CHAPTER 4

CASHEW PRODUCTION
SECTOR ANALYSIS
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4.1 Introduction

An analysis of any agricultural commodity needs to start with an understanding of the production and the market for the raw product as this greatly affects the processing and the subsequent activities of value creation in the value chain. In this chapter therefore, an analysis is made of the raw nut market in the international and the Indian market. This would help understand the position of the India as well as the various cashew-producing states in India on their influence in the cashew kernel market. It has implications in the context of strategic decision making for India as well as exporters from India.

This chapter starts with an understanding of the cashew tree and the conditions in which it grows. The understanding and the analysis of the raw cashewnut production and marketing in the competing countries follow this. Then, analysis of the cashew production in the country over the plan periods and the developments across the states are taken up. The state of cashew among various agencies involved in the production in terms of productivity is analysed to look at the agency contributions to the development of cashew. The role of domestic utilisation and imports on the exports of cashew kernels is discussed next. The average unit value of the imports and the trend in imports of rawnuts is analysed subsequently.

4.2 Cashew Tree

The cashew tree (refer annexure 1) flourishes in even the poorest of soils. It is therefore a possible cash crop prospect for those areas where other productive crops cannot grow. The cashew tree bears fruit (refer annexure 1) after three years but this first
crop yields only between three and four kilos. A good average crop for a mature plantation tree is around 10 kilos in East Africa and 30 kilos in India. Individual trees in homesteads have recorded more than a hundred kilograms. Plantation cultivation of the cashew tree generally produces the highest yields. However, most of the raw nut (refer annexure) harvests come from wild trees while plantation cultivation is an exception. Recommended densities for plantations, especially those in the planting stage, are a hundred trees per hectare of land in East Africa and two hundred trees in India.

The harvest season in some selected producing countries is as follows:

<table>
<thead>
<tr>
<th>Country</th>
<th>Harvest Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>India</td>
<td>March to May</td>
</tr>
<tr>
<td>Mozambique</td>
<td>November to January</td>
</tr>
<tr>
<td>Tanzania</td>
<td>October to November</td>
</tr>
<tr>
<td>Malagasy</td>
<td>August to December</td>
</tr>
<tr>
<td>Kenya</td>
<td>October to November</td>
</tr>
<tr>
<td>Senegal</td>
<td>April to May</td>
</tr>
<tr>
<td>Central America</td>
<td>May to July</td>
</tr>
<tr>
<td>Bahamas, Cuba</td>
<td>May to July</td>
</tr>
<tr>
<td>West Indies</td>
<td>May to July</td>
</tr>
<tr>
<td>Brazil</td>
<td>May to July</td>
</tr>
</tbody>
</table>

Harvest periods in East Africa fall in successive months after India's harvest. Thus, India has succeeded in minimizing inventory costs and storage damage. The fruit (refer annexure 1) of the cashew tree consists of the nut with a "false" fruit. Yet only the nut is commercially utilized, except in such small crop countries as Senegal, Cuba and Northern Brazil. It is, however, extremely difficult to use the whole fruit commercially as the "apple" ripens before the nut. The nut cannot be detached from green fruit. If done so, its quality would not be acceptable commercially.
The false fruit, the "apple," can be used for jam making, for fruit juices and for making alcoholic beverages. It can, of course, also be eaten as it is. Actual harvesting time has to be very accurate if the whole fruit is to be utilized. Only on plantations can such full utilization be considered. After careful drying, the nuts can be stored for as long as two years without much deterioration. The raw nuts are packed in 80-kilo gunny bags. Maximum moisture content should not exceed 8 per cent. Bags should be stored under shelter and in dry conditions.

Nuts consist of the following elements, but with considerable variations in percentages, depending on the region, the climate, type of trees, etc.

- **Kernel** - about 22-25 per cent by weight
- **CNSL** - about 24 per cent by weight
- **Skin** - about 2 per cent by weight and
- **Shell** - about 50 per cent by weight

In Africa, the average yield of kernels is about 21 to 24 per cent of the raw-nut weight, while in India it is slightly higher. Indian processors are able to get up to 70 per cent whole kernels. In Africa the recovery is up to 65 per cent by mechanical processing. However, the difference in percentage of the output of whole kernels produced by the manual and by the mechanical method is negligible; the determining factor is the origin of the nut. Kernel halves of the Indian cashews are more tightly attached than the African varieties. It is therefore possible to obtain up to 70 per cent of whole kernels from Indian grown cashew. Even in the best-organized Indian factories hardly 60 per cent recovery can be obtained with the African varieties of the nut, especially those of Tanzania and Mozambique. Furthermore, the percentage may vary.
from year to year according to the weather conditions, which can affect the ripening of the nut and consequently its treatment.

Although cashews are produced in thirty-four countries worldwide, five countries alone traditionally account for 83 percent of cashew production and for about 96 percent of the cashew kernel exports. These five countries are India, Brazil, Mozambique, Tanzania, and Kenya. In general, India and Brazil export kernels and cashew nut shell liquid. But Tanzania, Mozambique, and Kenya export raw nuts, the processed product as well as the by-product. Increasing quantities of raw nuts, kernels and CNSL are now being exported from South East Asia including Indonesia, Thailand, Vietnam, and Myanmar.

While the area under cashew nut production has been increasing in the five major producing countries in the last three decades, the productivity significantly decreased between 1975 and 1987. The largest fall in productivity happened during 1980-84. The major causes for decline in productivity were

1. Allocation of marginal and low productive areas for cashew production.

2. Raising of plantation using unselected seedlings instead of vegetatively propagated material.

3. The poor agronomic practices followed in managing the crop seriously affecting the growth and development of the plantations.

4. Unfavourable climatic conditions: Persistent drought during the early 1980’s in Brazil resulted in low productivity. Cashew requires dry weather with clear skies during flowering and fruit setting stages to ensure good harvest.
Tanzania and Mozambique are the key East African countries in raw nut production. Their production in the mid eighties declined leading to a 20 percent drop in world production. The causes for decline in raw nut production in the East African countries have been a complex interaction of adverse effects of bad agronomic and climatic factors and poor marketing and pricing systems and the civil war in Mozambique.

Apart from the new competitors in raw nut production in South East Asia as mentioned earlier, other minor producers are Madagascar, Angola, Ivory coast, Nigeria, Philippines, Guinea Bissau, Togo, El Salvador and the Dominican republic. The Edible Nut market reports indicate that China with an estimated current annual production of around 3000 tonnes has a considerable potential for cashew development.

4.3 Raw Cashew Nut Production & Marketing - Country Profiles

4.3.1 Brazil

The background to the cashew industry in Brazil is very different to the backgrounds of the industries in East Africa and India. In Brazil all land is privately owned. In the case of East Africa (with the exception of Kenya, where most of the land is privately owned) the land belongs to the State and farmers have rights of farming only and in India at least some land (forestry areas) is publicly owned.

In Brazil, the smallest holding is about 50 hectares and the largest some 15,000 to 20,000 hectares (the whole area may not be planted to cashews). In East Africa and India individual farms generally range from a few to say 10 hectares (again not all planted to cashews); State enterprises are considerably larger.

