

An Economic Analysis of Cashew Industry in India

V. Veeranjanya Kumar Polisetty,

Research Scholar,
Acharya Nagarjuna University-Guntur.
Assistant Professor,
Department of Business Administration,
St. Ann's College of Engineering &
Technology, Chirala, India.

Dr. Krishna Banana,

Assistant Professor,
Head of the Department,
Department of Business Administration,
Acharya Nagarjuna University Ongole
Campus, Ongole, India.

ABSTRACT

Cashew is one of the most valuable processed nuts on global markets and has revenue for developing countries. India is largest producer, processor, exporter and consumer of it in the world and earns a sizeable amount of foreign exchange. In India, cultivation of cashew is confined to Kerala, Andhra Pradesh, Karnataka, Goa, Maharashtra and Tamil Nadu, Orissa and West Bengal. Production Area under cashew nuts in India increased by 54.28 per cent from 5.65 lakh hectares during 1993-94 to 10.49 lakh hectares during 2006-17. The compound annual growth rate in production was the maximum in Maharashtra (7.33%) followed by Tamil Nadu (5%) and Karnataka (4.16%). The yield of cashew nut in India increased from 694 kg/ha during 1993-94 to 753 kg/ha during 2016-17. The Cashew prices were very high at Goa compared to all other states in India, due to the large size of nuts as compared to the nuts of other states.

Keywords: Global markets, Compound Growth Rate, Cashew nut, Foreign Exchange.

INTRODUCTION:

The term 'Cashew' has originated from the Brazilian name 'acajaiba' and the Tupi name 'acaju', which the Portuguese converted into 'Caju' and is commonly known as 'kaju' in India. Cashew (*Anacardium occidentale* L.) is one of the important evergreen tropical fruit crops, often referred as 'wonder nut'. It is one of the most valuable processed nuts traded on the global commodity markets and is also an important cash crop. Cashew tree is believed to be a native of Brazil. It was frequently it was grown for soil conservation, and source as fuel a forestation, and wasteland development rather than a cash crop. The cashew nut has been introduced into India in 16th century. Later the kernels from cashew nut become a major source of income to India. India has always been a major player in the production of cashew.

It is the largest producer, processor, consumer and exporter of cashew in the world. India led the production of cashews in 2016-17 with a crop of 7, 79,000 Metric Tons (kernel basis), which represented the 23.00 percent of global production. In India cashew is being grown in an area of 10.40 lakh hectares with a total production of 7.79 lakh MT of raw nuts and unit area productivity of 753 kg/ha. According to the estimates by the Directorate of Cashew nut the most prominent vitamins in cashew are Vitamin A, D and E, which help to assimilate fats and increase the immunity level. Cashew kernel is a rich source of minerals like calcium, phosphorus and iron. Cashew kernel proteins contain all the essential amino acids such as Arginine, Histidine, Lysine, Tyrosine, Phenylalamine, Cytine, Methionine and Valine. Cashew nuts do not add to obesity and help control.

OBJECTIVES:

- ❖ To study the production and export of Cashew from India,
- ❖ To estimate the growth and instability in the export of Cashew and

Cashew is mostly grown in coastal area of Kerala, Karnataka, Goa, Maharashtra, Andhra Pradesh, Orissa and Tamil Nadu. The Kerala state accounts near about 50 per cent of total cashew production in India. Cashew kernels are nutritious and tasty. They are mostly used as roasted and salted nuts in snacks, alone or in mixture with other nut. Broken kernels are used in confectionary and sometimes as substitute for almonds. Ground powder can replaced peanuts butter in exotic dishes. Cashew kernels are integrated in delicious chocolates. Cashew kernel may be used as food medium for loss of appetite, general depression, nervous weakness and scurvy. It is also a rich source of riboflavin, which keeps body active and energetic. 100 g of cashew kernel contributes about 600 kilocalories energy, 22 per cent carbohydrates, 21 per cent protein and 47 per cent fat along with minerals. Cashew nut proteins are complete, having all the essential amino acids and a Kg of the nut yields about 6000 calories compared to 3600 calories from cereals, 1800 calories from meat and 650 calories from fresh citrus fruit. Cashew is cultivated mainly in the Asian, African and Latin American zones. The Asiatic zone includes India and Vietnam as the major producers, besides Indonesia, Sri Lanka, Philippines and Malaysia, Thailand. In the African zone, Nigeria, Côte d'Ivoire and Tanzania are the major producers, further other countries like Ghana, Senegal, Benin, Mozambique, Guinea Bissau, and Madagascar.

