreign exchange through cashew export. The present study is to be revealed that the trend analysis of cashew nut production, productivity and area of different states in India such as: Maharashtra, Andhra Pradesh, Odisha, Kerala, Tamil Nadu, Karnataka, Goa, West Bengal and Chhattisgarh in India. The period of study is 10 years has taken into consideration for the present study i.e., from 2012-13 to 2021-22 for measuring the trends on different aspects of different states in India. In the year 2021-22, the total production of cashew nut was 774 metric tons in India. Area under cashew nuts in India increased by from 507,000 hectares during 2021-22. The compound annual growth rate in production was the maximum in Chhattisgarh (9.338%) followed by Tamil Nadu (2.408%) and Odisha (2.072%).

Keywords: Cashew nut, foreign exchange, Production, Exports Kernels. CSNL.

Introduction:

Cashew is often regarded as 'poor man's crop and rich man's food' and is an important cash crop and highly valued nut in the global market. The area under cashew cultivation is the highest in India. Though it is not so in the case of productivity, processing and quality kernels in the global commodity markets have the potential to generate employment and revenue. It has the potential to support of the livelihood for the cashew farmers, processors and also it will empower rural women involved in the processing of cashew process. Cashew industry provides employment opportunities to skilled and unskilled workers and full time and part time employment

opportunities to agricultural labourers more than 15 Lakhs opportunities to and generates foreign exchange through exports of cashew. Cashew sector plays a leading role in social and financial upliftment of the rural masses.

Cashew nut is being grown in major seven states in India namely Maharashtra, Andhra Pradesh, Odish, Karnataka, Kerala, Tamil Nadu and Goa, and along the east coast. It is also being grown to a limited extent in non- traditional Areas such as Chhattisgarh, West Bengal, Gujarat, Jharkhand, Meghalaya, Tripura, Nagaland, Manipur, Assam, Andaman and Nicobar Islands. In India cashew was first introduced in Goa, from where it spread to other parts of the country. Cashew is one of the most important Commercial Crops of India that helps to earn considerable amount of foreign exchange through exports.

The specific objective of the study is to assess the Trend Analysis of Cashewnut Production, Productivity and Area of Different States in India. The study is based on purely secondary data collected from various sources such as: the Cashew Export Promotion Council of India (CEPCI), Directorate of Cashew and Cocoa Development, Directorate of Horticulture, Directorate of Economics and Statistics and Directorate of Agricultural Marketing of the selected states. In the present study the researcher is using the structure of the secondary data that is different levels of production, productivity and trade of respective selected states in India for the period 10 years. The researcher is using the collected data to analysis purpose during the study period from 2012-13 to 2021-22 by using SPSS tools like arithmetic mean and coefficient of Variation, compound growth rates, graphic presentations has also been used to know the concentration of states in terms of area and production under cashew in India.

Material and Methods

Nature and sources of data

The study is based on secondary data collected from different sources for achieving the objectives of the study; Secondary data was collected from various sources like websites, such Books, Journals, Statistical Reports, Newspapers, Magazines, various Publications of the cashew boards, Annual reports and Directorate of Cashewnut and Cocoa Development, Cochin (DCCD) and Cashew Export Promotion Council of India (CEPCI).

Analytical tools

For the purpose of evaluating the objectives of the study, based on the nature and extent of data availability, the following analytical tools will be used for analyzing the data to draw

meaningful results and conclusions. State wise area, Production, Yield, Cashewnuts India has been collected and analyzing by using standard statistical tools like arithmetic mean and coefficient of variation, compound annual growth rate and graphical representations to know the trends in area, production and productivity of cashew in India.

Compound annual growth rate analysis

To study the annual growth rate in quantity and value of exports of cashew products, the compound growth rate was computed using semi-log or exponential model (Kulkarniet,al, 2012).

Co-efficient of variation (CV)

It explanation the fluctuation over the as follows:

CV=

CV= Co-efficient of variation

= standard deviation

= Mean

Results and Discussion

The following graphs are going to explains about the cashew nut production area, production and productivity of different states in India from 2009-10 to 2018-19. The states Includes Maharashtra, Andhra Pradesh, Orissa, Karnataka, Kerala, Goa, Tamil Nadu, West Bengal and Chhattisgarh etc. The data collected from CEPCI, DCCD reports. The area, quantity of Production and also productivity of cashew nut trends, Compound Annual growth rate and standard deviation are calculated and produced the analysis in the following tables.

