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Growth in export performance of Indian cashew

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Abstract

Cashew is one of the most valuable processed nuts on global commodity markets and has the potential to generate employment and revenue for developing countries. India is the largest producer, processor, Exporter and the second largest consumer of cashew kernel in the world and earns a sizeable amount of foreign exchange. Cashew ranks second in agriculture and horticulture commodities exported from India. The country is earning 25000 Crores through the export of cashew kernels yearly. Over 65 per cent of the world cashew kernels are accounted by India. Today, India dominates the world cashew market over 564 million, India meets two third of world demand for cashew. USA is the largest buyer of Indian cashew. It is developed only in 20th century. Indian cashew are consumed in as many as 60 countries all over the world, the major market being the United States, the United Kingdom, Japan, Netherlands, Australia, Canada, Germany, Hang Kong, Singapore, New Zealand and Middle East countries. Vietnam is the largest Producer of raw cashew followed by India and Brazil. India dominates and leads the cashew kernel Production list.

Keywords: Growth rates, cashew kernels, cashew nut shell liquid, export, import, India

1. Introduction

Cashew (*Anacardium occidentale* L.) is a native of Eastern Brazil introduced to India just as other commercial crops like rubber, coffee, tea *etc.* by the Portuguese in 16th century. The first introduction of cashew in India was made in Goa from where it spread to other parts of the country. In the beginning, it was mainly considered as a crop for afforestation and soil binding to check the erosions. The nuts, apple and other by-products of the plants are of commercial importance. Though, its commercial exploitation began from 1920, marginal lands and denuded forests were the areas set apart for this plantation development. Due to the absence of high yielding varieties and multiplication technique, indicript seed and seedlings were used for planting purpose.

Cashew ranks third in world production of edible nuts that are traded globally. Cashew is produced in around 32 countries of the world. India led in production of cashews in 2015-16 with a production of 1,72,719 metric tonnes (kernel basis), which represented 23 per cent of global production, followed by Côte d'Ivoire 1,71,111 metric tonnes, Vietnam 1,13,095 metric tonnes, East Africa (40,000), Brazil (33,000), Cambodia (19,048), Indonesia (12,000) and others (1,28,712). Worldwide, trade in cashew exceeds US\$3 billion and, 1,10,000 tonnes are traded on international markets. East and West-Africa are exporting almost all their production in shell (raw cashew nuts) to India, Vietnam and Brazil which are to be shelled and processed. India with share of (30 per cent) and Vietnam with share of (54 per cent) were the major exporters during 2015-16. As a major importer of cashew, the USA has a strong influence over the world price.

India has long been the world's largest producer of cashew, with its prices and quality, setting the standard for the industry. In USA, UAE and Europe, India has been the preferred supplier, with long standing trading relationship based on confidence in product quality and on fast and regular deliveries. India has more than 150 cashew kernel shippers.

A large number of small and marginal farmers, especially living on the coastal belts of India, depend on cashew of their livelihood. Cultivation of cashew in India confines mainly to the peninsular areas. It is grown in Kerala, Karnataka, Goa and Maharashtra along the West coast and Tamil Nadu, Andhra Pradesh, Odisha 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 and Nicobar Islands. Now, cashew occupies an area of 10.30 lakh hectares in the country with a production of 9.98 lakh metric tonnes in 20014-15.

The Cashew Export Promotion Council of India (CEPC) was established by the Government of India in the year 1955, with the active cooperation of the cashew industry with the object of promoting exports of cashew kernels and cashew nut shell liquid from India. By its very set up, the council is providing the necessary institutional frame-work for performing the different functions that serve to intensify and promote export of cashew kernels and cashew nut shell liquid. The council provides the necessary liaison for bringing together foreign importers with member exporters of cashew kernels. The enquiries received from the foreign importers are circulated amongst council members. The council also extends its good offices in settling complaints amicably in the matter of exports/imports either of quality and/or variation in fulfillment of contractual obligation.