The primary producers in the Latin American zone are Brazil, besides Columbia, Costa Rica, Honduras and Salvador. Cashew kernels are of high nutritive value. It contains 21 percent of protein, fat (47%), moisture (5.9 %), carbohydrates (22%), phosphorus (0.45%), calcium (0.05%), iron (5%) for every 100 gm and other mineral elements. Cashew kernel contains 47 percent fat but 82 percent of this is unsaturated fatty acid, which lowers the cholesterol level in blood. The production of raw cashew nuts in India during 2015-2016 was 6,82,000 M.T and area of 1035 hectare as against the estimate production of 7,44,000 MT during 2014-2015. The main objective of the paper is highlight the growth and performance of the cashew nut production in India and compared with the large and small sample data during 1965-66 to 2015-16 (large size) and 1990-91 to 2016-17 (small size). The secondary data were collected from the Directorate of Cashew.

REVIEW OF LITERATURE:

Balasubramaniam (1979) in his study entitled "Import Promotion of Cashew Nut into Japan" has examined the reasons for drastic fall in the exports of cashew kernel. He has found that poor cashew crops, reduction in the inflow of raw cashew nuts from East African countries, relatively high price of raw material and consumer resistance to the resultant higher price of cashew kernel are main reasons for falling of exports.

Thomas Mathew and Rama (1986) in their study entitled "Production and Export of Cashew" analyzed the production and exports of cashew from India. Their study depicts that the state of Kerala, Maharashtra, Andhra Pradesh, Karnataka and Tamil Nadu are the major producers of raw nut. However, the cashew processing industry is mainly concentrated in the states of Kerala and Tamil Nadu. It is observed from the study that Kerala contributes around 60 per cent of the cashew exports from India. According to them, cashew industry plays a vital role in the growth of national economy. Their study indicates that the cashew nut processing unit was initially started at Mangalore in Karnataka and later shifted to Kerala in 1925 due to the availability of skilled labourer.

Ratheesh Kumar (1990) in the article entitled "Cashew Cultivation in India" analyzed the nature of cashew cultivation in India. The study indicates that cashew is a dry land crop and it can be grown in hillside and other areas where no other crop can ordinarily be grown. It does not require irrigation and bring in good yields even under the conditions of water scarcity. It provides the highest return for a given investment.

Oluyole, K.A.,(2017) –They Observed that The cashew production does not get enough protection in terms of policy intervention, yet cashew production is highly profitable and its production in any of the country is having a high comparative advantage. Most of the formers are formally educated, this is a good pointer towards high productivity and thus increases the competitiveness in cashew production. Also most of the Formers having form size is very low, this is because Cashew production in the study area is highly competitive, however, cashew/arable cropping system is the most competitive of the three production cropping systems. Cashew production in the study area is having a high comparative advantage, hence, cashew farmers in the study area utilize their resources efficiently to produce cashew. In as much that cashew production in the study area is highly competitive and is having high comparative advantage, it is hereby recommended that government should give farmers incentives to expand their farms as majority of the farmers are small scale farmers (having less than 5 hectares of land). The incentives may include provision of soft loans as well as subsidized inputs.

S. Banerjee, S. L.Shrivastava (2017)– In his observation the initial Period cashew will be manufactured by using roster method .This method is very less Expensive and also lot of encouragement for the Investors, The cashew Manufacturing will be done easily for less expensive. That will give lot off encouragement for small scale Industry Investors. Now developed cashew nut roaster was found suitable for small scale operation with 3

kg/h processing capacity. The roasting time was found to be 2.5 min, and the roaster needed a heat source for operation. Roaster was to be placed above the furnace, which used locally available dried leaves, wood pieces, and mainly the shells of cashew nuts as fuel source. Practically, operational cost of the roaster and furnace was found zero. The drum roaster could be fabricated using easily available hardware items. Advantages of the roaster include its low cost, small capacity, light weight, and easy mobility. The equipment needs no skilled labor force for operation and may be fabricated using basic work shop tools and welding facility. Now a days so many new technologies are available in Market they can very easily convert raw cashew into finished processed cashew nut. But Implementation of new technology little bit costly but at the same time that can produce large quantity with in short time duration.

