

# Cashew nut Supply Chain Challenges in India

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## **Abstract**

The consumption demand of cashews has started to surge in the recent few years. The consumer's perception of cashew nut has shifted from a 'luxury' commodity to that of a 'health and necessity' commodity. Yet there are many grave issues that limit the growth of raw cashew business in the country. As time passes the intricacies of the trade are growing. Even though the industry is an emerging industry and supports a large number of rural people; it has been observed recently that exports of cashew kernels have decreased and import of raw cashew nuts has increased. The major constraints faced by the industry are insufficient and irregular availability of raw materials and the higher processing cost borne by the cashew processors. The cashew value chain includes both small producers and workers at processing units whose finished products are sold in India and abroad. As a bigger share of profits is captured by the middlemen who are distributed throughout the value chain, small-scale producers are not getting a good price for their crops. Processors in turn are paying lower wages to their workers because of high raw material and processing costs. As far as the utility of supply chain management in the Indian cashew industry is concerned, it must include benefits to both small-scale producers and labourers in processing units. The need of the hour is to explore the Indian cashew industry supply chain for necessary adjustments to ensure a continuous supply of raw nuts to cashew processing units and finding out ways to reduce the involvement of middlemen in the cashew supply chain. While the supply chain challenges of the Indian cashew industry are practically very grave in nature, some efforts are being done on the policy front to tackle the issues. But the volume of such efforts by the government needs to be scaled up if a visible difference is to be seen in the plight of the Indian cashew industry in the future. So the best way of thriving in this industry is to understand the supply chain of the business appropriately, and take corrective measures to remove the bottlenecks.

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## **I. INTRODUCTION**

India has a leading position in the cashew market in the world. India ranks 1<sup>st</sup> in production of raw cashew nuts (RCN) but Vietnam is the largest producer exporter of cashew kernels with a total production of 12.21 tonnes (kernels) from 2.81 l ha area. Availability of sufficient workers ready to work for lower wages made India to thrive in this industry. The cashew processing industry provides many employment opportunities to rural people particularly women. India's share of world exports of cashew kernels is 21%, Vietnam being the highest exporter with a 62% share of world exports.

India exports cashew kernels to the USA, UK, UAE, Germany, Netherlands, Korea, Japan, France, Belgium, etc. Cashew industry in India absorbs around 1.50 million workforces and a majority of them are woman (90%).

Even though the industry is an emerging industry and supports a large number of rural people; it has been observed recently that exports of cashew kernels have decreased (by 18%) and import of raw cashew nuts has increased. Some of the major constraints faced by the industry are insufficient and irregular availability of raw materials and the high processing cost borne by the cashew processors. These constraints can be addressed to a

great extent by reducing the dictating role of the middlemen in cashew value chain.

This research focuses on the benefits that can be derived by small- scale producers and women laborers by eliminating or reducing the extent of involvement of middlemen who eat into the profit margin of small- scale producers and processors.

### 1.1 History of Indian Cashew

Cashew (*Anacardium occidentale*) a tropical evergreen tree, was brought to India by the Portuguese missionary from Brazil, mainly as an effort to prevent soil erosion on the western coasts in 1563. The word cashew is derived from the Portuguese word 'Caju' it is also named 'Acaju' in Brazil, 'Merrey' in Venezuela, 'Cajuil' in Spain and 'Decajou' in France.

Out of the nine important tree nuts commercially traded world over cashew ranks second, next to almond. On a commercial scale, cashew nut processing was started in India by a Srilankan named Roch Victorian in 1920s who later migrated to Quilon (Kollam, Kerala, India ). The first commercial venture was set up by W.T. Anderson in Quilon under in the name of Indian Nut Company. Indian Nut Company mainly supplied the cashew kernels to customers in the USA.

As the demand for Indian cashew kernels grew in the international market India started importing raw cashew nuts from African countries around 1939. In 1955 Ministry of commerce created 'Cashew Export Promotion Council (CEPC)' mainly to encourage the exports of cashew kernels and allied products from India. In 1966 the govt. of India formed the Directorate of Cashew nut Development. Through the efforts of Directorate of Cashew nut Development the cashew development programs found a place in the five-year plans.