Even though strong competition from other countries has reduced India's share in the global cashew exports, India's advantage in terms of less percentage of broken kernels has brought European and US buyers to its proximity. To strengthen cashew exports, there is definite need for increasing production by developing cashew as plantation crop on commercial basis, exploring new markets, and strengthening non-traditional markets and adding value to the product by introducing innovations in processing and branding them. After independence, India launched various programmes to expand the area under cashew cultivation. In 1966, Directorate of Cashewnut Development was established under the Ministry of Agriculture with a mandate to increase the production of cashew nuts. Other initiatives introduced under different five year plans include the All India Coordinated Cashew Improvement Project under the Indian Council of Agricultural Research, Programmes on cashew production-area expansion and replanting, along with facilitating cashew processing and trade.

2. Material and Methods

The study on growth in export and import of cashew was purposively taken up in all India level. The secondary data on export and import of cashew were used to analyze the Compound Annual Growth Rate (CAGR). The time series data on export and import of cashew was available from 2000-01 to 2014-15 onwards. Hence, the analysis was covered for the period from 2000-01 to 2014-15. Data used for the study was collected from indiastats.com, Cashew Export Promotion council of India, Directorate of Cashewnut and Cocoa Development. Time series data pertaining to area, production, productivity of cashew was collected for the same period from Agricultural and Processed Food Products Export Development Authority report. The growth in the export and import was estimated using the compound annual growth rate function of the form:

The liner, log-liner, exponential and power function are some of the important functional forms employed to study the growth rate. Different functional forms are tried for working out of growth rates in export and import, some of the important forms tried were the linear growth model ($Y=a+bt$), exponential function($Y=ab^t$) and quadric function ($Y=a+bt+ct^2$) However, it was found that the exponential form of the function $Y_t = ab^t$ is found to be better and most frequently used one. In the present study, the compound annual growth rate for the study technique estimated, compound annual growth rate of export and import of cashew in India were estimated by using exponential growth function (Angles 2001) of the form

$$Y_t = ab^t + U_t \dots\dots\dots (1)$$

Where,
 Y_t Dependent variable for (area, production and productivity in year "t")
 a= Intercept
 b= Regression co-efficient
 t= Year which value from 1,2,... n
 U_t = Disturbance term in year "t"

The equation (1) is transformed into log-linear term and written as

$$\log y_t = \log a + t \log b + \log U_t \dots\dots\dots (2)$$

Equation (2) was estimated by using Ordinary Least Square (OLS) technique.

The per cent compound growth rate (g) was derived using the following relationship (3)

$$g = (\text{Anti-log} b - 1) \times 100 \dots\dots (3)$$

Where,
 g= Compound growth rate per annum in percentage.
 B= Anti-log of log b

3. Results and Discussion

The export performance of cashew in terms of cashew kernel, cashew nut shell liquid and total cashew for quantity and value were analysed by computing compound annual growth rate. Indian cashew exports had recorded a phenomenal growth during the past few years, there had been remarkable increase in the country's foreign earnings from cashew exports. In fact, cashew promises to boost India's export earnings substantially during the upcoming years with the growing global cashew markets offering us plenty of opportunities in this regard. Therefore, in India cashew export policies enunciated over the last few years, the government had identified cashew as a major item for export. Thus, it was imperative that export earnings from cashew showed a rose in both in quantity as well as value. It was in this background that the growth rate for Indian cashew during the last 15 years (2000-01 to 2014-15) was carried out.

3.1. Exports of cashew kernels

Compound growth rates in terms of quantity and value of cashew kernel exports were worked out by using exponential growth model for the period 2000-1 to 2014-15 in the Table 1. The growth rate of value export of cashew kernel was 7.73 per cent per annum for the period 2000-1 to 2014-15.

The growth in value realization of cashew kernel was registered at increasing rate, which was found to be statistically significant at 1 per cent probability level. This high growth in value realization was due to the fact that, there was a slight rise in cashew kernel prices in world market during last few years. For the export of cashew kernel, India would had largely depended on imported of raw cashew nuts from West and East-African countries during the month of May-June and December-January, respectively. There was tough competition in world cashew market for the non-availability of raw cashew nuts for the Indian cashew industry since the many mechanized processing factories were established in East Africa. In India, the raw cashew nuts production during these years was fairly good and hence,

there was a greater demand for export. Hence, could fetch attractive prices from importing countries.