Jermi Raju Varghese-(2018) Researcher Opinion that the Government must concentrate on cashew industry, and has to bring in new technology or Partial mechanization as to compete with the cashew industry as there is only less labors and more mechanization which would result in more profit for the cashew industries. Moreover, the unskilled workers are to be relieved of their drudgery and hazardous working conditions .To provide better working condition and sustain the industry. So that the government can uplift the cashew industry by bringing in Partial mechanization without laying off its workers so as to produce raw nuts in a bulk quantity that has high demands, especially for the raw nuts.

The future growth potential of cashew industry is considerably high with immense benefits to the rural producers and workers .The technological up gradation proposed in the study should get a further impetus by way of proactive interventions by the state as well investing for improving the technological capacity of the industry. Efforts for enhancing the skills and technological capability of the workforce would also help the cashew industry to achieve significant gains in the emerging scenario of global market integration..

World Scenario for Cashew Nut Industry:

In the world, a total area of 48.98 lakhs hectares are under cashew cultivation, while the production stands at 671000 tones. Vietnam ranks No.1 in the world by contributing 1221070 ton production on 3.40 lakh hectare area contributing 38 % of the world's production. India ranks 3rd, by contributing 18% of the total world production.

The Major Cashew Nut Growing Countries Are As Follows:

Cashew Production (Tons)		
Country Name	Rank	PDN Quantity
		(Tons)
World		4898210
Vietnam	1	1221070
Nigeria	2	958860
India	3	671000
Cote d ivoire	4	607300
Phillippines	5	216398
Tanzania	6	195140
Mali	7	164185
Guinea-bissasu	8	153888
Indonesia	9	130072
Benin	10	125728
Mozambique	11	104179
Burkina faso	12	78533
Ghana	13	78268
Brazil	14	75548
Kenya	15	24954
Thailand	16	21933
Malysia	17	15689
Guinea	18	9405
Togo	19	8984
Madagasvcar	20	7131
Senegal	21	6909

Cashew Production (Tons)		
Country Name	Rank	PDN Quantity
		(Tons)
Srilanka	22	6078
Mexico	23	3603
Gambia	24	3094
Peru	25	2663
Angolia	26	2076
Honduraj	27	2011
Burma	28	1646
Ei Salvador	29	946
Dominican republic	30	765
China	31	152
Belize	32	24

Indian Scenario:

India is the largest area holder of this crop. Cashew ranks as one of the five top agricultural export commodities. Cultivation of cashew in India is confined mainly to the coastal areas. It is grown in Kerala, Karnataka, Goa, and Maharashtra along the west coast and Tamil Nadu, Andhra Pradesh, Orissa and West Bengal along the east coast. To a limited extent, it is being cultivated in Chhattisgarh, North Eastern States (Assam, Manipur, Tripura, Meghalaya and Nagaland) and Andaman & Nicobar Islands. In India, a total of 9.82 lakhs ha area is under Cashew nut cultivation. In this area, the total production is 7.28 lakh tones. So the productivity is 685 kg/ha which gives employment to 5 lakh people directly or indirectly. A majority of rural women are involved in the cashew nut processing industry. In the world scenario, India occupies a premier position contributing to over 50% of the world’s exports. Despite India being the largest producer and exporter of cashew nuts, the production of raw cashew nut in the country is far below the requirement of the processing sector. There is a need to expand and fully utilize the potential, if India has to keep pace with growing global demand, retain market share and stay ahead of the rapidly emerging competition in the world market.

METHODOLOGY:

The study is based on secondary data collected from the Cashew Export Promotion Council of India (CEPC), Directorate of Horticulture, Directorate of Economics and Statistics and Directorate of Agricultural Marketing of the selected states. State-wise trends in area, production, yield and prices of cashew nut in India has been collected and analyzed for the period 1993-94 to 2016-17 by using standard statistical tools like arithmetic mean and coefficient of variation, compound growth rates, and graphic presentations has also been used to know the concentration of states in terms of area and production under cashew in India.

