CHAPTER 2

PRODUCTION

Cashew is grown almost throughout the tropics, between the Tropics of Cancer and Capricon (Fig. 2.1). Most of the traditional cashew growing regions are characterised by semi-wild growth. Consequently, eventhough it fetches valuable foreign exchange to the national exchequer, most of the cashew collected and processed for world markets are picked from sporadically self-sown trees.

World production of cashew

Total world production of raw cashewnut during 1976 was 5.87 lakh tonnes (Table 2.1). About 95% of the production is from the countries in Africa and Asia, mainly from India (42%), Mozambique (34%) and Tanzania (14%). Contribution of Brazil, the original home of cashew, is less than 5% only. Other Asian countries growing cashew are the Philippines, Malaysia and Sri Lanka and together they account for only about one per cent of the total production (Table 2.1).

Mozambique ranks second in terms of production of raw cashewnuts with the annual average production being 1.97 lakh tonnes, for the last three years. It was introduced into the country during the fifteenth century by the Portuguese missionaries. The crop is now growing wild in the entire coastal belt of the country, more than 15,000 kilometres long and up to a breadth of 200 kilometres. As early as the 20's, harvesting and utilisation of raw cashewnut in Mozambique were oriented towards the demand on the part of Indian processors. From an average of 1,000 tonnes per annum during the 20's, exports of raw nuts from this country rose to 6,350 tonnes in 1930; 26,130 tonnes in 1935 and 31,700 tonnes in 1940. There was a rapid resumption in trade after the World War II and the exports climbed a peak of 1.26 lakh tonnes in 1964.

Tanzania is the third major cashew growing area in the world, with an average production of 1.15 lakh tonnes of raw nuts. Here also the crop was introduced at more or less the same time as in Mozambique. About 70 % of raw nuts are exported to India.

Brazil contributes about 4.4% and is the fourth largest producer. The production is mainly from wild and semi-wild cashew populations concentrated in the coastal areas of the north-eastern regions. In recent years large organised plantations have started contributing significantly to cashew output. Approximately 20 companies process cashew in Brazil of which all but three, rely upon manually operated machines. There is currently under-utilisation of capacity in the industry which can process 10,000 tonnes of raw nuts per year. This excess installed capacity in the processing industry has stimulated imports