No external aid funds have been applied to the Brazilian industry, such as the World Bank Multi-State programme in India or the World Bank programme to install
processing facilities in Tanzania. However, there are various schemes to stimulate development of the NorthEast Region of Brazil, which is the region where cashews grow, from which the cashew industry can benefit.

The following Government Departments and agencies play a role in the cashew industry:

(a) CACEX (Carteira de Comercio Exterior). This is the Foreign Trade wing of the Bank of Brazil. Exporters have to advise CACEX of sales of products and prices made. If prices fall below the reigning world market price the exporter is required to explain why; CACEX has the power to set minimum export prices and the power has occasionally been used. Also CACEX, in collaboration with the Ministry of Agriculture, is responsible for checking the quality of kernels exported on samples taken at ports.

(b) CFP (Comissao de Financiamento da Producao) and DAE (Departmento de Analises Economias). These are agencies within the Federal Ministry of Agriculture. Their main role in relation to the cashew industry is to set minimum producer prices for raw nuts. With many crops these prices are calculated in relation to costs of production; with cashews, however, they are calculated in relation to world market prices for the products and costs of processing and marketing.

(b) Instituto de Planejamento do Ceara (Institute of Planning in Ceara State). This is a Ceara State Government agency responsible for research and planning for Ceara State.
(d) EPACE (Empresa de Pequisa Agropecuria de Ceara). (Enterprise for agricultural Research for Ceara State). Although an "enterprise" this is a publicly funded research organisation. Its head office is in Fortaleza and its research station is at Pacajas, about 40 km south east of Fortaleza.

(e) SUDENE (Superintendencia de Desenvolvimento du Nordeste Coordinadoria de Agroindustry). (Organisation for Coordination and Development of Agro-industry of the Northeast Region of Brazil). This is an agency of the Federal Ministry of the Interior.

The Northeast region, in which all the current and potential areas for cashews are located, is the least developed region of Brazil. SUDENE was set up in the early 1960's. Enterprises located in the NorthEast could opt to deduct 50% of their tax liability for investment in industrial activities located in the region. Huge funds were built up under this scheme. In 1974 the fiscal incentives were re-formulated and various more closely defined funds were created. FINOR (NorthEast Investment Fund) is important in relation to cashews.

(f) IBDF (Instituto Brasileiro de Desenvolvimento Florestal) - (Brazilian Institute for Forestry Development). At the same time as the FINOR fund was set up a further fund, FISET (Federal Sectorial Investment Fund) was created. This is to assist in forestry development. IBDF is the adviser to the Bank of Brazil. Initially cashews were excluded from this scheme, but later were incorporated.
Before these individual funding schemes were formulated large areas of cashew were planted. A settlement scheme, COOPERMEL (Cooperativa Agricola Mista de Colonizacao de Serra do Mel), in Rio Grande do Norte State was initiated to settle 1,196 disadvantaged rural dwellers on 61,000 hectares of land, of which some 17,000 hectares will ultimately be planted to cashew trees.

**Primary Marketing**

The CFP in Brasilia determines the minimum price for raw cashew nuts annually. The raw nuts may be marketed in two stages. Growers may make an initial sale to the Bank of Brazil, or certain other banks, the payment being a loan to the grower concerned and the produce being deposited in a store nominated by the Bank. The grower may, any time within the next 180 days, resell his produce at a better price if he can obtain one. Having completed such a sale the new purchaser takes delivery and the grower repays his loan to the Bank. In case of a second sale not taking place the grower keeps the initial loan as full payment and the Bank/s become owners of the produce. Any trading loss, which the Bank/s make, is regarded as a necessary expenditure for social reasons. Growers may bypass the Bank/s guaranteed price system and procedure, selling direct to processors or to middlemen. This occurs when trading prices are above the guaranteed minimum.

There are stated quality standards for raw nuts, required as in other countries like a good green colour, absence of disease and a low moisture content. In practice, however, processors are not very selective because the processing capacity greatly exceeds the supply. The apple as well as the raw nut is an important commodity in Brazil. Some factories accept the apple and nut unseparated, particularly if they have
both rawnut and apple processing facilities. Others will accept only separated apples and nuts, or only one of the items.

4.3.2 Tanzania

Until 1973, trading in cashew products was the responsibility of the National Agricultural Produce Board, which also had trading responsibility for food crops. The Cashews Industry Act of 1973, which became effective in October 1973, created the Cashews Authority of Tanzania (CATA). It was conceived as a parastatal organisation with monopoly powers for all activities connected with the cashew industry, subject to the overriding authority of the Minister of Agriculture.

CATA has a Board of Directors, numbering 16, who are appointed by the Minister of Agriculture, and represent the Minstrels of Agriculture and Finance and Planning, and the Regions and districts within which CATA is operation. CATA Headquarters is in Mtwara and there are branches in the Regions, the main subsidiary branch being at Dar-es-Salaam. Organisationally, CATA has a General Manager who is appointed by the President, and five departments each with its own Director and subsidiary staff. The Departments were Crop Development and Procurement, Marketing and Planning, Finance, Manpower Development and Administration, Factory Operations and Development.

Apart from the creation of CATA the main features affecting the cashew industry in Tanzania in recent years have been:

(a) the introduction of the villagisation policy, which has been implemented in cashew growing areas mainly from the mid-1970's. This is a policy requiring the regrouping of rural dwellers into compact village units along existing or newly opened roads. This caused movement of many growers'
long distances from their former cashew farms and a consequential decline in the quantity of raw cashewnuts collected.

(b) a producer pricing policy which, until the 1980/81 season, resulted in a fall in relative prices for raw cashewnuts compared with those of food crops, and

(c) Two loans by the World Bank, the main feature of which was the building in two phases of eight factories, bringing the total to 12, with an overall capacity of 113,000 tonnes of rawnuts per annum.

**Primary Marketing**

CATA is entirely responsible for primary marketing, except the determination of the producer price. CATA, main interest is its own viability and therefore it sets the producer price level in relation to its earnings from exports and its overall costs. The MD of the Ministry of Agriculture is concerned with setting a price for growers, which is both, profitable and inducement for further growth of cashew.

Various procedures have been used by CATA for primary buying in the past. However, the current system is that two graders (village representatives, not CATA staff) are appointed in each village. They advise CATA of expected quantities and CATA arranges a schedule for purchasing, advances money for purchase and provides transport. The village agents receive a small fee.

These agents are responsible for ensuring proper grading when purchases are made. Standard grade should be mature, dry for the area and an even gray colour. Undergrade may be discoloured, pitted or misshapen, but not rotten.
CATA collects the nuts from villages periodically and now transports the bulk to the nearest factory. Besides grading by Standard and Undergrade, the rawnuts are also grouped by area of production as below:

CDJKL

AFGHIS Standard grades

BE

DSM and

Undergrade - all areas

The letters relate to districts and the climates of these districts. CDKJL come from the driest districts and DSM the wettest with the others being intermediate. This grouping is related to the export trade in rawnuts, with discounts applying to the wetter groups - it is becoming less relevant as this trade diminishes.