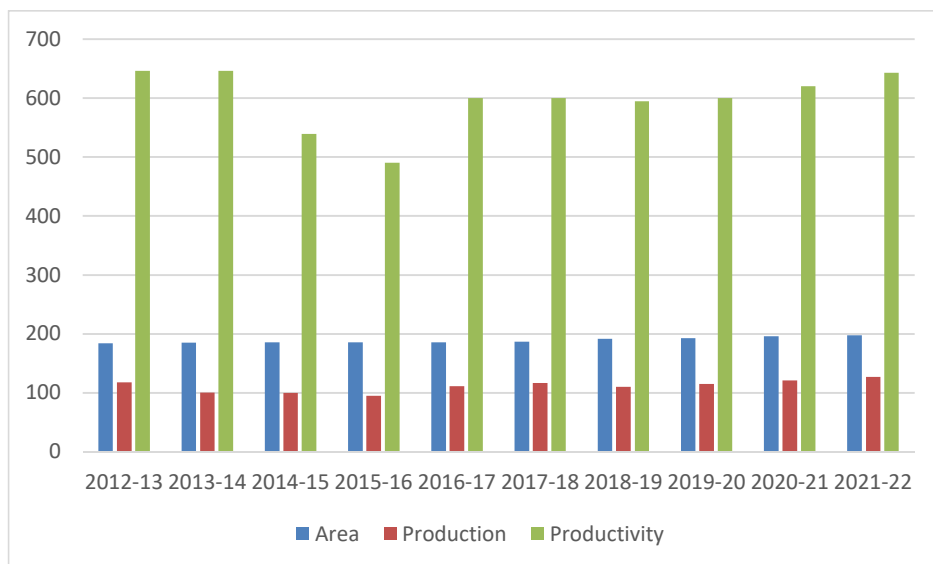
ANDHRAPRADESH

TABLE I
TRENDS IN PRODUCTION AREA, PRODUCTION QUANTITY & PRODUCTIVITY OF CASHEW NUT-
ANDHRAPRADESH FROM 2012-13 TO 2021-22

Year	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	CV	CAGR
Area	183.95	184.95	185.45	185.57	185.57	186.78	191.27	192.4	196.2	197.92	2.543	0.817
Production	118.14	100.42	100	95.5	111.39	116.92	109.9	115.4	121.2	127.22	8.702	0.826
Productivity	646	646	539	490	600	600	595	600	620	643	7.895	-0.052

Source: Cepci Reports & dccd

GRAPH NO I
TRENDS IN PRODUCTION AREA, PRODUCTION QUANTITY & PRODUCTIVITY OF CASHEW NUT-
ANDHRA PRADESH FROM 2012-13 TO 2021-22



The above table shows that the trends of cashew nut production area, production and productivity of Andhra Pradesh. The CAGR of 10 years from cashew nuts area was 0.817, production was 0.826 and productivity was -0.052. The CV were as follows area 2.543, production 8.702 and productivity was 7.895.

KERALA:

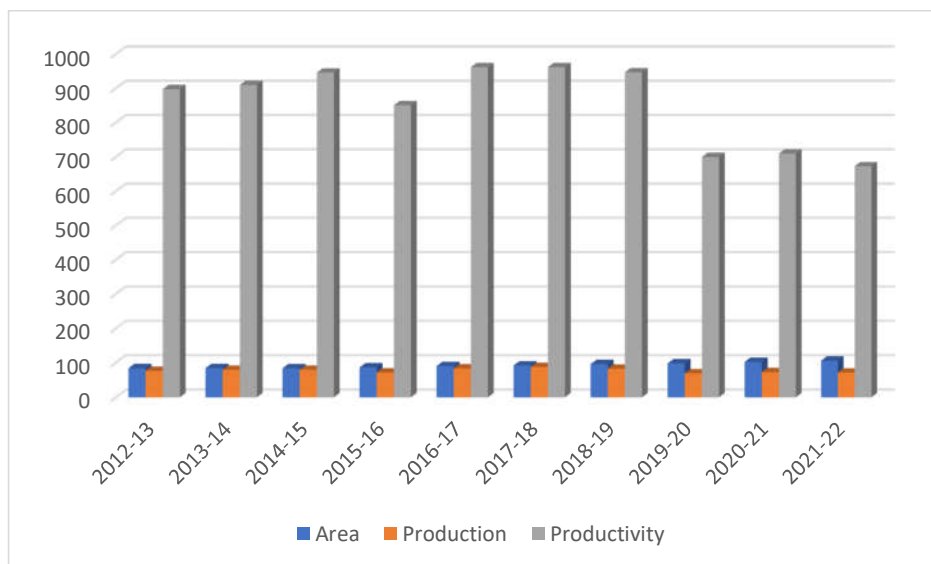
TABLE II
TRENDS IN PRODUCTION AREA, PRODUCTION QUANTITY & PRODUCTIVITY OF CASHEW NUT-KERALA
FROM 2012-13 TO 2021-22

Area : 000 HA., Production :Metric Tons Productivity

Year	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	CV	CAGR
Area	84.88	84.93	84.53	87.01	90.87	92.8	96.65	98.8	103.2	106.52	8.166	2.555
Production	76.96	80.12	80	72	83.98	88.18	82.89	69.6	73.1	71.76	7.513	-0.774
Productivity	898	910	946	851	962	962	947	700	710	673	12.941	-3.154

Source: Cepci Reports & dccc

GRAPH NO II
TRENDS IN PRODUCTION AREA, PRODUCTION QUANTITY & PRODUCTIVITY OF CASHEW NUT- KERALA
FROM 2012-13 TO 2021-22



The above table shows that the trends of cashew nut production area, production and productivity of Kerala. The CAGR of 10 years from cashew nuts area was 2.555, production was -0.774 and productivity was -3.154. The CV were as follows area 8.166, production 7.513 and productivity was 12.945.