India and Vietnam, were contributing more than 68 per cent of the total production to the world cashew trade. Vietnam and Brazil emerged as stiff competitors to the Indian cashew industry. In order to maintain prime position in world cashew trade as well as in production, country would have to take effective steps to enhance domestic production of raw cashew nuts through the expansion of area and thus earning valuable foreign exchange. Increasing area and production of raw cashew nuts in India would help in generating better foreign income, improving living standards of cashew growers. Thus, considering the country's diverse agro-climatic conditions and available cheap manpower, there exist vast potential for production and export of cashew products, which needed to be harnessed effectively in coming years.

Table 1: Growth in export of cashew kernel from India during 2000-01 to 2014-15

Years	Cashew Kernel (CK)	
	Quantity (MT)	Value (₹ crore)
2000-01	89,155	2,049.60
2001-02	97,550	1,776.70
2002-03	1,04,137	2,020.70
2003-04	1,00,828	1,699.77
2004-05	1,26,667	2,477.15
2005-06	1,14,143	2,584.95
2006-07	1,18,540	2,491.16
2007-08	1,14,345	2,289.02
2008-09	1,09,522	2,988.40
2009-10	1,17,991	2,801.60
2010-11	91,559	2,598.15
2011-12	1,31,760	4,390.68
2012-13	1,00,105	4,046.23
2013-14	1,14,791	5,058.73
2014-15	1,18,952	5,432.85
Average	1,10,003	2,980.37
CV (%)	11.32	39.74
R ²	0.16	0.83
CAGR (%)	1.03 ^{NS}	7.73 ^{**}

Note: ** Significant at 1% level. NS= non-significant
Source: Cashew Export Promotion Council of India (CEPC)

3.2. Exports cashew nuts shell liquid

The role of cashew export trade of Indian economy could throw light on cashew export trade viz., Cashew Nut Shell Liquid (CNSL),

Table 2: Growth in export of cashew nut shell liquid from India during 2000-01 to 2014-15

Years	Cashew Nut Shell Liquid (CNSL)	
	Quantity (MT)	Value (₹ crore)
2000-01	2,246	3.89
2001-02	4,178	5.93
2002-03	6,023	8.36
2003-04	6,926	7.03
2004-05	7,474	7.91
2005-06	2,246	7.09
2006-07	4,178	10.29
2007-08	7,813	11.98
2008-09	9,099	26.06
2009-10	11,227	27.62
2010-11	11,364	31.85
2011-12	10,563	29.60
2012-13	9,192	29.84
2013-14	9,480	38.61
2014-15	10,938	55.81
Average	7,937.80	20.12
CV (%)	33.80	76.11
R ²	0.69	0.93
CAGR (%)	8.39 ^{**}	19.47 ^{**}

Note: ** Significant at 1% level.

Source: Cashew Export Promotion Council of India (CEPC)

which was an important and versatile industrial raw material and had wide industrial uses, particularly in the manufacturing of moldings, acid-resistant paints, foundry resins, varnishes, enamels and black lacquers for decorating vases and an insecticides and fungicides. The export of CNSL was highly fluctuating during the study period. The Table2 revealed that the exported quantity of CNSL from India was recorded a growth rate of 8.39 per cent per annum for the study period 2000-01 to 2014-15 and the export value registered at a higher rate of growth 19.47, the increased in the growth of export value was mainly due to the sharp rise in the price of CNSL.

3.3. Total exports

Cashew was primarily an export-oriented commodity of India. India exports both cashew kernels and cashew shell liquid to foreign nations. The quantity of total cashew exports had been gradually increased, the annual growth rate of export value was 1.45 per cent (Table3).

Table 3: Growth in export of total cashew from India during 2000-01 to 2014-15

Years	Total (CK+CNSL)	
	Quantity (metric tonnes)	Value (₹ crore)
2000-01	91,401	2,053.49
2001-02	1,01,728	1,782.63
2002-03	1,10,160	2,029.06
2003-04	1,07,754	1,706.80
2004-05	1,34,141	2,485.06
2005-06	1,20,548	2,592.04
2006-07	1,24,679	2,501.45
2007-08	1,22,158	2,301.00
2008-09	1,18,621	3,014.46
2009-10	1,29,218	2,829.22
2010-11	1,02,923	2,630.00
2011-12	1,42,323	4,420.28
2012-13	1,09,297	4,076.07
2013-14	1,24,271	5,097.34
2014-15	1,29,890	5,488.66