ANALYSIS AND DISCUSSION:

State-Wise Trends in Area, Production and Yield Under Rawcashewnut in India:

In India, cultivation of cashew is confined to Kerala, Karnataka, Goa and Maharashtra along the west coast and Tamil Nadu, Andhra Pradesh, Orissa and West Bengal along the east coast. Area under cashew nuts in India increased by 53 percent from 5.65 lakh hectares during 1993-94 to 10.41 lakh hectares during 2006-17. The compound annual growth rate in area under cashew nut has been positive in all the states except Kerala(-2.20%). In 1993-94, Kerala had an area of 1,56,000 hectares under cashew cultivation, which declined to 90870 ha during 2016-17. The compound annual growth rate in area under cashew was the highest in Maharashtra (5.54%) followed by Orissa (4.76%) and Andhra Pradesh (4.024%). Government interventions for plantations in wastelands, watershed areas and subsidy support for private plantations were the major reasons for increased area under cashew plantations in these states.

State-Wise Area Under Raw Cashewnut in India ('000 HA)										
Years	Kerala	Karnataka	Goa	Maharashtra	Tamil Nadu	Andhra Pradesh	Orissa	West Bengal	Others	Total
1993-94	156	75	46	51	97	72	60	7	1	565
1994-95	156	75	48	58	97	73	61	7	2	577

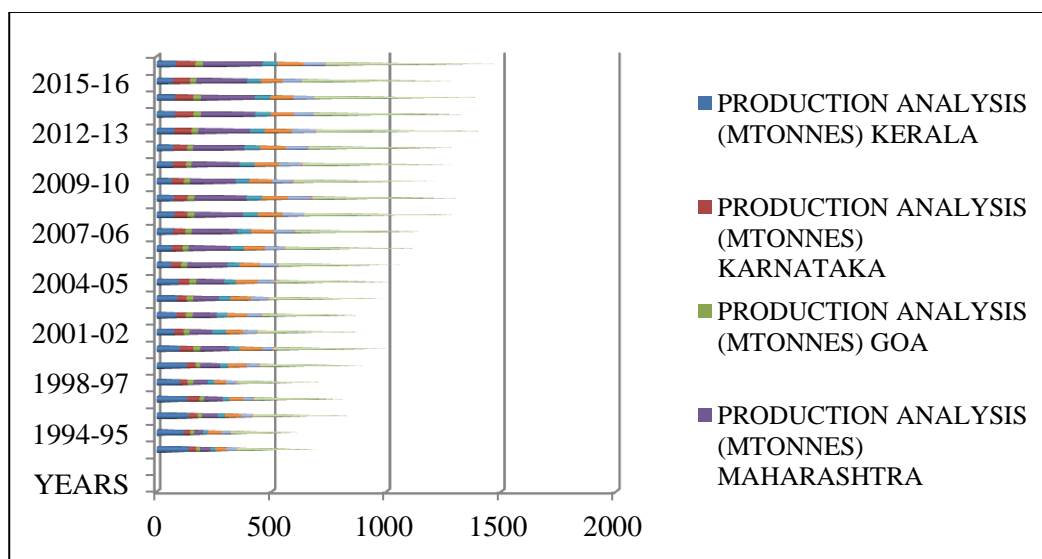
State-Wise Area Under Raw Cashewnut in India ('000 HA)										
Years	Kerala	Karnataka	Goa	Maharashtra	Tamil Nadu	Andhra Pradesh	Orissa	West Bengal	Others	Total
1996-95	119	84	50	67	77	118	102	9	10	635
1997-96	119	85	51	80	79	121	105	9	10	659
1998-97	120	87	52	104	81	121	109	9	16	701
1999-00	122	89	53	119	83	101	114	9	16	706
2000-01	122	91	54	121	85	103	84	9	17	686
2001-02	100	91	55	121	86	130	90	8	19	700
2002-03	100	90	55	143	90	135	110	9	18	750
2003-04	100	92	55	148	92	136	120	9	18	770
2004-05	101	94	55	148	95	136	124	9	18	780
2005-06	102	95	55	160	105	150	126	9	18	820
2006-05	80	100	55	160	121	170	120	10	21	837
2007-06	80	102	55	164	123	171	125	10	24	854
2007-08	84	103	55	167	123	171	131	10	24	868
2008-09	70	107	55	170	131	182	137	11	30	893
2009-10	72	118	55	175	133	183	143	11	33	923
2010-11	78	119	56	181	135	183	149	11	33	945
2011-12	83	121	58	183	136	184	158	10	48	981
2012-13	84.88	121.88	57.47	184.2	136.4	183.95	163.91	11.5	37.79	982
2013-14	84.93	124.11	57.97	184.2	139.4	184.95	166.91	NA	65.21	1008
2014-15	84.53	124.71	58.17	186.2	140.4	185.45	180.41	14.8	52.78	1027
2015-16	87.01	125.86	58.17	186.2	141.3	185.57	182.91	14.8	52.4	1035
2016-17	90.87	127.86	58.18	186.2	141.6	185.57	183.32	14.8	52.48	1041
CAGR %	-2.2	2.248	0.98	5.54	1.59	4.024	4.764	3.2	17.9	2.58
MEAN	99.8	101.8	54.5	144	111	148.6	126.9	10	26.5	823
SD	23.1	16.63	3.12	42.8	23.5	36.57	34.15	2.1	16.7	146
CV	23.2	16.34	5.73	29.8	21.2	24.62	26.91	21	63.1	17.8