KARNATAKA:

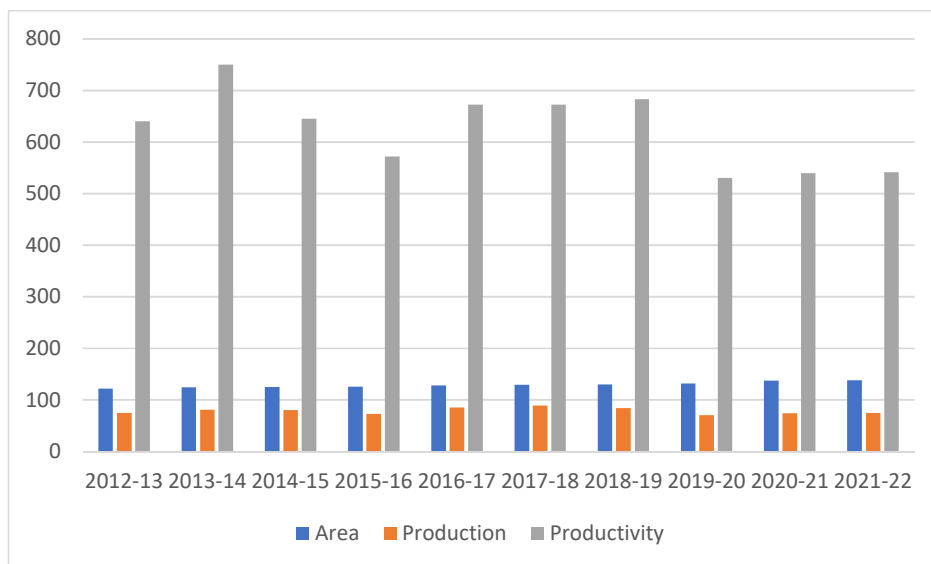
TABLE III
TRENDS IN PRODUCTION AREA, PRODUCTION QUANTITY & PRODUCTIVITY OF CASHEW NUT-
KARNATAKA FROM 2012-13 TO 2021-22

Area : 000 HA., Production :Metric Tons Productivity Kg/Ha

Year	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	CV	CAGR
Area	121.88	124.11	124.71	125.86	127.86	129.07	129.96	132.43	137.4	138	4.011	1.390
Production	74.64	80.61	80.5	73	85.14	89.45	84.08	70.62	74.2	74.86	7.431	0.033
Productivity	640	750	645	572	672	672	683	530	540	542	11.318	-1.830

Source: Cepci Reports & dccc

GRAPH NO III
TRENDS IN PRODUCTION AREA, PRODUCTION QUANTITY & PRODUCTIVITY OF CASHEW NUT-
KARNATAKA FROM 2012-13 TO 2021-22



The above table shows that the trends of cashew nut production area, production and productivity of Karnataka. The CAGR of 10 years from cashew nuts area was 1.390, production was 0.033 and productivity was -1.830. The CV were as follows area 4.011, production 7.431 and productivity was 11.318.

GOA:

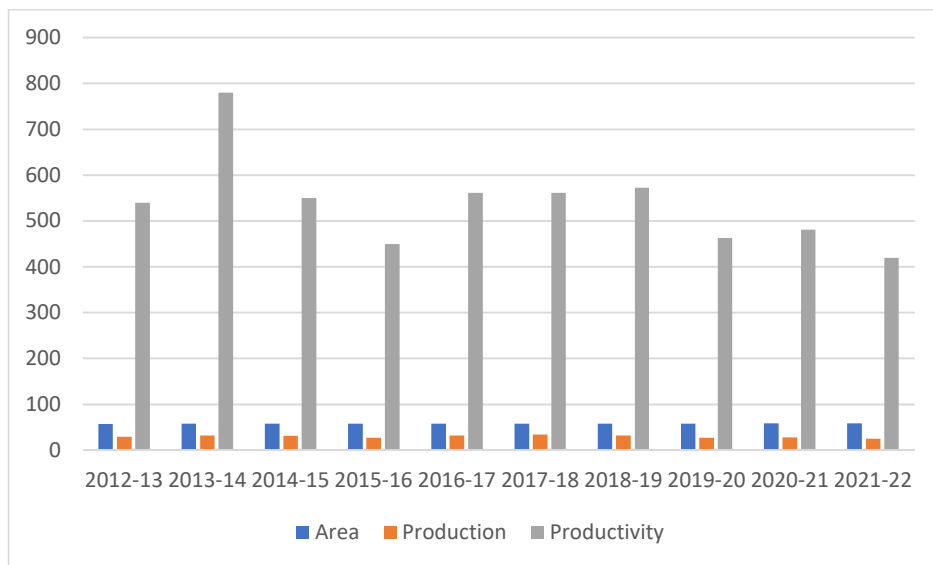
TABLE IV
TRENDS IN PRODUCTION AREA, PRODUCTION QUANTITY & PRODUCTIVITY OF CASHEW NUT-GOA
FROM 2012-13 TO 2021-22