4.3.3 Mozambique

Primary Marketing

Primary marketing was carried out by the private sector before independence. It consisted of many small shopkeepers in rural areas who were generally agents for, or linked in a less formal way to, bigger private traders at district level. However, barter for consumer goods than sale of rawnuts for money (and subsequent purchase of consumer goods) was the general practice. The traders were largely Portuguese, Indians and Pakistanis. Around the time of Independence many traders, particularly the Portuguese, left Mozambique, and the exodus, particularly of Indians, has continued since. Also the supply of consumer goods has declined seriously since Independence while their value has inflated enormously. The value of consumer goods,
ranging from cooking oil to bicycles, has increased five to 10 times since Independence, while the value or raw cashewnuts have only doubled.

The basic structure of the primary marketing system has thus been very seriously disrupted since Independence. Growers still want barter goods than cash; moreover, even where barter goods are available the "purchasing" power of raw cashewnuts has declined seriously. Private Mozambique traders have replaced some former expatriate traders while the cooperative shops do not yet fill the gap. Moreover, neither private traders nor the cooperatives have sufficient consumer goods.

The consequence of these changes is that growers are no longer collecting all the raw cashewnuts produced. Moreover, of what is collected a greater proportion is being used in the household, at least in the south, particularly in replacement of groundnuts whose supply has declined. Groundnuts are a major constituent of traditional dishes such as "mathappa" (a sauce of cassava leaves, crushed groundnuts and fish). The quantity so used could represent as much as 25% of the crop at present, at least in the south of the country.

All the rawnuts now collected for commercial purposes are delivered to processors for processing within Mozambique. Formerly, sizable quantities were exported, mainly or exclusively to India.

4.3.4 Kenya

Kenya has the smallest crop of the three East African countries. Various Government Ministries and other public sector organisations play an important role in the cashew industry. The Ministry of Finance and Planning is responsible for drawing up final Development Plans. The Ministry of Agriculture is responsible for the preliminary preparation of Development Plans and for research and extension. The
National Cereal and Produce Board is the official buyer of rawnuts, though it does this buying through agents.

**Primary Marketing**

Cashewnut is a scheduled crop in Kenya and the National Cereals and Produce Board (NCPB) is the agency responsible for purchasing it. The NCPB's agents are the KDCU for the nuts procured in Kilifi District and the Malindi area, and private traders in Kwale and Lamu Districts. Collection of nuts is said to be more thorough in Kilifi than in Kwale because population in Kilifi is higher and therefore the need for money is greater. The Kwale nuts are said to be generally bigger than those in Kilifi.

There are two grades - FAQ (Fair Average Quality) and UG (Undergrade). FAQ nuts must be free of blemishes and rain damage and have moisture content of 7% or less. UG nuts may be rain damaged, wrinkled and spotted, but not rotten. UG nuts come mostly from Kwale District. Because of this and the fact that the Kilifi cashew plant has been designed to process medium size nuts, the bulk of the Kwale nuts are generally exported.

**4.3.5 Marketing across competing countries**

In India, mainly the Kerala State Co-operative Marketing Federation at controlled prices does buying in Kerala State (major cashew producing state), elsewhere the private sector buys the crop. In Kenya, there is one buyer - the National Cereals and Produce Board, which buys through agents. In Mozambique, private traders and Co-operatives procure the crop, but the former has largely disappeared and primary marketing has collapsed to a marked degree. This has been due to the absence of exchange goods in a country where barter rather than cash trading is the norm. In
Tanzania, the Cashew Authority of Tanzania (CATA) is the sole buyer and it operates through village agents; in Brazil, the private sector buys (either processors or middlemen) though there is a guaranteed minimum price set by Government, which at present is well below trading prices.

There is a marked difference between the producer prices paid in India and those paid elsewhere. There would appear to be two main explanations –

1. the cost of processing in India is lower than it is elsewhere which allows Indian processors to pay more for the raw nuts, and

2. Producer prices in India (whether set by the State Government as in Kerala, or freely negotiated as elsewhere) are undoubtedly at the highest level possible in relation to world prices for kernels.

4.4 Cashew Research: A Comparison with Competing Countries

Agricultural research programmes exist in all countries, however the one in Mozambique is very restricted. In most countries there had been a start some years ago, then a lapse and more recently resumed and broader based programmes. The programmes are similar in all countries with the main aspects being identification and selection of improved mother trees, evolvement of clones, seeking the best methods of vegetative propagation and chemical control of pests and diseases. India’s programme is the longest established and probably the most comprehensive. Both Kenya and Brazil have interesting results emerging. Tanzania’s programmes is the most recent of all, but she has interesting results on two mother trees imported from Sri Lanka. Clearly some time, possibly 3 to 5 years, must elapse before complete proven “extension packages” emerge from the current research programmes and there then remain the problems of extension itself and adoption by farmers of the recommendations.
The extension support is generally rather weak in all countries, due to one or more of the following reasons: lack of extension staff, poor quality of extension staff, inadequate expenses for extension staff and absence of an extension package.

4.5 Raw Cashew Nut Production Analysis

Raw cashew nut is the raw material that determines the exports of cashew kernels. To be competitive in the international market, raw nuts have to be produced internally at a lower cost in each of the countries, which are into cashew kernel marketing or be able to be imported at a competitive price from other countries. India is both a producer and importer of raw cashew nut. In order to understand the position of India in the production of raw nut in the international market, we need to look at the developments in the front.

Source: FAOSTAT Database 2000
India as one of the major cashew growing countries increased its total share of the raw cashew production in the world to 50% by the year 1955. It lost the total share of the raw cashew production in the world to the level of 17.6% by the year 1975. Brazil with almost no contribution by 1955 has risen to command about 43.7% of the total share of the raw cashew produced in the world by 1990.

Another important trend is the emergence of several non-traditional cashew producers in raw cashew production. This effect would be noticed in the years to come. It can be seen from the figure above that while the Indian area of cashew as well as the production have plateaued, those of the world overall have increased. This is inspite of our preeminent position in both area and production. This clearly gives us the picture of slackness in area and production expansion in India. The economic yield of the cashew plantations start form the tenth year of planting and extend upto 25-30 years. It is therefore necessary for India to continue its efforts of encouraging raw cashew production to sustain itself as an important competitor in the world trade.

4.6 Cashew Development in India

Cashew provides useful economical vocational avenues to nearly 7.5 million rural families under farming sector and nearly 0.3 million families in industrial sector. Yet, its unique features remain exploited only to a limited extent in our country.

In the post independence era (i.e. after 1947), till the end of 3rd Plan, no Central agency was there to devote an undivided attention towards the development of cashew in our country. It was only in 1966 the Directorate of Cashewnut Development came into being. A Central Cashewnut and Spices Committee looked after the bifurcation of research and development from ICAR. The developmental part was taken over by the Department of Agriculture of the Union Ministry of Agriculture. This marked the first
step towards the integration and coordination of cashew development in association with the development agencies of the State and research institutions. No systematic efforts towards the development of cashew was there with any State Development agencies except for certain scattered attempts to develop cashew plantations with non-descript seeds and seedlings and the plantations supported with meagre financial help. The area under cashew while establishing the Directorate of Cashewnut Development (1966) was 2.40 lakh ha with the annual production of 1.00 lakh MT. Productivity was as low as 400 kg/ha.