From the above table the growth Rate is very high 5.54 for Maharashtra is the top position in the year of 2016-17 year, second highest Growth rate for Orissa 4.764, Next position Andhra Pradesh 4.024, followed by west Bengal with 3.2, Karnataka 2.248, Kerala with -2.2 and other states 17.9. The Variance also representing the same Maharashtra 29.8, Orissa 26.91, Andhrpradesh 24.62.

Production Analysis (Mtonnes)									
Years	Kerala	Karnataka	Goa	Maharashtra	Tamil nadu	Andhra pradesh	Orissa	West bengal	Total
1993-94	140	32	16	47	19	47	43	4	348
1994-95	119	26	17	38	22	59	37	3	322
1996-95	140	38	18	69	31	72	43	7	418
1997-96	134	52	20	80	30	60	40	6	430
1998-97	100	35	25	60	30	50	45	6	360
1999-00	130	40	20	85	35	80	50	8	460
2000-01	100	60	30	125	45	100	40	8	520
2001-02	76	42	25	98	59	75	59	6	450
2002-03	87	40	30	103	46	86	59	7	470
2003-04	90	40	30	110	50	90	70	8	500
2004-05	95	46	32	120	51	95	71	9	535
2005-06	64	43	26	174	53	88	74	8	544
2006-05	67	45	27	183	56	92	78	10	573
2007-06	72	52	29	197	60	99	84	10	620
2007-08	78	56	31	210	65	107	90	4	665
2008-09	75	60	30	225	68	112	95	11	695
2009-10	66	53	26	198	60	99	84	10	613
2010-11	71	57	24	208	65	107	91	11	653

Production Analysis (Mtonnes)									
Years	Kerala	Karnataka	Goa	Maharashtra	Tamil nadu	Andhra pradesh	Orissa	West bengal	Total
2011-12	73	60	25	223	68	110	97	5	692
2012-13	77	74.6	30	225	62	118	##	5	728.5
2013-14	80	80.6	32	235	67	100	86	NA	736.6
2014-15	80	80.5	32	235	67	100	85	5	725.4
2015-16	72	73	28	220	58	96	81	5	670.3
2016-17	84	85.1	33	257	68	111	94	6	779.3
CAGR	-2.1	4.16	3	7.33	5	3.7	3.3	2	3.416
Mean	90	53	26	155	51	90	71	7	562.8
SD	24	16.4	5.1	70.6	16	20	21	3	135.7
CV	27	30.9	19	45.5	30	22	30	39	24.12

From the above table Analysis done for Production analysis in Metric Tons. The Production Analysis done from the year 1993-94 to up to 2016-17. For these years Maharashtra occupied highest position with compound annual growth rate 7.33%. The Second highest produced state is Tamil Nadu with Compound Annual Growth Rate 5.00%, Next highest Production done in Karnataka with 4.16%. Followed by Andhra Pradesh (3.7), Orissa (3.3), Goa (3.00), Kerala (-2.1).