Area : 000 HA., Production :Metric Tons Productivity Kg/Ha

Year	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	CV	CAGR
Area	57.47	57.97	58.17	58.17	58.18	58.18	58.35	58.35	58.99	59.02	0.739	0.296
Production	29.95	32.35	32	28	32.65	34.25	32.2	27.04	28.4	24.82	9.453	-2.066
Productivity	540	780	550	450	561	561	573	463	481	420	17.786	-2.754

Source: Cepci Reports & dccd

GRAPH NO IV
TRENDS IN PRODUCTION AREA, PRODUCTION QUANTITY & PRODUCTIVITY OF CASHEW NUT-GOIA FROM
2012-13 TO 2021-22



The above table shows that the trends of cashew nut production area, production and productivity of Goa. The CAGR of 10 years from cashew nuts area was 0.296, production was -2.066 and productivity was -2.754. The CV were as follows area 0.739, production 9.453 and productivity was 17.786.

MAHARASHTRA:

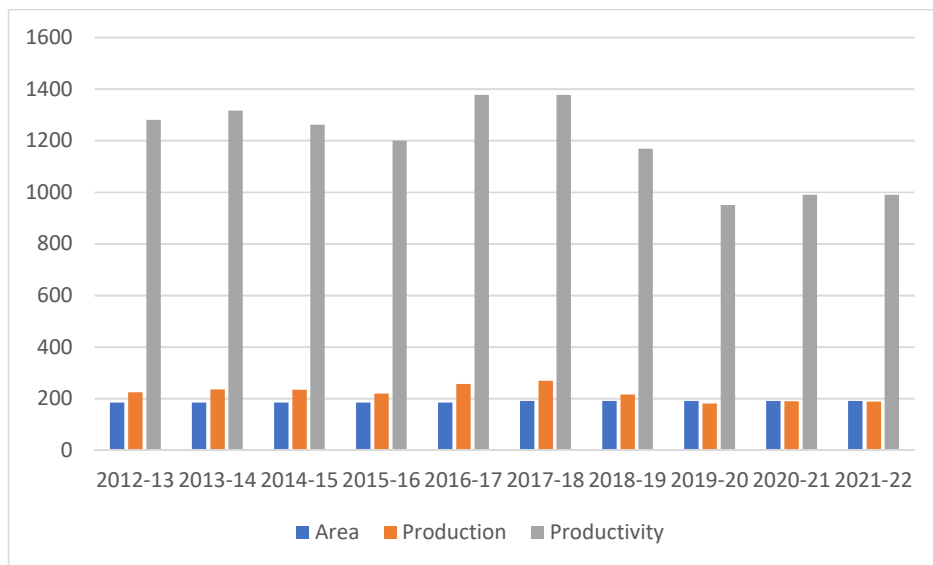
TABLE V
TRENDS IN PRODUCTION AREA, PRODUCTION QUANTITY & PRODUCTIVITY OF CASHEW NUT-
MAHARASHTRA FROM 2012-13 TO 2021-22

Area : 000 HA., Production :Metric Tons Productivity Kg/Ha

Year	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	CV	CAGR
Area	184.2	184.2	186.2	186.2	186.2	191.45	191.45	191.5	191.5	191.45	1.652	0.430
Production	224.64	236.2	235	220	256.61	269.44	215.64	181.1	190.2	189.71	12.423	-1.860
Productivity	1282	1317	1262	1200	1378	1378	1169	950	990	990	12.962	-2.831

Source: Cepci Reports & dccc

GRAPH NO V
TRENDS IN PRODUCTION AREA, PRODUCTION QUANTITY & PRODUCTIVITY OF CASHEW NUT-
MAHARASHTRA FROM 2012-13 TO 2021-22



The above table shows that the trends of cashew nut production area, production and productivity of Maharashtra. The CAGR of 10 years from cashew nuts area was 0.430, production was -1.860 and productivity was -2.831. The CV were as follows area 1.652, production 12.423 and productivity was 12.962.

TAMIL NADU:

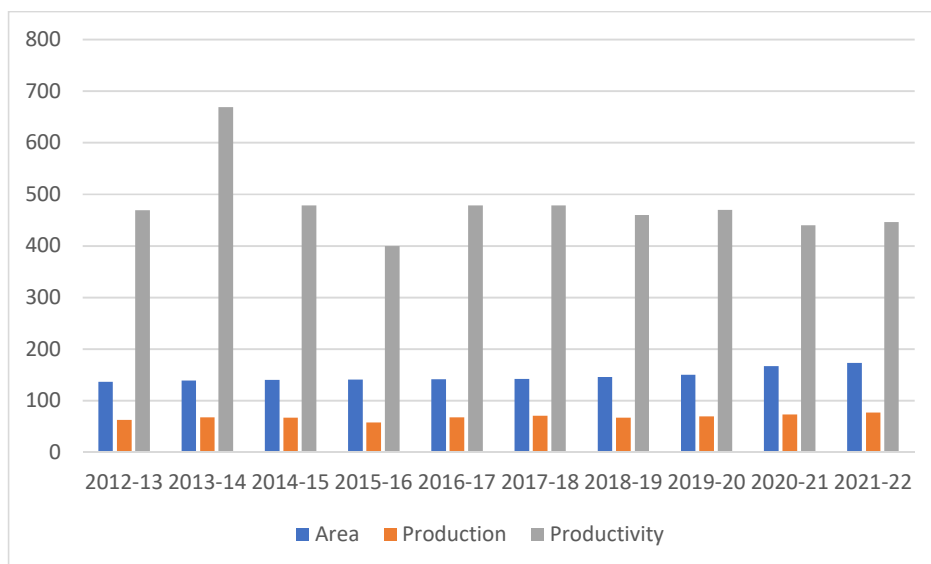
TABLE VI
TRENDS IN PRODUCTION AREA, PRODUCTION QUANTITY & PRODUCTIVITY OF CASHEW NUT-
TAMIL NADU FROM 2012-13 TO 2021-22

Area : 000 HA., Production :Metric Tons Productivity Kg/Ha

Year	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	CV	CAGR
Area	136.42	139.42	140.42	141.33	141.58	142.26	145.95	150.3	167	173.24	7.980	2.690
Production	62.4	67.39	67	58	67.65	71.03	66.77	70.1	73.6	77.3	7.565	2.408
Productivity	469	669	478	400	478	478	460	470	440	446	14.087	-0.557

Source: Cepci Reports & dccc

GRAPH NO VI
TRENDS IN PRODUCTION AREA, PRODUCTION QUANTITY & PRODUCTIVITY OF CASHEW NUT-
TAMIL NADU FROM 2012-13 TO 2021-22



The above table shows that the trends of cashew nut production area, production and productivity of Tamil Nadu. The CAGR of 10 years from cashew nuts area was 2.690, production was 2.408 and productivity was -0.557. The CV were as follows area 7.980, production 7.585 and productivity was 14.087.

ODISH:

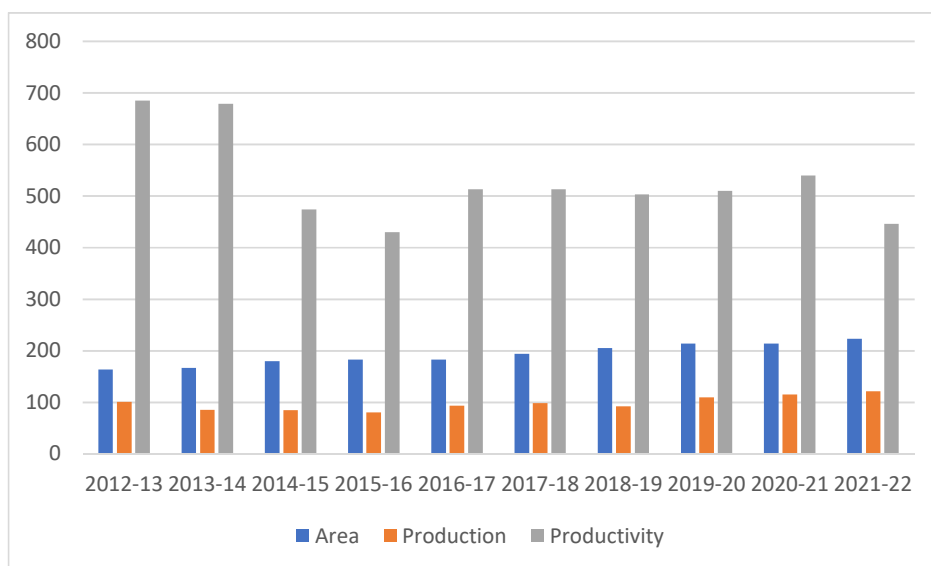
TABLE VII
TRENDS IN PRODUCTION AREA, PRODUCTION QUANTITY & PRODUCTIVITY OF CASHEW NUT-ODISH
FROM 2012-13 TO 2021-22

Area : 000 HA., Production :Metric Tons Productivity Kg/Ha

Year	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	CV	CAGR
Area	163.91	166.91	180.41	182.91	183.31	193.99	205.38	214	214	223.45	10.168	3.503
Production	100.84	85.71	85.5	80.5	93.89	98.59	92.67	110	115.5	121.28	13.077	2.072
Productivity	685	679	474	430	513	513	503	510	540	446	15.604	-4.656

Source: Cepci Reports & dccc

GRAPH NO VII
TRENDS IN PRODUCTION AREA, PRODUCTION QUANTITY & PRODUCTIVITY OF CASHEW NUT-ODISH
FROM 2012-13 TO 2021-22



The above table shows that the trends of cashew nut production area, production and productivity of Odisha. The CAGR of 10 years from cashew nuts area was 3.503, production was 2.072 and productivity was -4.656. The CV was as follows area 10.168, production 13.077 and productivity was 15.604.