Efforts of the Directorate during the three decades of its existence did help in increasing the area three fold (6.35 lakh ha) and production by four folds (4.2 lakh MT). Productivity also increased to the level of 725 kg/ha by registering 4% annual growth. However from the very beginning the cashewnut industry in India was built up with primary dependence on import from East African countries. The level of imports of rawnuts of 32,000 MT in 1940's gradually increased to more than 2 lakh MT in 1970's and declined to the level of 11,000 MT from the beginning of 1980's. There was a gradual increase in import again from the middle of 1980's and has touched again more than two lakh MT by the middle of 1990's. The indigenous production could not match the industrial requirement during these periods. At many instances the level of participation of indigenous production in export has remained near about 50% and less, unless the import was drastically low.

Cashew cultivation 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, Orissa and West Bengal along the East Coast. To a limited extent
Madhya pradesh, Manipur, Tripura, Meghalaya and Andaman and Nicobar Islands also take part in the cultivation and production of cashew. The Departments of Agriculture/Horticulture/Soil Conservation have taken up measures for development of cashew in privately owned cultivators' field. In certain instances, Government lands also have been brought under cashew. The Forest Department, as a part of afforestation measures, has taken up cashew in denuded forestlands. With the formation of Cashew Corporation and Plantation/Development Corporations, such public sector areas have been transferred to such Corporations.

According to the official statistics of 1995-96, Kerala and Andhra Pradesh rank first with 1,18,000 Ha closely followed by Orissa with 1,01,800 Ha. Karnataka ranks third and Tamil Nadu and Maharashtra rank 4th and 5th in respect of area. Goa, the land of introduction of cashew into India, though ranks 6th compared to its geographical size, cashew occupies as the major crop of the State. In the rest of the States, the area is only in thousands. With regard to the production of rawnut, Kerala is the highest with 1.4 Lakh MT contributing 33% of the national production. Andhra Pradesh, which shares the 1st rank with Kerala in respect of area, is the 2nd largest producer. The production in Andhra Pradesh is around 72,000 MT, which is almost 50% of Kerala. Orissa being the 3rd rank holder in area is the 4th rank holder in respect of production with 43,000 MT. Karnataka ranking 3rd in area is the 5th in production. Tamil Nadu occupying the 4th position in area is the 6th in production.

In respect of productivity, Maharashtra ranks 1st (1440kg/Ha) closely followed by Kerala and Andhra Pradesh (1000kg/Ha). In the rest of the States the
productivity is below 1000 Kg/Ha., particularly in Karnataka and Goa the productivity is 550 Kg and less, whereas in Orissa it is 720 Kg and in Tamil Nadu 330 Kg/Ha.

4.6.1 Developmental efforts on cashew across plan periods

Since the formation of Directorate of Cashewnut Development, the Cashew Development Programmes got integrated into the five-year Plan activity. The development projects formulated, implemented, monitored and modulated during each of the Five Year Plan activities, primarily consisted of programmes for increasing the production of raw cashewnuts, improving the marketing and pricing structure and exploration and exploitation of by-product utilisation with a specific objective of improving the economical status of the farming sector which is providing greater impetus towards rural economy and thereby towards a substantial improvement to the national economy of India at large.

A concerted effort for the development of cashew was started only from the IV Plan onwards. This is the period that witnessed the formation of an All India Coordinated Cashewnut Improvement Project to take up intensive research on cashew. The respective development departments of the States and the Forest Departments started execution of systematised development programmes for area expansion. This was the time when a concrete support of research on quality planting materials was totally absent. Area expansion, therefore, had to rely on seeds and seedlings. In the absence of any definite variety, the high yielding mother trees available in Research Institutes and in the plantations of private and public sectors were identified and a progeny orchard in different regions were established for the collection of seeds from such stockings. The best nutritional effect and crop protection measures as was available with the research during this period was advocated as a package for scientific upkeep of the plantations.
However, at many instances the progeny orchards so established did not provide the
required precocity to the progenies. Central Govt. participated in this venture by
providing grant-in-aid towards planting materials and other nutritional and protective
inputs. It also came up with intensive measures for the agronomical upkeep of the
yielding plantations. The Centre also supported production and distribution of airlayers,
the first ever known technique for clonal propagation, during this period.

The Fifth five-year Plan continued the strategies of the 4th Plan. The
formation of Cashew Development Corporations or Forest Development Corporations
including cashew to look after the public sector areas was the salient strategic approach
the 5th plan did witness. Apart from the above, programmes for conversion of seedlings
into clones with in-situ grafting techniques were another salient change of the
developmental activity. The airlayer production and their establishment in the field and
the in-situ clonal conversion did not provide adequate impetus to production due to their
inherent field problems.

A World Bank aided project for cashew was implemented both under
private and public sector areas in four major States of Kerala, Karnataka, Andhra Pradesh
and Orissa during Sixth five-year Plan. Due to the absence of any specified variety or any
technique for multiplication, seedlings were the only resort heavily relied upon for the
coverage under this massive project. Establishment of clonal gardens was another
significant change towards improved planting material production. Although no definite
varieties were there, propagation technique (stone grafting) was found successful to a
limited extent. Taking this into advantage, few clones of the promising varieties in the
pipelines were stocked in the clonal orchards with an objective of collecting the clonal
seeds for plantation development. This measure due to its improper conception of its message by the implementing agencies became a futile attempt.

During the 7th plan a fairly better outlay became available. However, enough experience had been gained in the selection of seeds for area coverage. As in the previous plan periods, an attempt towards the generation of good planting material was again there. This period towards its end obtained nearly 25 high yielding varieties suited to different agro-climatic tracts. Multiplication of these varieties through scion banks established during this period was the first step that initiated the development of clonal plantation of the future years. Clones of these varieties were stocked in such scion banks for obtaining adequate scion harvest. This programme in the later part got amalgamated with the regional nursery programme of 8th five-year Plan. Softwood grafting technique also got standardised by this period and its massive exploitation became possible from 8th Plan.

During the 8th five-year Plan, the allocation for horticulture in general and particularly for cashew was the highest outlay got ever before. Encouraging situation in the clonal material build up drastically changed the developmental scenario. Variety wealth of cashew increased from 25 to 30 high yielding varieties. Standardised packages on nutrition, crop protection, tree management, canopy regulation with high-density concept and individual tree management, soil and water management provided by the research further accelerated the horticultural concept for cashew. Seeds and seedlings were abandoned forever and clones took up their place.

A strategic change towards agri-horticultural management practices and transfer of technology also took place. Establishment of model clonal gardens and
training programmed for farmers and field oriented executional functionaries became an integral part of transfer of technology. Publicity on crop promotion was another turn towards disseminating the scientific information to the farming community. Besides area expansion, replanting of the old, senile and unthrifty plantations was introduced on a modest scale. The 8th five-year Plan covering above-mentioned approach had an outlay of Rs. 48 crores.

Strategies of development of cashew narrated above are briefly analysed in terms of their performance in the field. From 1966-67 to 1979-80, the area expansion was under the State sector supported with State finance. Participation of Centre through Centrally Sponsored Scheme was only to a limited extent particularly towards intensive measures and production of planting materials like layers, clonal seeds etc. From 6th Plan, the Centre financed both extensive and intensive measures and participation of the State with their share of finance was practically not available. The Central share initially in 1966-69 was Rs.18.00 lakhs which gradually increased to Rs. 195 lakhs, Rs.544 lakhs and Rs.762 lakhs during the respective subsequent plan periods. In all the plan periods, utilisation of Central assistance ranged from 50 to 100%.