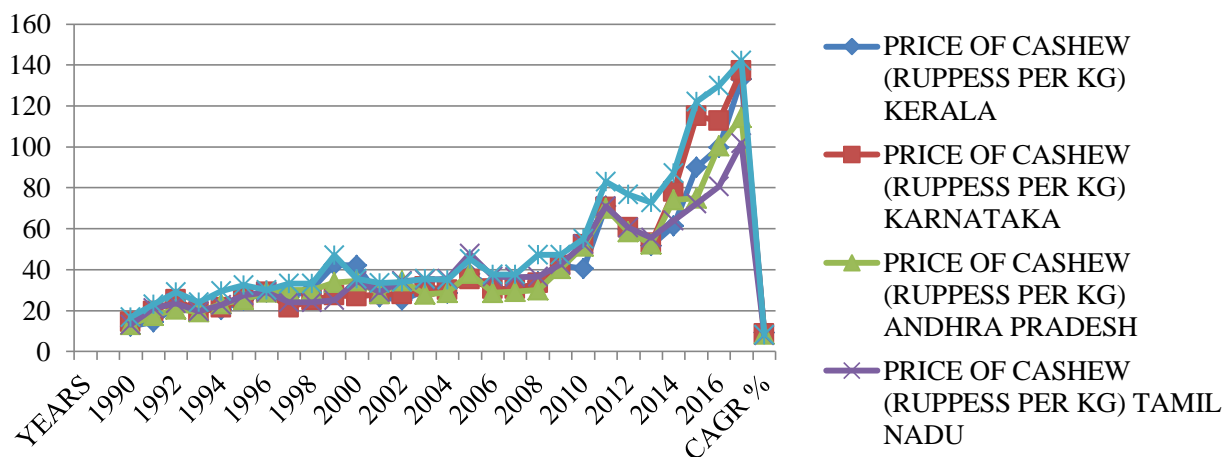


Productivity of Cashew (KG/HA)										
Years	Kerala	Karnataka	Goa	Maharashtra	Tamil Nadu	Andhra Pradesh	Orissa	W.bengal	Others	Total
1993-94	925	500	370	1246	203	723	812	596	299	694
1994-95	781	400	390	1100	232	880	679	490	250	631
1996-95	1000	550	410	1440	330	1000	720	870	560	720
1997-96	1140	690	430	1570	390	830	670	870	870	835
1998-97	850	460	530	1500	390	690	750	860	610	740
1999-00	1100	500	420	1500	460	800	750	890	860	800
2000-01	850	700	610	1470	540	1100	670	900	800	900
2001-02	765	500	500	1050	750	650	700	900	750	710
2002-03	870	470	590	880	570	720	570	780	760	710
2003-04	890	470	660	1000	570	740	810	890	760	760
2004-05	890	500	690	1100	600	750	850	760	790	800
2005-06	900	680	660	1200	610	840	810	800	800	810
2006-05	900	700	690	1300	640	880	860	950	646	815
2007-06	900	700	690	1500	670	890	860	1000	700	820
2007-08	900	710	700	1500	203	900	860	1000	750	860

Productivity of Cashew (KG/HA)										
Years	Kerala	Karnataka	Goa	Maharashtra	Tamil Nadu	Andhra Pradesh	Orissa	W.bengal	Others	Total
2008-09	1071	561	545	1323	519	615	693	1000	633	778
2009-10	957	461	473	1186	472	544	641	909	680	695
2010-11	947	491	436	1231	507	588	669	1000	576	720
2011-12	948	517	455	1282	519	601	683	500	861	749
2012-13	898	640	540	1282	469	646	685	960	1153	773
2013-14	910	750	780	1317	669	646	679	NA	735	782
2014-15	946	645	550	1262	478	539	474	303	NA	706
2015-16	851	572	450	1200	400	490	430	303	NA	650
2016-17	962	672	561	1378	478	600	513	393	NA	753
CAGR %	0.164	1.239	1.75	0.42	3.63	-0.77	-1.9	-1.72	-	0.3406
MEAN	923	576.6	547	1284	486	736	702	779.3	707	758.79
SD	86.49	102.3	114	174.9	142	152	116	223.5	188	63.738
CA	9.371	17.74	20.9	13.62	29.2	20.6	16.6	28.68	26.6	8.3999