WEST-BENGAL:

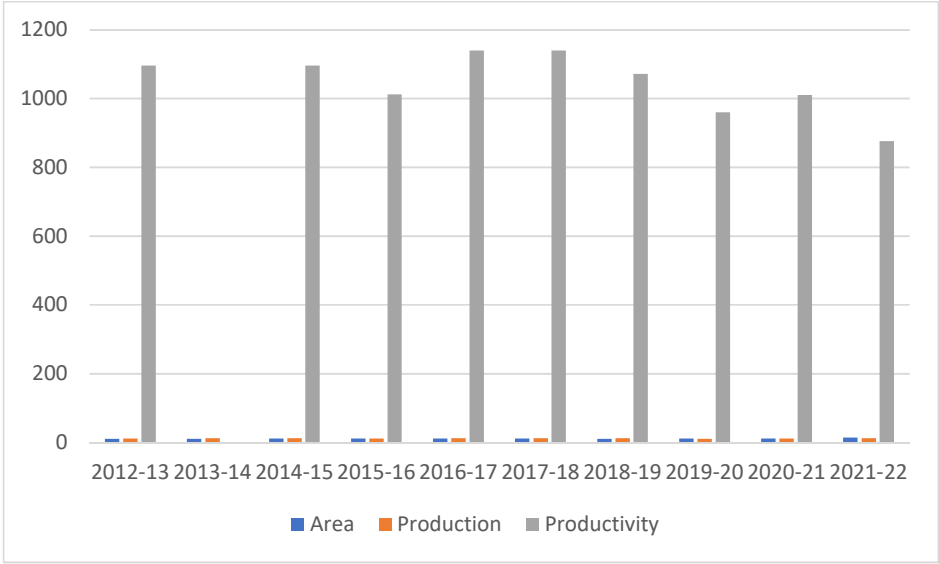
TABLE VIII
TRENDS IN PRODUCTION AREA, PRODUCTION QUANTITY & PRODUCTIVITY OF CASHEW NUT-
WEST BENGAL FROM 2012-13 TO 2021-22

Area: 000 HA., Production: Metric Tons Productivity Kg/Ha

Year	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	CV	CAGR
Area	11	11.16	11.36	11.36	11.36	11.36	11.13	11.4	11.4	14.55	8.522	3.157
Production	12.06	13.03	13	12	12.96	12.96	12.18	11	11.5	12.76	5.480	0.629
Productivity	1096	NA	1096	1012	1140	1140	1072	960	1010	877	7.927	-2.446

Source: Cepci Reports & dccd

GRAPH NO VIII
TRENDSIN PRODUCTION AREA, PRODUCTIONQUANTITY& PRODUCTIVITY OF CASHEW NUT-
WEST-BENGAL FROM 2012-13 TO 2021-22



The above table shown that the trends of cashew nut production area, production and productivity of West-Bengal. The CAGR of 10 years from cashew nuts area was 3.157, production was 0.629 and productivity was -2.446. The CV were as follows area 8.522, production 5.480 and productivity was 7.927.

CHHATTISGARH:

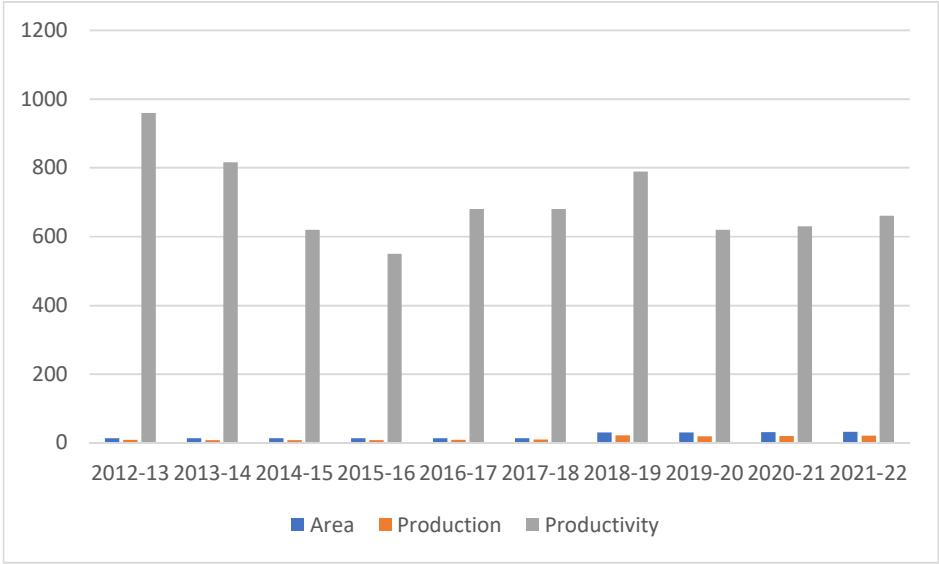
TABLE IX
TRENDS IN PRODUCTION AREA, PRODUCTION QUANTITY & PRODUCTIVITY OF CASHEW NUT-
CHHATTISGARH FROM 2012-13 TO 2021-22