4.6.2 Impact of developmental measures

The following table gives an idea how the developmental efforts have influenced the export, import, local consumption and processing set up.
### Table 4.1

**Development of cashew over the last three decades**

<table>
<thead>
<tr>
<th>S.No</th>
<th>Aspects</th>
<th>Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Area under cashew (lakh ha)</td>
<td>2.41</td>
</tr>
<tr>
<td>2.</td>
<td>Production (lakh MT)</td>
<td>1.00</td>
</tr>
<tr>
<td>3.</td>
<td>Productivity (kg/ha)</td>
<td>400</td>
</tr>
<tr>
<td>4.</td>
<td>Export (kernels in 000 MT)</td>
<td>54</td>
</tr>
<tr>
<td>5.</td>
<td>Import (Rawnut-lakh MT)</td>
<td>1.75</td>
</tr>
<tr>
<td>6.</td>
<td>Indigenous production in export (% of export)</td>
<td>60</td>
</tr>
<tr>
<td>7.</td>
<td>Internal consumption (% of total kernels produced)</td>
<td>-</td>
</tr>
<tr>
<td>8.</td>
<td>No. of processing units</td>
<td>275</td>
</tr>
</tbody>
</table>

(Figures in bracket denote the annual growth rate in percentage for each decennial period).

Source: Indian cashew facts and figures CEPC 1994 and Indian cashew statistics CEPC 1997

During the last three decades the developmental measures have amply supported the increase in area, production, productivity, export performance, reduction in import and increase in processing set up. Only during the current decennial period, import has increased so also the internal consumption.

There are 771 processing units existing in the country, out of which 516 (67%) are under organised sector and 255 (33%) are under unorganised sector. Out of the total production of 4.2 lakh MT, 70% (2.94 lakh MT) is drawn by organised sector and 30% (1.26 lakh MT) is drawn by unorganised sector. The organised sector besides utilising the 70% internal production also imports raw cashewnuts from abroad and average import during the four years of eight plan has been about 1.76 lakh MT. This sector is the one that exports cashew kernels apart from diverting a part of the totally processed kernels for local consumption.

Of the totally processed cashew kernels, 53% is exported and 47% is locally sold by the organised sector. The unorganised sector, which utilises 30% of the...
indigenous production, does not take part in export and sell all the processed kernels internally. The performance of these sectors during the five years of 8th plan was assessed. It was found that the growth rate of the requirement of kernels for export and internal consumption works out to 11.25% per annum by the organised sector and 2% per annum for the unorganised sector. During the five years of 8th Plan, there has been an average growth rate of import of 4% per annum. The financial, administrative and resource constraints will play against taking up an ambitious programme to bridge the gap of three lakh MT within a five year period. Therefore, the import at the present rate will be necessary to keep the industry alive.

Table 4.1 clearly reveals that there has been gradual increase in area, production and productivity of cashew in India during the subsequent decades. However there was substantial decrease (about 30 percent) in export of kernel during 1985-86 from 1975-76. Import of rawnut also dwindled during 1975-76 and 1985-86. Decrease in export is mainly attributed to the lower production of kernel due to lower import of rawnuts during 1985-86. The decrease in import during seventies and eighties is mainly due to the fact that Brazil, Mozambique, Tanzania, Kenya and other east African countries had taken up large scale mechanised processing of raw nuts during the period. There has been gradual fall in percentage of export and increase of domestic consumption to the total kernel produced in India after 1975-76 and it is due to enhanced internal demand for cashew kernel.

During the last decade, processing units have come up in a large scale and in 1995-96, there were 771 units and their installed capacity was about 8 lakh tonnes. Rawnut availability to these units during 1995-96 was 6.35 lakh tonnes (both internal
production and imported). So there was a gap of 1.65 lakh tonnes to feed the processing units. There is unlikely to be an increase in the import of rawnut as most of the cashew nut producing countries like Brazil, Kenya, Mozambique, Vietnam etc. have restricted their rawnut export mainly to encourage their own domestic processing units. Thus the gap is to be filled by increasing the internal production.

Import of rawnut was 16.06 thousand tonnes during 1981-82 and it dwindled to 1.49 thousand tonnes during 1982-83. It peaked a range of 2.28 lakh tonnes during 1994-95. Compound growth rate of quantity of raw nut import during 1981-82 to 1995-96 is 27.37 percent indicating that processors in the country have tremendously expanded their processing capacity and the internal production could not meet their demand, thus forcing the processors to rely heavily on import of rawnuts. Though there is fluctuations in rawnut availability in the global market, still Indian processors are able to meet their rawnut requirements from Guinea Bissau, Ivory Coast, Nigeria, Malagasy, Indonesia and some of the West African and Southeast Asian countries. India’s increased dependency on import and uncertainty of availability makes the processing units vulnerable. Also imports drain out valuable foreign exchange.

4.6.3 Present status of cashew plantations in India

The status of the cashew plantations in the country has a great bearing on the potential growth of the raw nut production in the country. The status need to be understood in terms of the age of the plantations as well as the area under each type of agency so as to have a clear idea of the present status of the plantation. This when compared with our position in the international raw nut production context would provide us the right direction for the growth of cashew production.
In the absence of concrete technological support till the middle of 1980s, the production ability of our plantations languished. Nearly 1.2 lakh ha plantations at present in the country have crossed 40 years of age exhibiting the least productivity. Plantations in the age group of 35-40 years with already set in senility are nearly 87,000 ha. Besides plantations waiting to cross the age of 30 years during 9th Plan are around 80,000 ha. The production decline estimated @2% per annum per unit area will be conspicuous towards the turn of the century.

The study of the following dimensions would be useful for the purpose of visualizing the future status of the raw cashew nut production

1. The age of the plantations,
2. the nature of holding of the plantation i.e. whether they are in the public, private or the government corporations,
3. the area under each of these forms of ownership as well as
4. the production and productivity

These dimensions of the cashew plantation have a crucial impact on the supply side of the cashew industry in the provision of the right raw material in the required quantities at the right palace for the consumption of the processing sub sector involved in the value addition of cashew at the primary level.
Table 4.2

Status Of Cashew Plantation In India During 1995-96 (Age And Agency Wise)

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Agency</th>
<th>Area ' 000 Ha</th>
<th>Production</th>
<th>Pdvty Kg/Ha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 15 years</td>
<td>Private Forest Corp</td>
<td>143.50(22.60)</td>
<td>88.00(20.95)</td>
<td>600</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>169.50(26.69)</td>
<td>102.00(24.28)</td>
<td></td>
</tr>
<tr>
<td>15-30 years</td>
<td>Private Forest Corp</td>
<td>120.35(18.95)</td>
<td>148.00(35.24)</td>
<td>1035</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>163.80(25.79)</td>
<td>186.00(44.28)</td>
<td></td>
</tr>
<tr>
<td>More than 30 years</td>
<td>Private Forest Corporation</td>
<td>205.45(32.35)</td>
<td>100.00(23.81)</td>
<td>440</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>301.70(47.51)</td>
<td>132.00(31.43)</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>Private Forest Corporation</td>
<td>469.30(73.90)</td>
<td>336.00(80.00)</td>
<td></td>
</tr>
</tbody>
</table>

Source: Directorate of cashew development, Cochin.