Price of Cashew (Rupess Per KG)					
Years	Kerala	Karnataka	Andhra Pradesh	Tamil Nadu	Goa
1990	12.25	14.50	13.00	13.19	16.75
1991	14.50	19.75	17.50	21.25	23.00
1992	22.00	25.50	20.75	23.51	29.13
1993	20.63	19.50	19.50	19.60	24.13
1994	20.50	21.50	23.20	22.80	29.50
1995	25.00	26.00	25.50	27.50	32.30
1996	29.00	29.00	29.00	29.00	30.15
1997	26.40	21.50	30.00	24.00	33.10
1998	30.60	25.00	30.00	24.00	33.10
1999	42.30	27.50	33.75	25.00	47.00
2000	42.00	27.00	34.50	34.50	35.50
2001	26.75	28.00	28.25	29.00	33.50
2002	25.00	28.00	34.50	34.50	34.10
2003	29.75	31.50	28.00	35.00	35.50
2004	28.50	30.00	28.75	35.63	35.10
2005	37.88	35.20	38.10	47.75	45.20
2006	31.20	30.55	28.75	36.60	37.50
2007	29.80	30.50	29.40	36.25	37.70
2008	34.00	33.50	30.00	36.50	47.20
2009	42.15	42.00	40.50	42.50	47.20
2010	40.45	52.29	51.50	52.50	55.06
2011	71.00	70.50	70.00	71.00	83.00
2012	59.59	60.50	58.50	60.50	76.67
2013	51.80	53.00	52.50	55.50	72.78
2014	61.32	78.00	74.20	63.89	87.08
2015	90.00	115.00	74.84	72.27	122.00
2016	99.68	112.69	100.35	80.68	129.81
2017	133.03	137.22	114.18	101.8	142.02
CAGR %	9.235415	8.680087	8.380182	7.8625	8.23875

From the above analysis the average Prices trend will be drawn from the year 1993-94 to up to 2016-17. The Compound Annual Growth rate for Prices were high for the state Kerala occupies number one position in India with a 9.235%. Comparing with all other states Kerala is number one. Second highest Compound Annual rate high for Karnataka with 8.68%. Andhra Pradesh is in third position of cashew prices Averages trends from the year 1993-94 to up to now with a % of 8.38, and next followed state is Tamil Nadu.



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. All these factors lead to low yield. The compound annual growth rate in area under cashew was the highest in Maharashtra (7.54%) followed by Andhra Pradesh (5.26%) and Orissa (4.20%). Production of cashew nut broadly depends on cashew nut area, yield rate, area under fruit bearing trees, age of plantations and breed of plantations. The yield of cashew nut in India increased from 694 kg/ha during 1993-94 to 695 kg/ha during 2009-10, it was much lower when compared to the level of more than 2000 kg/ha reported to be realized by the latest varieties. Besides, the pressures from the processing industry, which is almost dependent on exports of kernels, affect the prices of raw cashew nut. Price of cashew nut in regional market also varied depending on the size and quality of nuts, demand from the processing industries etc. Government interventions for plantations in waste lands, water shed areas and subsidy supports for private plantations were the major reasons for increased area under cashew plantations in these states.

REFERENCES:

- Bala Subramanian, Cashew Exports and Marketing Abroad.
- Bhalla G. S. And Singh G. (2001). Indian Agriculture-Four Decades of Development.
- Chadha K, (2002). *Handbook of Horticulture*, Published By Directorate of Information & Publication of Agriculture, Indian Council.
- Jermi Raju Varghese, Technological upgradation and sustainability of traditional resource based industries: A study of Cashew Export Processing Sector in Kerala, *Journal of Agriculture & Social Sciences*.
- Lanciotti, C., (1990). Forecasts of Monthly Prices for A Group of Dairy Products – An application of the Box-Jenkins Techniques
- Latha Bastine, C. And Palani sami, (1993). An Analysis of Growth Trends
- Oluyole, K.A., Agbeniyi, S.O. and Ayegbonyin, K.O Competitiveness of Cashew Production in Nigeria, *International Journal of Research in Agriculture and Forestry*, Volume 4, Issue 8, 2017, PP 1-7 ISSN 2394-5907.
- Rajiv Kumar, India, Africa And The International Trade – Current Trends And Prospects For The Future, *Indian Cashew Journal*.
- Ratheesh Kumar, Nature of Cashew Cultivation in India, *Indian Cashew Journal*, Vol. XI, Issue 2.
- S. Banerjee | S. L. Shrivastava: Design and development of mini roaster for cashew nut processing. *Journal Of Food process Engineering*.
- Thomas Mathew and Rama, (1986). *Production and Export of Cashew Kernal from India*, National Seminar held at Kannur (Kochi: DCCD, 1986).