A serious effort for the development of the cashew sector was started with plan IV onwards. During plan IV (1969-1974) All India Coordinated Cashew nut improvement project was started to undertake intensive research on cashew. During the fifth five year plan (1974-1979) Cashew development corporations and forest development corporations encouraging cashew production was a strategic step towards the development of this sector. A World Bank aided project for cashew was undertaken in four major States of Kerala, Karnataka, Andhra

Pradesh and Orissa in the Sixth five-year Plan (1980-1985).

7th five-year plan (1985-1990) was a period when nearly 25 high yielding varieties suited to different agro-climatic tracts of India were obtained. Budget allocation for horticultural crops and for cashew, in particular, was the highest ever (Rs. 48 crores) during the 8th five-year plan (1992-1997).

### 1.2 State of the market in Indian economy for cashews:

On a global scale, Vietnam is the top country in the export of cashew kernels (62%) followed by India (21%). The same order prevails for the global cashew nut processing sector as well. In 2016 India has imported cashew kernels of 28.57 million US \$ and exported cashew kernels to the tune of US \$ 730.99 million. In the same year, India has imported raw cashew nuts of US \$ 1180 million whereas exported raw nuts of US \$ 11.95 million (H.R.Bhoomika, 2018). The above figures stress the huge capacity of our processing industries and also highlight the urgent need for raw nuts for further processing. There has been a gradual increase in the consumption of cashews within the country which increased from 58% (2006-2007) to 80% (2016-2017).

The yield of the nuts in India is low when compared to other important nut producing countries. The reason being our old and senile plantations which have a seedling origin. Most of the cashew growing areas fall in low soil fertility zones thereby decreasing the overall yield.

There are around 3940 cashew processing units currently operating in India including small, medium and big processors. When compared to the total production of raw nuts in the country, the present processing capacity of units is much higher, around 20 lakh tonnes (H.R.Bhoomika, 2018). Therefore around a third of processing requirements of the country are met by imports. Due to crop damage in Vietnam and Cambodia (who are also big processors), much of the raw nuts were imported by these countries thereby causing a supply shortage for India.

Michael Porter (1985) has propounded a management concept known as 'value chain' that had attracted the attention of managers and strategists alike for gaining competitive advantage in the marketplace. The value chain separates the

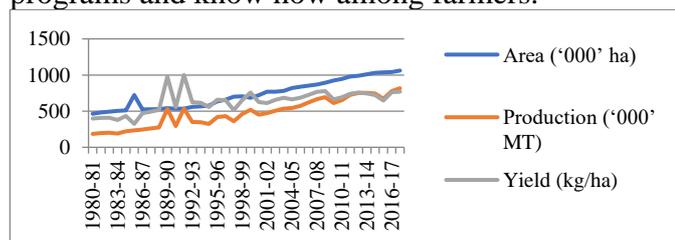
activities of the organization and groups them under different strategically important activities to understand the behavior of costs and for gaining sources of product differentiation. Porter's 'model of the value chain can be applied to the Indian cashew industry as well for gaining strategic and product differentiation benefits. Some meaningful insights regarding the suitability of using porter's value chain to the Indian cashew industry can be gained from the ideas offered by Mundinamani et al. (2018) in their study report: 'Analysis of cashew value chain in Goa'.

According to Mundinamani et al. improvement in value chain reduce inventories, wastage, and cost, thus increase efficiency within the firm and in the market channel. Achieving these gains requires mobility and flexibility in the scheduling and location of production, processes, inventories, and distribution. This can be achieved through supportive and cooperative supplier-buyer relationships as depicted in Porter's value chain.

The idea propounded by Porter was that firms must look at each activity and ascertain whether they are having a real competitive advantage in the activity. Otherwise, they should consider outsourcing the activity to another company that can provide that value advantage. This idea was then widely accepted and led to huge outsourcing in almost all industries. The idea of outsourcing is to spread the value chain across different businesses. In other words, we can say that the supply chain of a business becomes its value chain.