Table 4.2 reveals that 74 percent of the area under cashew are under private ownership and are responsible for 80 percent of the total production. But the most disturbing factor is the fact that about 48 percent of the area under cashew has plantations over 30 years of age. These plantations contribute only about 31 percent of the total production and productivity is only 440 Kg/ha i.e. about 2.2 Kg/tree (assuming 200 plants per hectare). The plantations with trees having 15-30 years age group constitute only about 26 percent of the total area. However these plantations contribute more than 44 percent of the national output with a productivity of 1035 Kg/ha. The area under cashew plantations with recent origin is about 169.50 thousand hectares and their contribution is about 24 percent of the national output with an yield rate of 600 Kg/ha.
The only hope to substitute the reduction in production due to these senile areas is the clonal plantation of 8th five-year Plan. The set in senility has been detrimentally playing its role in the actual assessment of production in the country.

4.6.4 Raw Cashew Position across Different States in India

Agriculture is a state subject in the Indian context. Raw cashew nut production therefore is to a great extent also dictated by the policies that are followed at the state level as well as the availability of the right agroclimatic conditions for the growth of cashew. Moreover the importance of a crop like cashew form the point of view of the country need also to be realised by the various states. It would be helpful to understand the development of production and area across the various states. It would also help us know if there has been a diversification and expansion of the area of cashew.

The main cashew growing states in India are Kerala, Karnataka, Tamilnadu, Andhra Pradesh, Goa and Orissa. These are states on the east and the west coast of India which provide the ideal climatic conditions for the growth of cashew trees.
During 1965-66, area under cashew was 2.40 lakh hectares which subsequently increased to 5.18 lakh hectares in 1985-86 and then to 6.35 lakh hectares in 1995-96, thus recording a rise of over 160 percent during the last three decades. During 1965-66, Kerala had the highest area under cashew (0.87 lakh hectare) followed by Tamilnadu (0.70 lakh hectare), Goa (0.32 lakh hectare) and Andhra Pradesh (0.21 lakh hectare). Kerala and Tamilnadu with their most congenial climate had the highest area under cashew during the beginning of the plan periods. However, during 1985-86, Kerala, Tamilnadu and Goa's share to the national acreage reduced to 29.73%, 18.28% and 8.15% respectively.

Acreage share of all other cashew producing states gradually increased during the period. During 1995-96, area under cashew in the states of Kerala and Tamilnadu declined to 1.19 and 0.77 lakh hectares from 1.54 and 0.95 lakh hectares respectively during 1985-86. The decline in area under cashew in these two states is mainly attributed to large-scale removal of old senile plantations. During 1995-96, highest area under cashew was in Kerala followed by Andhra Pradesh (1.18 lakh hectares), Orissa (1.02 lakh hectares), Karnataka (0.84 lakh hectares), Tamilnadu (0.77 lakh hectares), Maharashtra (0.67 lakh hectares) and Goa (0.50 lakh hectares). The compound growth rates of area under cashew during 1981-82 to 1995-96 for all the cashew growing states as well as the nation are found to be positive except that of Kerala and Tamilnadu (Table-5) and varies from 0.61 percent (Goa) to 7.51 percent (Maharashtra). On an average, area under cashew in the country is increasing by 1.55 percent per annum.
Table 4.3

Production Of Cashew In Different States Of India 1965-66 To 1995-96 (Production In '000 Tonnes)

<table>
<thead>
<tr>
<th>States</th>
<th>1965-66</th>
<th>1985-86</th>
<th>1995-96</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kerala</td>
<td>98.00</td>
<td>128.90</td>
<td>140.00</td>
</tr>
<tr>
<td></td>
<td>(68.29)</td>
<td>(54.97)</td>
<td>(33.51)</td>
</tr>
<tr>
<td>Karnataka</td>
<td>6.00</td>
<td>20.93</td>
<td>37.60</td>
</tr>
<tr>
<td></td>
<td>(4.18)</td>
<td>(8.93)</td>
<td>(9.00)</td>
</tr>
<tr>
<td>Goa</td>
<td>2.00</td>
<td>10.76</td>
<td>17.80</td>
</tr>
<tr>
<td></td>
<td>(1.39)</td>
<td>(4.59)</td>
<td>(4.26)</td>
</tr>
<tr>
<td>Maharashtra</td>
<td>2.70</td>
<td>15.79</td>
<td>69.00</td>
</tr>
<tr>
<td></td>
<td>(1.88)</td>
<td>(6.73)</td>
<td>(16.51)</td>
</tr>
<tr>
<td>Tamilnadu</td>
<td>22.00</td>
<td>11.80</td>
<td>30.90</td>
</tr>
<tr>
<td></td>
<td>(15.33)</td>
<td>(5.03)</td>
<td>(7.40)</td>
</tr>
<tr>
<td>AndhraPradesh</td>
<td>10.00</td>
<td>26.81</td>
<td>71.70</td>
</tr>
<tr>
<td></td>
<td>(6.97)</td>
<td>(11.43)</td>
<td>(17.16)</td>
</tr>
<tr>
<td>Orissa</td>
<td>1.50</td>
<td>16.88</td>
<td>43.00</td>
</tr>
<tr>
<td></td>
<td>(1.05)</td>
<td>(7.20)</td>
<td>(10.29)</td>
</tr>
<tr>
<td>West Bengal</td>
<td>1.30</td>
<td>2.32</td>
<td>7.00</td>
</tr>
<tr>
<td></td>
<td>(0.91)</td>
<td>(0.99)</td>
<td>(1.68)</td>
</tr>
<tr>
<td>Others</td>
<td>---</td>
<td>(0.29)</td>
<td>0.80</td>
</tr>
<tr>
<td></td>
<td>---</td>
<td>(0.12)</td>
<td>(0.19)</td>
</tr>
<tr>
<td><strong>INDIA</strong></td>
<td>143.50</td>
<td>234.48</td>
<td>417.80</td>
</tr>
</tbody>
</table>

(Figures in the parentheses indicate percentages to the total national output)

Table 4.3 reveals that production of cashew nut in the country has increased from 143.50 thousand tonnes in 1965-66 to 234.48 and 417.80 thousand tonnes during 1985-86 and 1995-96 respectively. Kerala has been the largest producer of cashew during these periods and during 1995-96 produced 1.40 lakh tonnes of raw nut. However the share of Tamilnadu has reduced from 15.33 percent in 1965-66 to 7.40 percent in 1995-96. During 1995-96, Andhra Pradesh occupied second position in raw nut production (0.71 lakh tonnes) followed by Maharashtra (0.69 lakh tonnes), Orissa (0.43 lakh tonnes) and Karnataka (0.38 lakh tonnes). Compound growth rates of production of cashew in different cashew producing states for the period 1981-82 to 1995-96 are found to be statistically significant for all the states as well as for the nation and it vary from 1.07 percent, (Kerala) to 13.66 percent (Maharashtra). On an average...
production of cashew in the country is increasing significantly by 5.01 percent per annum.