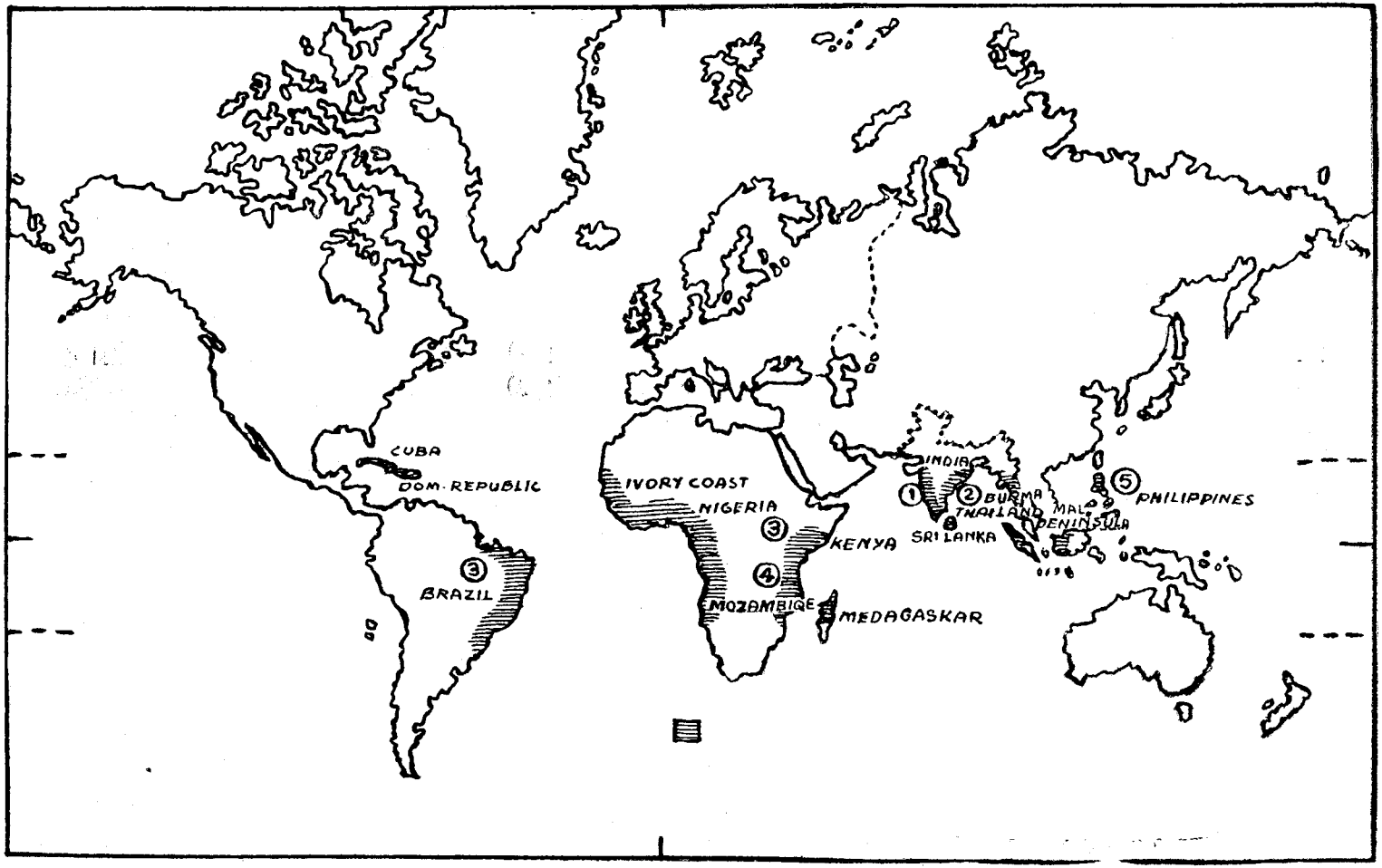

Fig. 2. 1. CASHEW GROWING AREAS OF THE WORLD

TABLE 2.1. **World Production of cashew ('000 metric tonnes)**

Country/Region	*Production of cashewnut*					*Compound growth rate (%)*
	Average 1961–65	*1974*	*1975*	*1976*	*Average 1974–76*	
Angola	1.0 (0.3)	1.4	1.4	1.4	1.4 (0.2)	2.5
Gumbissau	2.0 (0.5)	2.5	2.7	2.7	2.6 (0.4)	2.3
Kenya	7.1 (1.9)	16.0	16.4	20.0	17.5 (2.9)	7.8
Madagascar	2.0 (0.5)	2.0	2.0	2.0	2.0 (0.3)	0
Mozambique	131.2 (35.4)	213.4	180.0	200.0	197.8 (32.6)	3.5
Tanzania	63.4 (17.1)	147.7	115.2	83.4	115.4 (19.0)	5.1
AFRICA	206.7 (55.7)	382.9	317.7	309.5	336.7 (55.5)	4.2
Dominian Republic	0.8 (0.2)	0.8	0.8	0.8	0.8 (0.1)	0.3
N. C. AMERICA	0.8 (0.2)	0.8	0.8	0.8	0.8 (0.1)	0.3
Brazil	11.7 (3.1)	28.4	24.9	27.0	26.8 (4.4)	7.1
SOUTH AMERICA	11.7 (3.1)	28.4	24.9	27.0	26.8 (4.4)	7.1
India	145.2 (39.1)	230.0	235.0	243.3	236.1 (38.9)	4.1
Mal. Peninsula	0.2 (N)	0.6	0.6	0.6	0.6 (0.1)	9.6
The Philippines	6.0 (1.6)	4.9	4.9	4.9	4.9 (0.8)	1.6
Sri Lanka	0.4 (0.1)	0.5	0.5	0.5	0.5 (0.1)	1.6
ASIA	151.8 (40.9)	236.0	241.0	249.3	242.1 (39.9)	4.0
WORLD	371.0	648.1	584.4	586.6	606.4	4.2

Note: Figures in parentheses denote the production figures expressed as percentages of total production
Source of basic data : FAO Production Year Book, 1976

of raw cashewnuts from Mozambique and Tanzania for processing and eventual re-export. Thus Brazil has emerged as a tough competitor for India—for raw cashewnut import from African Countries and exports of kernel, especially to the American zone.