### 1.3 Trends in Area, Production and Yield

From the year 1997 to 2013 the area under cashew cultivation showed a growth of 3.50% per annum but there was a substantial increase of 7.50% per annum in production. These were basically due to the successful awareness creation of technology programs and know how among farmers.



**Figure 1. Trends in area, production, and yield of cashew (1980-81 to 2017-18)**

*Source: Adapted from Mahantesh and Manjunatha, 2018*

Figure 1 describes that from 2013 up to 2017 there is a gradual increase in area under cashew cultivation but production and yield (productivity) figures are more fluctuating over these years (Mahantesh and Manjunatha, 2018). The reasons which are responsible for low yield in the country over the past few years are as follows:

- Farmers use local varieties as seeds which are low yielding
- Cashew plantation being done in marginal and infertile lands
- Non-adherence to the recommended package of practices
- Infestation by pests leading to reduced yield up to 40%

## II. OBJECTIVES

Following are the objectives of the article:

- 1) To explore supply chain adjustments necessary to ensure a continuous supply of raw nuts to processing units.
- 2) To study different alternatives to reduce the involvement of traders and commission agents in the cashew supply chain.

## III. SUPPLY CHAIN MANAGEMENT

The supply chain of the cashew industry in India provides employment to a large number of poor women workers from rural areas. These women workers get continuous employment in the processing units although they are left out of the benefits derived from price increases of cashew kernels in international markets.

The cashew value chain includes both small producers and workers at processing units whose finished products are sold in India and abroad. As a big share of profits is captured by the middlemen, small-scale producers are not getting a good price for their crops and processors are paying lower wages to their workers because of high raw material costs.

For the purpose of gaining a clear understanding of the concept of "supply chain" a reviewing of the following definitions given by some authors becomes pertinent. Supply chain management performance is measured "both in terms of customers' level of satisfaction – since they remain the ultimate judges of how much value is actually being created at a logistics level– and the costs" (D. Estampe et al., 2013). Supply Chain

Management (SCM) is the “network of entities through which material flows. Those entities may include suppliers, carriers, manufacturing sites, distribution centers, retailers, and customers” (Rhonda R. Lummus, 1999).

The supply chain “encompasses every effort involved in producing and delivering a final product, from the supplier's supplier to the customer's customer” (The Supply Chain Council, 2003).

SCM is the “management of upstream and downstream relationships with suppliers and customers to deliver superior customer value at less cost to the supply chain as a whole” (Christopher, 2005).

SCM is “an integrating function with primary responsibility for linking major business functions and business processes within and across companies into a cohesive and high-performing business model. It includes all of the logistics management, as well as manufacturing operations, and it drives coordination of processes and activities with and across marketing, sales, product design, finance, and information technology” (Harmon, 2010).

SCM is the “management of the interface relationships among key stakeholders and enterprise function” (Walters & Lancaster, 2000).

The ultimate goal of SCM is to “achieve greater profitability by adding value and creating efficiencies, thereby increasing customer satisfaction” (Stock and Boyer, 2009).

SCM “encompasses the planning and management of all activities involved in sourcing and procurement, conversion, demand creation and fulfillment, and all logistics management activities. Thus, it also includes coordination and collaboration with channel partners, which can be suppliers, intermediaries, third-party service providers, and customers. In essence, Supply Chain Management integrates supply and demand management within and across companies” (Mentzer et al., 2001).

### 3.1 Supply Chain of cashew industry

To keep the unit running throughout the year, 50 percent of the processors are dependent on imported nuts from different countries. The raw nuts are available in India for four months in a year from March to June. Because of the shortage of raw

nuts many (39%) small (up to 100 tons/year) and medium (42%) (100-500 tons/year) capacity processing units have been established. The capacity utilization even in most of these small and medium units is below 50%. About 1,100 processing units are functioning at present requiring a million tons of raw nuts. The domestic supply is able to meet the needs of nearly about half a million tons only. Thus, only 60 percent of processing capacity is at present getting utilized and 40 percent of the existing capacity still remains unused. Big processing units depend mostly on imported nuts as the small and medium capacity processing units in the unorganized sector are able to block the local raw nuts within their area of operation.