Area: 000 HA., Production: Metric Tons Productivity Kg/Ha

Year	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	CV	CAGR
Area	13.5	13.6	13.7	13.7	13.7	13.7	30.96	31.1	32.3	32.4	42.403	10.216
Production	9.6	8.75	8.5	8	9.33	9.83	21.61	19.4	20.4	21.44	42.276	9.338
Productivity	960	817	620	550	681	681	789	620	630	661	16.369	-4.062

Source: Cepci Reports & dccd

GRAPH NO IX
TRENDSIN PRODUCTION AREA, PRODUCTIONQUANTITY & PRODUCTIVITY OF CASHEW NUT-
CHHATTISGARH FROM 2012-13 TO 2021-22



The above table shown that the trends of cashew nut production area, production and productivity of Chhattisgarh. The CAGR of 10 years from cashew nuts area was10.216, production was 9.338 and productivity was -4.062. The CV was as follows area 42.403, production 42.276 and productivity was 16.369.

Export of Cashew Kernel and CSNL in India for the past 10 years

	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	Quantity (MT)	
											CV	CAGR
Quantity (MT) Kernel	104015	1,14,791	1,18,952	96,346	82,302	84,353	66,693	67,647	48,576	51,908	21.583	-7.4
Quantity (MT) CSNL	91926	9480	10938	11677	11422	8325	5300	4605	429	1,368	57.871	-19.1
Rawnut Import (MT)	892160	771356	939912	958339	770446	649050	835463	938038	831231	939200	11.899	0.6

Source: Cepci Reports & dccc

Export of Cashew Kernal and CSNL in India from 2012-13 to 2021-22

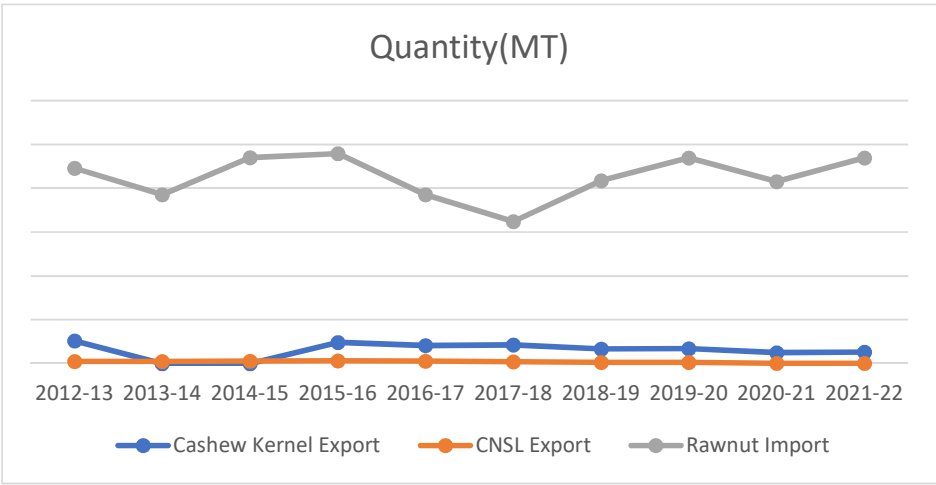
Value (Rs.Crore)

	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	CV	CAGR
Value (Rs.Cror) Kernel	4067.21	5058.73	5432.85	4952.12	5168.78	5870.97	4433.99	3867.165	2840.386	3096.811	23.034	3.0
Value (Rs.Cror) CSNL	29.84	38.61	55.81	57.59	44.00	32.63	26.85	23.093	1.450	6.921	61.401	-15.0
Value Rawnut Import	5331.12	4563.99	6570.93	8561.01	8839.42	8850.03	10,929.00	8861.58	7331.28	9338.33	15.376	6.4

Source: Cepci Reports &dccd

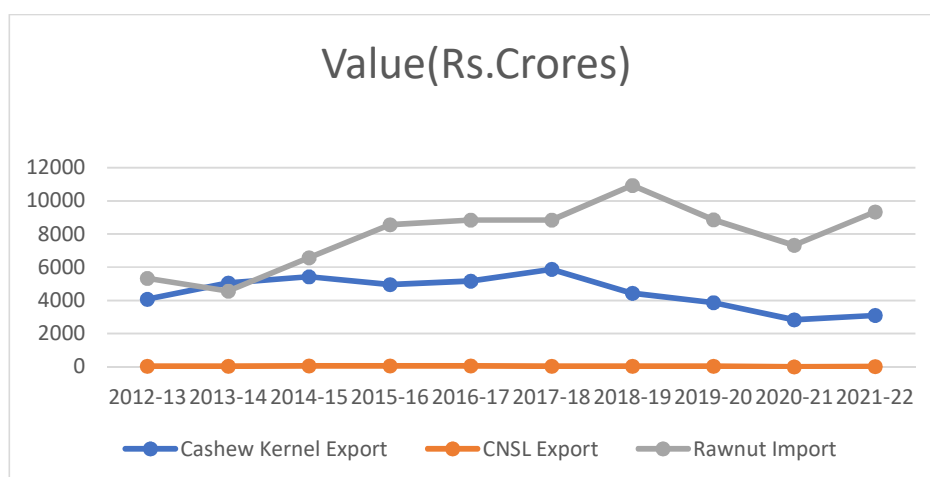
Export of Cashew Kernel and CSNL in India for the past 10 years