Kenya ranks fifth among the world's commercial cashew producing countries. The crop is grown primarily by small landholders in the southern humid part of the coast. The cashew belt extends for more than 150 kilometres along the coast. Most of Kenya's cashewnuts, till as late as 1975, were being exported to India. However, with the establishment of the first large scale processing unit in 1976, with an installed capacity of 15,000 tonnes of raw nuts per annum, Kenya's cashew export business has turned a new leaf as is evident from the diminishing shipments of raw nuts and an increasing volume of kernel sales. The kernel export, which was static around 160 tonnes for the last decade jumped to a record of 1,013 tonnes in 1976. The present raw nut production of 20,000 tonnes a year is expected to increase many fold as the new plantations start yielding.

During the period 1961–'65 to 1974–'76, the production of raw cashewnuts in the world was growing at the compound rate of 4.18% per annum compared to 4.15% growth for Africa and 3.97% for Asia. Among the major producing countries, growth rate was highest in Tanzania (5.12%), followed by India (4.13%) and Mozambique (3.48%). The rate of increase in production has been much higher in Malayan Peninsula (9.59%), Kenya (7.81%) and Brazil (7.10%), but this had no significant impact on total world production, because of their low share. In the Philippines a declining trend in production is noticed.

Cashew in India

The Directorate of Economics and Statistics (Ministry of Agriculture, Govt. of India, New Delhi) has been regularly publishing data on area, production and average yield of this crop for the period 1962–63 to 1969–70. From 1970–71 onwards, this has ceased to appear. State-wise data on area and production, compiled by the Directorate of Cashew Development, Cochin, based on the reports received from various state governments have been given in Table 2.2.

Over the years, the area under the crop in India has been steadily increasing, but corresponding increase has not been observed in the production of nuts. During 1976–77, the production of raw cashewnuts was 1.79 lakh tonnes from an area of 4.23 lakh ha. (FAO estimates of production from India is about 30% higher than this). This is probably because the new plantations have not started yielding yet.

Kerala has the maximum area under the crop (1.18 lakh ha accounting for 28% of the total), followed by Tamil Nadu (0.97 lakh ha or 23%) and Maharashtra (0.80 lakh ha or 19%). Other important cashew growing areas are Karnataka, Goa, Andhra Pradesh and Orissa. It is also grown in West Bengal, Tripura and Pondicherry. In terms of production, 72% (1.29 lakh tonnes) is from Kerala. Karnataka is the second largest producer, 8.5% (0.15 lakh tonnes) followed by Andhra Pradesh and Tamil Nadu. The

TABLE 2.2. **Area and production of cashew in India (1976–77)**

State/ Union Territory	*Area (hectares)*		*Production (in tonnes)*		*Yield (kg/ha)*
Andhra Pradesh	31,000	(7.3)	12,500	(7.0)	403
Goa	32,517	(7.7)	6,500	(3.6)	200
Karnataka	36,534	(8.6)	15,175	(8.5)	415
Kerala	118,139	(27.8)	129,021	(72.0)	1092
Maharashtra	79,808	(18.9)	3,634	(2.0)	45
Orissa	24,487	(5.8)	940	(0.5)	38
Pondicherry	322	(0.1)	42	(N)	130
Tamil Nadu	97,130	(23.0)	11,470	(6.4)	118
Tripura	753	(0.2)	23	(N)	31
West Bengal	2,506	(0.6)	N	(N)	N
ALL INDIA	423,196		179,305		423.6

Note : Figures in parentheses denote area/production expressed as percentages of the total
N : Nil or negligible
Source for basic data : Directorate of Cashew Development, Cochin, India

share of Kerala in production of nuts is disproportionate to its area figures. Though 19% of the area under the crop is accounted for by Maharashtra, its share in the total production is only 2%**. The production of nuts from all the states is likely to increase when the new plantations come to bearing.

In Kerala, during the past decade, the area expansion has been to the tune of 42% from 0.91 lakh ha in 1966–67 to 1.18 lakh ha in 1975–76, while the production increased from 1.15 lakh tonnes to 1.29 lakh tonnes, a rise of 17% only. Most of the large scale plantations have yet to reach the bearing stage. Cannanore district accounts for the maximum area under the crop (61,000 ha), followed by Malappuram (24,000 ha) and Palghat (13,000 ha) districts.