Raw cashew nuts are procured for processing mainly in four ways:-

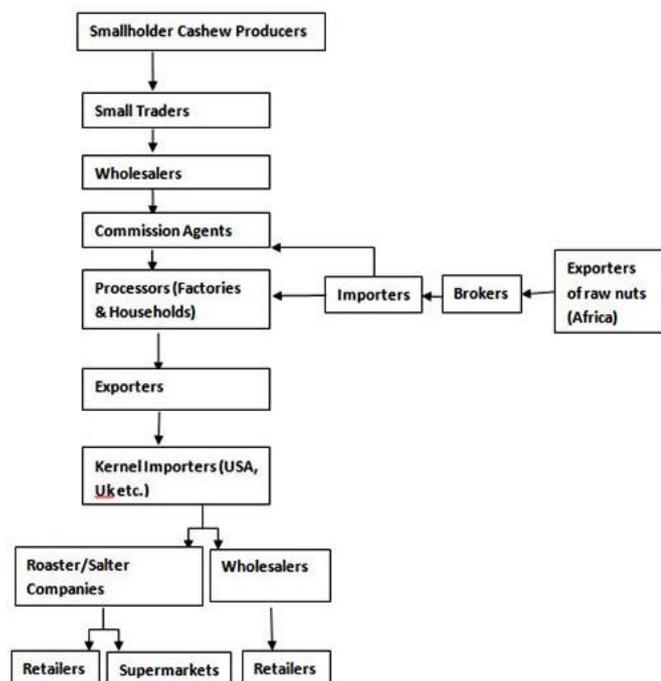
- Direct purchase from farmers
- Purchase from the local market
- Purchase from traders and agencies
- Through imports.

Nearly, 70% of the raw material (raw nuts) is procured through imports. The reasons for the huge import of raw nuts are an exemption from tax (4 percent purchase tax), a good price and they can be done any time in the year.

Villagers collect small quantities of nuts (8 to 10 kgs) directly from the plantation and sell to small traders in their own village. These traders are normally small shopkeepers in the village who provide villagers with essential goods like rice and grocery items in exchange for these nuts. These small traders sell these nuts to large traders who supply them again to the processors either through some commission agents or directly.

During the offseason villagers even get essential goods on credit from the small trader (shopkeepers) for a guarantee to supply them with raw nuts at harvest time. Unlike small traders, villagers are normally not very much aware of quality and variety. Low quality and all African nuts command a lower price. But small traders are successful in getting a decent profit by cleverly mixing inferior and superior quality nuts and selling them to large traders. Small traders also try to exploit the villagers by offering them lower prices as the cashew season (April to June) does not overlap with normal agriculture season (July to October – Kharif crop and October to March – Rabi crop).

Between April to June months, villagers do not have any employment avenues available. So they give in to the terms dictated by the small traders as getting some income during this time of the year is very crucial for their survival. Harilal et al. (2006) has presented a simplified model of supply chain of cashew industry as depicted in Figure 2.



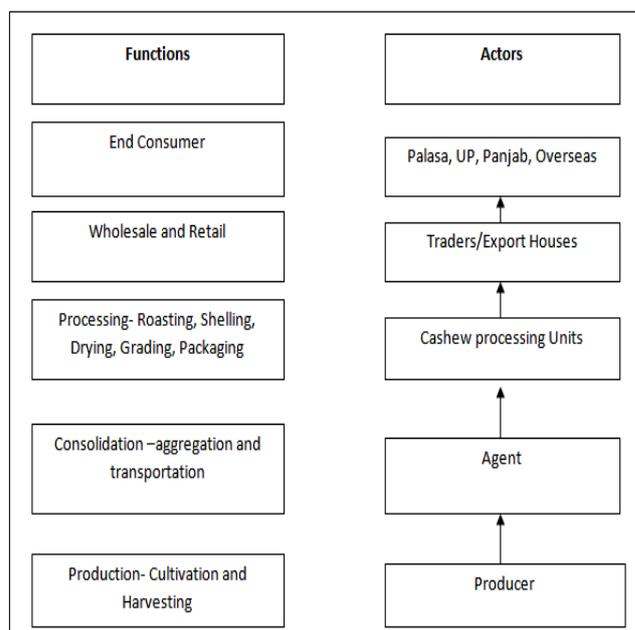
**Figure 2. A simplified cashew supply chain**  
*Source: Adapted from Harilal et al. (2006)*