Average	1,17,941	3,000.50
CV (%)	11.7074	39.92
R ²	0.23	0.28
CAGR (%)	1.16 ^{NS}	1.45*

Note: * Significant at 5% level. NS= non-significant

Source: Cashew Export Promotion Council of India (CEPC)

The annual growth rate of value of exports was significant at 5 per cent level. The significant and positive growth rates of cashew mainly due to export of cashew kernel which had more demand in international markets, consistent policies for export of cashew kernel, higher international price, increased domestic production of cashew which made comfortable stock of cashew in central pool and so on. Therefore, in order to sustain positive and significant growth in cashew exports, it is necessary to develop suitable governmental policies, considering the country's varied agro-climatic conditions and large manpower, for production and exports.

3.4. Imports of raw cashew nuts

The import growth of raw cashew nuts in period 2000-01 to 2014-25 in terms of quantity and value showed increasing and positively significant, the Table 4 depicted that the quantity imported of raw cashew nuts had increased from 2,49,318 metric tonnes in 2000-01 to 9,40,813 metric tonnes in 2014-15, registered a compound annual growth rate of 7.57 per cent per annum. The value of import increased from ₹ 960.80 crore in 2000-01 to ₹ 6,570.93 crore in 2014-15, recorded a positive compound annual growth rate of 14.09 per cent per annum. The co-efficient for quantity and value of imports were statistically significant at one per cent. The main reason attributed to the increasing trend of raw cashew nut imports was that, India had encouraged to eatable large scale processing industries. The similar results depicted by Guledgudda, (2005) depicted that the quantity imports of raw cashew nuts have increased from 0.20 lakh metric tonnes in 1978-79 to 4.53 lakh metric tonnes in 2003-04, registered a compound growth rate of 17.69 per cent per annum. The value of imports increased from ₹ 9.16 crores in 1978-79 to ₹ 1,400.93 crores in 2003-05, recorded a positive compound growth rate of 12.44 per cent per annum.

Table 4: Import of raw cashew nuts by India during 2000-01 to 2014-15

Years	Raw cashew nuts imports	
	Quantity (MT)	Value (₹ crore)
2000-01	2,49,318	960.80
2001-02	3,56,566	960.01
2002-03	4,00,659	1,236.57
2003-04	4,52,898	1,400.93
2004-05	5,78,884	2,183.24
2005-06	5,65,400	2,162.95
2006-07	5,92,604	1,811.62
2007-08	6,05,970	1,746.80
2008-09	6,05,850	2,632.41
2009-10	7,52,894	3,037.35
2010-11	5,04,138	2,479.50
2011-12	8,09,371	5,337.76
2012-13	8,92,160	5,331.12
2013-14	7,71,721	4,573.59
2014-15	9,40,813	6,570.93
Average	6,05,283.00	2,828.40
CV (%)	3.04	1.58
R ²	0.81	0.90
CAGR (%)	7.57**	14.09**

Note: ** Significant at 1% level.

Source: indiastat.com

Vietnam was also competing with India in purchase of raw cashew nuts from other African countries. In addition to this, Vietnam processors, besides enjoying considerable government support, to procure uniform quality raw cashew nuts indigenously at prices much lower than the Indian processors. As results of this, they lost majority of our market share to Vietnam recently.

4. Conclusion

The growth of cashew kernel export in terms of quantity and value showed the increasing trend in terms of value. This was mainly due to increase in unit value realization. The growth in export of cashew nut shell liquid both in terms of quantity and value showed increasing trend. This was attributed to increase in the prices of cashew nut shell liquid in the world market during 2000-01 to 2014-15. The growth rates in export quantity of cashew nut shell liquid were statistically significant during the study period.

The import growth of raw cashew nuts in terms of quantity and value was increasing and positively significant. This was attributed to increase in the unit prices of imported raw nuts as well as increase in imports of raw nuts. The imports of raw nuts had been increasing at the rate of 7.57 per cent and 14.09 per cent in terms of quantity and value respectively. The main reason attributed to the increasing trend of raw cashew nut imports was that India had taken up large scale mechanized processing of raw nuts. India was more competent to import raw nuts from other countries because they had the large labour force to do the processing manually.

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