Karnataka, with a production of over 15,200 tonnes of raw nuts from an area of 36,500 ha, stands second among the different cashew producing states in India. The productivity of trees in the state is almost on par with the national average. During the

** During the late 60's, the estimated production of nuts from Maharashtra was around 24,000 tonnes. The reason for the reported fall in production is not known, though the area has considerably gone up.

past decade, area under the crop has shown a four–fold increase from 8,600 ha to 36,500 ha, whereas the production has gone up by three times only (5,000 tonnes to 15,200 tonnes). Fortyfive per cent of the area under the crop is young plantations in forest lands, which contributes to 34% of production. Out of the 16,400 ha under forest plantation, 10,250 ha (62.5%) is in Dakshina Kanara district, 5,500 ha (33.4%) in Shimoga district and small areas in Kolar and Uttara Kanara districts.

Andhra Pradesh is the third largest producer of raw nuts in the country. It has about 31,000 ha under cashew, producing 12,500 tonnes of raw nuts. The past decade has witnessed an increase of 70% in the area, whereas the production has remained almost static. Yield of trees is almost on par with the national average. Important cashew growing districts are East and West Godavari and Srikakulam.

Tamil Nadu produces 11,500 tonnes of raw nuts from an area of 97,000 ha and holds the fourth place for production in the country, and second in area. About 15 per cent of the production in the state is from forest plantations. South Arcot district has the maximum area under the crop and accounts for the maximum production also, followed by Tiruchirappalli. About 50 per cent of the area under cashew in the state is from the above two districts and their share in the production is over 60%.

World demand

The world demand of cashew kernels has increased in the last three decades. The export figures, rose from 17,200 tonnes in 1947 to 36,000 tonnes in 1957 and to 63,500 tonnes in 1967. It touched the peak during 1972, when the world export reached 1,02,000 tonnes. However, two subsequent crop failures in 1975 and 1976 have resulted in lower world exports in recent years. As a result of the continued short supply of raw cashew-nuts and the exceptionally high prices of cashew kernels, there has been a marked decline in world consumption during 1977.

The major importing and consuming countries of the cashew kernels are the USA and the USSR followed by Japan, Canada, UK, GDR, Australia and FRG. In fact these countries together make up more than 90% of the cashew imports. (Table 2.3).

World consumption has been increasing at an average annual rate of about 10.9% during the last decade. However, the expansion has not been uniform among the various importing countries. Japan has achieved the fastest growth rate in her imports (from 514 tonnes in 1968 to 6559 tonnes in 1976).

Exports from India

India is the largest exporter of cashew kernels and had the privilege of occupying a monopolistic position in the supply of cashew kernels in the international market till recently. At present India accounts for nearly 60% of the world export (Fig. 2.2). In 1947, India exported 16,900 tonnes of cashew kernel, which steadily increased to 34,577

TABLE 2.3. **Imports of cashew kernels by principal consuming countries (quantity in metric tonnes)**

Countries	*1948*	*1958*	*1968*	*1973*	*1974*	*1975*	*1976*
Australia	..	685	2024	2364	3448	3568	3489
Belgium	11	113	196	391	335	393	377
Canada	835	1507	2272	6703	5710	4865	6583
France	..	..	184	1164	647	835	1028
GDR*	..	50	2510	978	614	266	511
German Fed. Rep.	..	..	1174	3004	2261	2703	2986
Holland	..	..	777	2616	2441	3198	3194
Hong Kong*	..	230	521	548	832	858	532
Japan	..	..	514	3289	2332	4323	6559
Kuwait*	..	15	86	181	260	421	535
Newzealand	..	134	210	254	582	438	593
Singapore*	..	75	163	390	342	529	460
United Kingdom	3237	2717	3150	3420	3373	2303	4130
U.S.A.	15745	30286	42234	49003	39860	43683	50772
U.S.S.R.*	..	5095	17460	20700	31742	24797	15755
Total	19828	40907	73475	95005	94781	93180	97504

Source: Gill & Duffus Landauers Ltd., London
D G C I & S, Calcutta
*Exports from India only