Table 4.3 reveals that till 1985-86, Kerala recorded highest productivity, but during 1995-96, Maharashtra had the highest productivity of 1400 Kg/ha followed by Kerala and Andhra Pradesh (1000 Kg/ha), West Bengal (870 Kg/ha) and Orissa (720 Kg/ha). Compound growth rates of productivity of cashew for the period 1983-84 to 1995-96 are found to be negative for Kerala, Karnataka and West Bengal. This is mainly attributed to the old senile plantations existing in these states and productivity of these plantations has declined over the years. Significant positive growth rates of productivity have been observed for Tamilnadu, Goa and Maharashtra. However the growth of productivity of cashew for the nation is found to be only 0.96 percent per annum.

4.7 Imports of Raw Cashewnuts

One of the most important dimensions in the analysis of the cashew production sector is the role of imports. India is the largest processor of cashew and therefore the capacity of the Indian processing sector is high. This is supplemented by the labour intensive processing method followed by the industry in a highly populated country like India. Moreover, the processing technology is very simple and therefore addition of capacity is not a major constraint. Therefore the crucial aspect that determines the functioning of the processing sector is the nature of imports possible. The share of indigenous production in the export of the cashew kernels as also the share of raw nut imports to the total kernel production and exports are major factors that need to be looked at for understanding the raw cashewnut situation as it affects the exports of kernels.
Table 4.4
Share Of Export to The Indigenous Rawnut Production During 1981-82 To 1995-96

<table>
<thead>
<tr>
<th>Year</th>
<th>Export of Kernel ('000 MT)</th>
<th>Indigenous production (rawnut in '000 MT)</th>
<th>Import of Rawnut ('000 MT)</th>
<th>Cashew Kernel production ('000 MT)</th>
<th>domestic consumption ('000 MT)</th>
<th>Share of export to the indigenous rawnut production.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1981-82</td>
<td>30.74 (60.46)</td>
<td>195.76</td>
<td>16.06</td>
<td>50.84</td>
<td>20.10 (39.54)</td>
<td>57.66</td>
</tr>
<tr>
<td>1982-83</td>
<td>30.90</td>
<td>201.44</td>
<td>1.49</td>
<td>48.70</td>
<td>17.80 (36.55)</td>
<td>63.18</td>
</tr>
<tr>
<td>1983-84</td>
<td>36.90</td>
<td>210.87</td>
<td>26.88</td>
<td>57.06</td>
<td>20.16 (35.33)</td>
<td>60.17</td>
</tr>
<tr>
<td>1984-85</td>
<td>32.37 (48.60)</td>
<td>221.33</td>
<td>56.16</td>
<td>66.60</td>
<td>34.23 (51.40)</td>
<td>35.56</td>
</tr>
<tr>
<td>1985-86</td>
<td>37.10 (60.29)</td>
<td>234.48</td>
<td>21.95</td>
<td>61.54</td>
<td>24.44 (39.71)</td>
<td>56.57</td>
</tr>
<tr>
<td>1986-87</td>
<td>43.00 (60.79)</td>
<td>245.58</td>
<td>49.15</td>
<td>70.74</td>
<td>27.74 (39.21)</td>
<td>52.94</td>
</tr>
<tr>
<td>1987-88</td>
<td>35.97 (49.48)</td>
<td>260.26</td>
<td>42.61</td>
<td>72.69</td>
<td>36.72 (50.52)</td>
<td>41.21</td>
</tr>
<tr>
<td>1988-89</td>
<td>33.99</td>
<td>274.33</td>
<td>45.15</td>
<td>76.68</td>
<td>42.69 (55.67)</td>
<td>35.16</td>
</tr>
<tr>
<td>1989-90</td>
<td>45.22 (55.12)</td>
<td>285.59</td>
<td>56.25</td>
<td>82.04</td>
<td>36.82 (44.88)</td>
<td>46.28</td>
</tr>
<tr>
<td>1990-91</td>
<td>49.87 (55.08)</td>
<td>294.59</td>
<td>82.64</td>
<td>90.54</td>
<td>40.67 (44.92)</td>
<td>42.48</td>
</tr>
<tr>
<td>1991-92</td>
<td>47.74 (48.35)</td>
<td>305.31</td>
<td>106.08</td>
<td>98.73</td>
<td>50.99 (51.65)</td>
<td>30.41</td>
</tr>
<tr>
<td>1992-93</td>
<td>53.24 (45.98)</td>
<td>349.19</td>
<td>133.29</td>
<td>115.80</td>
<td>62.56 (54.02)</td>
<td>25.35</td>
</tr>
<tr>
<td>1993-94</td>
<td>68.97 (45.98)</td>
<td>348.15</td>
<td>190.16</td>
<td>129.20</td>
<td>60.23 (46.62)</td>
<td>27.92</td>
</tr>
<tr>
<td>1994-95</td>
<td>77.00 (58.36)</td>
<td>321.64</td>
<td>228.11</td>
<td>131.94</td>
<td>54.94 (41.64)</td>
<td>28.82</td>
</tr>
<tr>
<td>1995-96</td>
<td>69.68 (45.66)</td>
<td>417.83</td>
<td>218.02</td>
<td>152.60</td>
<td>82.92 (54.34)</td>
<td>17.31</td>
</tr>
</tbody>
</table>

C.G.R 6.49*  5.01*  27.37*  8.18*  10.34*

C.G.R: Compound growth rate. * Significant at 1 per cent level of probability. Figures in the parentheses indicate percentages to the total kernel production during the year.

Table 4.4 reveals that there has been gradual decline in the share of internal rawnut production to the cashew kernel export. It was 63.18 percent during...
1982-83 and declined to 27.31 percent during 1995-96. It is mainly due to the fact that
domestic processors in the organised sectors are solely responsible for export of cashew
kernel and import of rawnuts. As such entire imported rawnut available to the industry
are meant for export after processing. Thus with gradual increase in import of rawnuts
there is fall in the share of internal rawnuts to the total kernel export from India. Also
there has been fall in volume of exports to the total kernel production. It varied between
44.33 percent in 1988-89 to 64.67 percent during 1983-84. It can also be seen that there
has been gradual increase in domestic consumption.

4.7.1 Average Unit Value across Years

The value of imports of raw cashew nuts from different countries has a
profound effect on the net foreign exchange earnings of the country from cashew as a
commodity. This has to be monitored, as otherwise imports would be a drain on the
economy. One of the other important aspects of monitoring this value is to estimate the
diversion of the marketing of kernels into the domestic market from these imported
rawnuts after processing. With India being the largest processor and exporter facing a
shortage of raw nuts from indigenous production, the raw nut exporting countries may
take advantage of this fact and therefore reduce the gains from processing as rawnuts
constitute the major cost in the cashew processing sector

Average Unit value is an indicator of the value that has been paid out in
foreign exchange for the import of raw nuts over a period of time. The import of raw nuts
are under the Open general license of the Government of India and therefore any
registered importer can import raw nuts for processing. This result in a decrease in the net
foreign exchange earnings from the cashew industry in any year.
The graphs above clearly show the drastic increase in the average unit value of the raw nuts imported, especially after the peak in the year 1982-83 when there was a severe shortage in the raw nut production in the major producing countries.
raw nut import unit values have increased because of the excess capacity available in the country and the paucity of rawnuts from indigenous production. It has also been due to the depreciation of the rupee and the consequent increase in the value of the realisation from the cashew kernels. It can be observed both in the domestic as well as the imports of rawnuts that price of rawnuts have a very high correlation with the price of the kernels.