While the supply chain challenges of the Indian cashew industry are practically very grave in nature, some efforts are being made on the policy front to tackle the issues. But the volume of such efforts by the government needs to be scaled up if a visible difference is to be seen in the plight of the Indian cashew industry in the future. Some of such efforts which should be considered by the government to improve the Indian cashew industry are as follows:-

- a. **Eliminate middlemen in cashew trade**
- b. Negotiation of prices and stock inspection
- c. Memorandum of understanding with raw nut supplying countries
- d. Minimum wages for processing unit workers
- e. Transfer of innovative farming technologies to farmers through R&D
- f. Modernization/mechanization of the cashew processing units
- g. **Removing supply chain bottlenecks**

### 3.2 Role of intermediaries

As far as the utility of supply chain or value chain management to the Indian cashew industry is concerned, it must include benefits to both small-scale producers and laborers in processing units. The small scale cashew processors procure the raw cashews from local level small traders or agents within a radius of 20 kilometres. In each small scale unit, an average of 40 fulltime workers are engaged, most of them being woman. These workers are engaged in the unit for about eight months in a year and are engaged in activities like drying, boiling, roasting, peeling and packing. Out of these processed cashews, 85% are routed through a local trader to big traders in cities for being exported or for consumption in cities itself. 15% of the kernels are routed to the local market again through an agent or are directly purchased by the shopkeepers/grocery stores. These small scale processors also encourage other service providers to benefit from the value chain (Kujur, 2015).



**Figure 3. From producer to processors – the cashew supply chain in Odisha**  
*Source: Adapted from Kujur (2015)*

Figure 3 describes the various players engaged in the supply chain and the unique functions performed by them (Kujur, 2015). Though this value chain concentrates on Odisha, it shows functionaries in various locations and the functions performed by them.

Like any other agricultural produce, the cashew value chain also starts with small scale farmers with an average land holding about two acres or less. They receive some technical know-how from processors and other business development organizations. The cashew cultivation process in India is very much diverse in nature ranging from government to private to mixed plantations. Small land holdings of the cashew farmers are a serious limitation to processors for fully realizing the benefits of the international rise in cashew kernel prices.

Next functionaries in the supply chain are agents who work as aggregators. They collect small quantities from village farmers and then sell them to the processors in a lot after adding a high mark-up margin (often 20 to 30%). These agents are normally having enough capital to purchase raw nuts from farmers and store them at suitable places. Normally the processors contact these agents for delivery of raw nuts of a particular specification, although the agents may also contact the processors if they have a sizable quantity of raw nuts for delivery. There are many middlemen who supply raw nuts from the villages to the processors but there are no exclusive agents who deal with cashews only as this is a seasonal business ranging about four months. The same agents work anywhere else or in their own business during the offseason. It is interesting to note that apart from the village moneylenders the agents act as a vital source of credit to the farmers. But unfortunately, the agents very much like the moneylenders try to exploit the village farmers due to their illiteracy and financial distress.

In the cashew supply chain, the processors are the main link around whom the whole cashew economy revolves. The processors are grouped into small, medium or big depending upon the number of bags (80 kgs.) that they can process per day. Around 75% of these units are located in three states of Maharashtra, Kerala, and Karnataka whereas the states of Odisha and Andhra Pradesh have only about 10% of the units (Kujur, 2015).

When the processed cashew kernels are ready for consumption they are sent to the traders and export houses throughout the country that in turn send them to local food retailers in India and for export to other countries.