Quantity (MT)



Export of Cashew Kernal and CSNL in India from 2012-13 to 2021-22

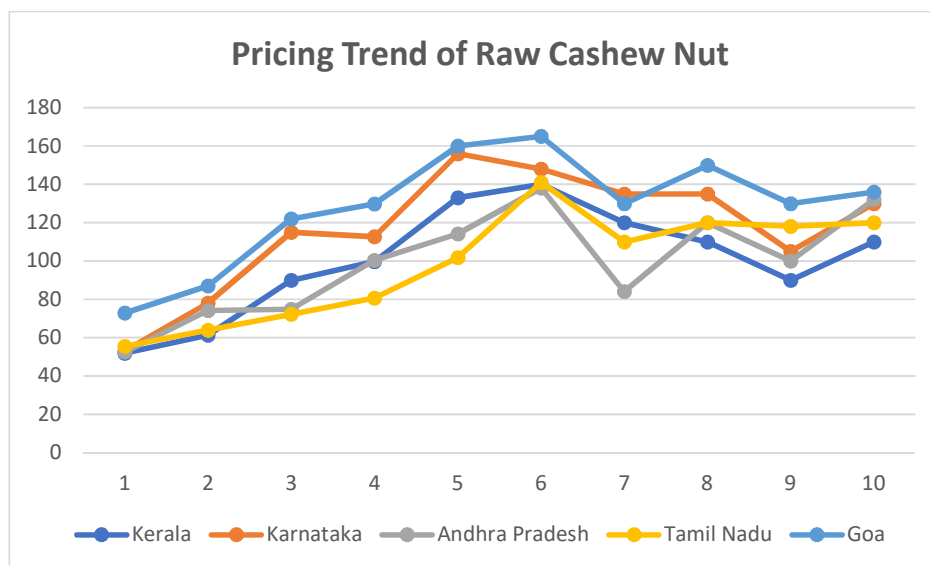
Value (Rs. Crore)



The above graph and table represent the cashew nut exports trends performance in India from 2012-13 to 2021-22. The cashew exports from India in a position to decreasing from last decade. The growth performance of exports Quantity (MT) kernel was in position to decrease and effected with negative percentage -7.4%. At the same time exports Quantity (MT) CSNL was in position to decreasing and effected with negative percentage -19.1 and Import quantity (MT) Rawnut was in position to effective with positive percentage 0.6 CAGR.

Average Pricing Trend of Raw Cashew Nut in Different States

Year	Kerala	Karnataka	Andhra Pradesh	Tamil Nadu	Goa
2013	51.8	53	52.5	55.5	72.78
2014	61.32	78	74.2	63.89	87.08
2015	90	115	74.84	72.27	122
2016	99.68	112.69	100.35	80.68	129.81
2017	133.03	156	114.18	101.8	160
2018	140	148	138	141	165
2019	120	135	84	110	130
2020	110	135	120	120	150
2021	90	105	100	118	130
2022	110	130	132	120	136
CV	26.874	25.808	26.474	27.493	21.649
CAGR	8.7%	10.5%	10.8%	8.9%	7.2%



TRENDS IN CASHEW NUT PRODUCTION IN INDIA:

The Above table discloses about the production capacity of the India states from the 2012-13 to 2021-22. The above table and graph describe about the production of cashew nut in India cashew nut production broadly depends on cashew area, yield rate, and under fruit bearing trees, age of plantation and breed of plantation. The Directorate of cashew and cocoa Development Board, Cochin and the Agricultural University across the states have been continuously intervening for the cashew nut our country. Cashew nut production in India not stable from last decade. The production of cashew in India is fluctuating. The Production is not stable. The India cashew nut production is not stable and no table to maintaining stability with their output quality of production. Some of the state's production quantity is in a position to decreasing. The compound annual growth rate of production of cashew nut in India states also very low. The CAGR is highest from Chhattisgarh occupies the first place with 9.33% Next followed by Tamila Nadu with 2.40 next followed by Odish with 2.07, Andhra Pradesh 0.82, West Bengali 0.62 and Karnataka.

CONCLUSION: Large area under cashew is covered with non-descript genetically inferior seedling progenies. Compared to other plantation crops, cashew is still confined mostly to marginal and poor fertile lands and is considered as a wasteland crop. Moreover, cashew has been considered as 'maintenance free' crop and the recommended package of practices are not followed. The Cashew Processing industry is play a significant role in Economic Development of the country. The industry is providing Employment opportunity in organized and unorganized sectors

and provides productive occupation for weaker sections of the society in rural and semi-urban areas. The Cashew industry is one of the potential industries in terms of output and employment potential, agro based small enterprise in India. In India which provides employment to about 15 lakh people particularly in Andhra Pradesh which provides 2 lakh people get employment opportunity. India is play a significant role in foreign earnings through exports, total export CV 57.871 quantity in Metric tons in 2021-22, with compound annual growth rate -19.1per cent.

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