Figure 4.5 AUV of raw nuts compared with cashew kernels

![AUV OF RAW NUTS AND CASHEW KERNELS COMPARED](chart.png)

Source: Indian cashew facts and figures CEPC 1994 p21 and Indian cashew statistics CEPC 1997 p55 & p70 FAOSTAT.

It can be seen from the figure above that despite the drastic increase in the AUV of raw cashew nuts, its level has remained stable over the years compared to the AUV of cashew kernels. Moreover, the vast difference in the AUV of imported rawnuts as compared to the AUV of the cashew kernel convey the reason why import of rawnuts take place in large quantities despite the heavy drain in foreign exchange due to the heavy cost of the rawnuts.
4.7.2 Rawnut import origin share and value

The import of rawnuts from different cashew producing countries in the world may have become inevitable in the context of the low growth in the indigenous production of raw nuts. However an important dimension in the investigation of imports would be the change in the profile or the country of origin as also the cost of importing from different countries. The analysis of the imports on these two dimensions would reveal the concentration and diversification of the imports as well as the nature of dependence and the cost effectiveness. It would help in deciding on appropriate sources of the imports till indigenous production matches the processing requirements.

Table 4.5 India’s Rawnut Imports (% Share) From Different Countries and AUV

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Mozambique</td>
<td>%</td>
<td>59.9</td>
<td>35.8</td>
<td>30.1</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>9.02</td>
</tr>
<tr>
<td></td>
<td></td>
<td>AUV</td>
<td>0.91</td>
<td>1.78</td>
<td>2.43</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>29.39</td>
</tr>
<tr>
<td>2</td>
<td>Tanzania</td>
<td>%</td>
<td>35.4</td>
<td>49.8</td>
<td>53</td>
<td>4.8</td>
<td>38.2</td>
<td>13</td>
<td>33.8</td>
</tr>
<tr>
<td></td>
<td></td>
<td>AUV</td>
<td>0.96</td>
<td>1.7</td>
<td>2.49</td>
<td>8.44</td>
<td>11.5</td>
<td>19.20</td>
<td>35.64</td>
</tr>
<tr>
<td>3</td>
<td>Kenya</td>
<td>%</td>
<td>-</td>
<td>-</td>
<td>15.2</td>
<td>91.6</td>
<td>-</td>
<td>-</td>
<td>91.6</td>
</tr>
<tr>
<td></td>
<td></td>
<td>AUV</td>
<td>-</td>
<td>-</td>
<td>2.35</td>
<td>5.16</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>4</td>
<td>Guinea Bissau</td>
<td>%</td>
<td>-</td>
<td>-</td>
<td>-</td>
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<td>15.8</td>
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<td>10.4</td>
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<td>Nigeria</td>
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<td>1.0</td>
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<td>8</td>
<td>Ivory Coast</td>
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It can be seen from the above table that there has been a significant diversification in the sources for the import of raw cashew nut into the country for export processing. Till the beginning of the 1980, the main suppliers of raw cashew nuts for India have been Mozambique, Tanzania and Kenya. With the development of the processing facilities and the conditions imposed by these countries for the export of raw cashew nuts, these countries have declined as the sources of raw cashewnut supply. The increase in the number of suppliers also poses problems, as each one of these countries has to be monitored for the availability of supplies. From a position of three countries constituting about 85% of the total imports of raw cashew nuts from 1965-66 to 1985-86, the import situation has worsened with 10 countries contributing to the same percentage of imports in 1995-96. The limited increase in the internal raw cashewnut production and the large number of countries from which rawnuts have to be procured would lead to a drain in the foreign exchange in spite of higher cashew exports as the AUV of the rawnuts has also been increasing over the years.

4.7.3 Port of Entry

The import of raw cashew in a form that is useful for processing depends upon the facilities available at the port of entry into India. Moreover the nearer the distance from the port of entry and the factories for processing, the greater would be the supervision and the control exercised on the imported raw material. This is important in the case of raw cashew as it is an agricultural commodity and therefore requires adequate care before the processing begins. The cost of transportation and the damage to the imported raw material can also be minimised if the processing factories and the port of
entry are nearer. Taking these points into account it would be useful to analyse the levels of imports from the different ports of entry and their implication.

![Fig 4.6 Portwise share of Raw nut Imports](image)


The Cochin port was the leading port for the import of raw cashew nuts till 1980. After 1980, it has been observed that Tuticorin which was handling a very negligible amount of the raw nut imports earlier has come to dominate the raw nut import handling. The Tuticorin port has developed specialisation as a port dealing with cashew as a commodity as this is evident in the increase exports through Tuticorin. There has been a change in the import pattern of the rawnuts especially in terms of the port from where the rawnuts arrive basically on account of the specialisation of the port. The visits of liners to the Tuticorin port on a regular basis, the absence of labour problems as experienced in the Cochin and mangalore ports and the provision of better service for the cashew importers has resulted in the development of the Tuticorin port.
4.8 Cashew Apple

One of the major products of the cashew tree is the cashew apple. Cashew apple as such is an edible fruit inspite of its astringency. The weight of the cashew apple is about eight times the weight of the raw nut. At the present level of production of rawnuts in the country around 30 lakh tonnes of cashew apple is being produced per year (Augustin 1999). However, except for a very minor quantity of this total production of the cashew apple that is used in Goa for the production of an alcoholic beverage called Feni, the rest of the cashew apple is wasted without any economical use. There are several unfermented and fermented products that can be made through processing the apple like cashew apple juice, syrup, jam, candy, chutney, pickle, liquor, wine and vinegar (Augustin 1987). The exploitation of cashew apple as a product adds value to the grower of cashew and therefore provides additional revenue. This can result in the reduction in the price of the rawnuts that resulting in a more competitive pricing of the cashew kernels in the international market

4.9 Conclusion

An analysis of the raw cashewnut market situation in international and the Indian market leads to the following conclusions.

1. There has been a significant increase in several new entrants in the cashew market in their increase in the production of raw cashew

2. Raw cashew imports have risen over a period of time, as the increase in the raw nut production was not enough to support the enormous increase in the processing capacity.
3. There has been an increase in price of raw nut proportionate to kernel prices increase in the international market.

4. There is still a concentration of the major production in the state of Kerala and the efforts at the diversification of the cashew production to non traditional areas has not borne fruit.

5. The unorganized sector is responsible for a significant level of the utilisation of the raw nuts for processing.

6. The development of the cashew plantations is not on a scientific and systematic scale. Majority of the plantation in the private sector is homesteads that do not undertake package of practices as recommended by research for the efficient yield of the cashew trees. In addition to that the age of the plantation pose a serious concern for the increase in the production of the cashew kernel.

7. In order that the processing industry develops, there is the need for a close interaction between the growers of cashew and the processors. Unfortunately there is a market for raw cashew that is operates with the help of brokers. In view of the shortage of raw cashew and the limited time period in which it is available, development of raw cashew nut production as per the needs of the cashew kernel exporters, does not take place. Therefore a good competitive market with strict adherence to specifications and grading of raw nuts does not take place.
8. One of the major products from the cashew tree the cashew apple is not utilised for economic production of by products and is wasted except for Goa where a special alcoholic drink called Feni made out of cashew apple juice is prepared. This could be exploited as another effective source of revenue for cashew growers.