#### IV. CURRENT PRODUCTION AND PROCESSING STATISTICS

Until 1970, each processor procured his own raw nut supply, both imported and local (Stern, 1980). In that year, GOI established the Cashew Corporation of India (CCI) as the sole importer of raw nuts. Distribution to processors was based on export performance in the years preceding CCI establishment. The procedure worked smoothly, but it had frozen the structure of the processing industry in its 1970 form and has discriminated against processors in new cashew areas. Until 1976, local nuts in all states were procured by processors' agents through a series of middlemen.

Post-1980 growth of cashew Industry took place at a faster level, getting more and more regionalized to production centers. This trend appeared so as to utilize the production emanating in every region. The export market is handled by the industrial units of the organized sector, which constitute 70 percent of the total processing units (Retheesh, 2005). Of the total processing units 30% fall in the unorganized sector. These processing units gather the raw nuts from their vicinity process them and send them mainly for internal consumption. The faster growth of such unorganized processing units has created a huge shortage of raw nuts for the units which are falling in the organized sector and are export-oriented. So in order to function to cover their investment costs, they resort to imports from foreign countries. So in the future, the trend is projected to continue with the growing importance of imported nuts. It is important here to understand that with the growing production of raw nuts in the country the number of such unorganized processing units will also grow to pose a threat to the functioning of the export-oriented organized processing units. The world consumption, unless increases from the present level, and unless kernel importing countries demands more or new area is exploited, any effort to increase the production will only help domestic processing for domestic consumption (Retheesh, 2005).

However, the current production and processing statistics for India shows an encouraging trend. The production of raw cashew nuts in India during 2017-18 has increased to an all-time high at 8.17 lakh metric tons and registered growth of 4% compared to the previous production of 7.79 lakh

metric tons and 21 % increase compared to 2015-16 production of 6.70 lakh metric tons (Press Information Bureau, 2018).

The Indian cashew nut industry is facing a situation of a demand-supply gap. To feed our processing industries, it is estimated that there is a total shortage of raw cashew nuts to the tune of 17 lakh metric tons. This is due to short supply of raw cashew nuts and a higher price for raw cashew nut in the international market.

The data regarding the quantity of raw cashew production, their import and export in past five years is given in Table 1 and Table 2.

**Table 1. Production of Raw Cashew nut (Lakh MT)**

Year	Production of Raw Cashew nut (Lakh MT)
2013-14	7.36
2014-15	7.25
2015-16	6.70
2016-17	7.79
2017-18	8.17

Source: Directorate of Cashew nut & Cocoa Development, 2018

**Table 2. India's Export and Import of cashew nuts fresh/dried in shell**

Year	Export		Import	
	Quantity (in Ton)	Value (in Million USD)	Quantity (in Ton)	Value (in Million USD)
2013-14	3,900.77	4.03	776334	773.81
2014-15	15,637.75	21.79	933190	1087.16
2015-16	7,014.40	11.34	961665	1339.34
2016-17	9,773.37	19.45	774513	1346.58
2017-18*	5,542.90	10.34	654024	1418.63

Source: Directorate General of Commercial Intelligence and Statistics, 2018

(\* Figures of 2017-18 are provisional only)

With regard to steps for increasing production of raw cashew nut, Ministry of Agriculture and Farmer's Welfare under Mission for Integrated

Development of Horticulture and Rashtriya Krishi Vikash Yojana has drawn up strategies to increase domestic production by massive area expansion of cashew and replacing of senile cashew plantations with high yielding varieties in traditional and non-traditional states (Press Information Bureau, 2018).

## V. CONCLUSION

As described by Ashalatha (2006) India spends around ten billion rupees for importing of raw nuts from other countries. The same quantity can be produced domestically by bringing more wastelands into cultivation by following the latest cultivation practices. Policy level changes are required to adopt more integrated strategies to reduce dependence on imported nuts. The situation calls for cumulative efforts from production, processing and marketing sides. Also, policy arrangements are necessary for curbing the hoarding and exploiting practices of traders and commission agents who contribute to a larger extent towards higher procurement cost of nuts for the processors. It is evident from the cashew nut supply chain study that direct supply of raw nuts from village farmer to the processors is the shortest and most efficient supply chain. So authorities should make efforts in the future to adopt this supply chain for raw material procurement by processors.

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