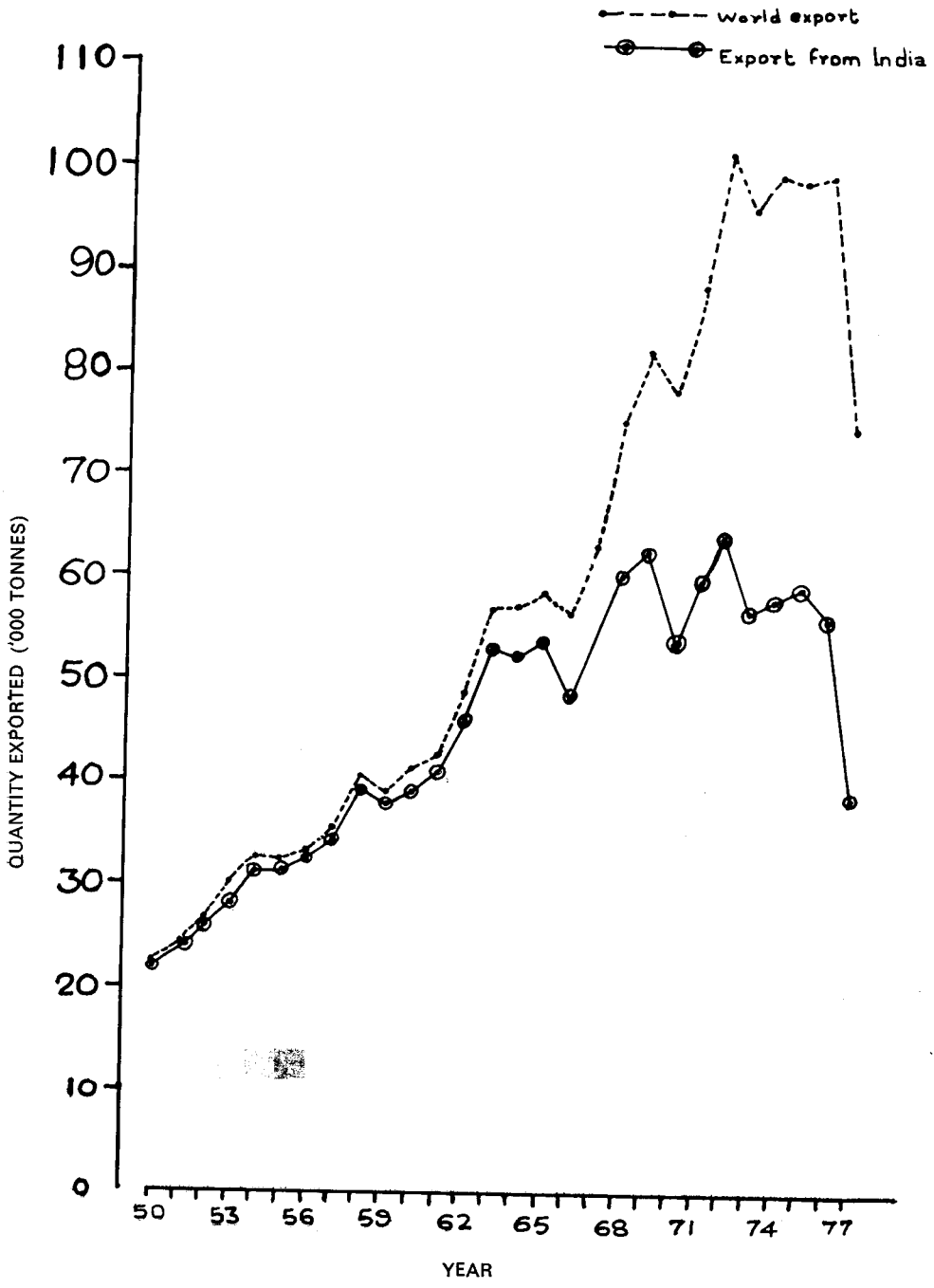

Fig. 2. 2. WORLD EXPORT OF CASHEW KERNELS

tonnes and 52,256 tonnes in 1957 and 1967 respectively and touched a peak of 64,500 tonnes in 1972. However, with the establishment of processing units in African Countries and entry of Brazil in the world market, the share of India has started declining. Exports from India fell from 59,000 tonnes in 1975 to 39,000 tonnes in 1977 (Table 2.4).

The largest consumers of Indian cashew kernels were from American zone, with the USA importing the lions share. However, the imports from India showed a fluctuating trend and touched the all time low of 8,800 tonnes in 1977.

The USSR, the second largest consumer of cashew kernels is presently the leading buyer from India. In fact, USSR imports are almost entirely from India. Though she entered the cashew market much later, USSR has experienced a spectacular growth in cashew consumption. The average exports from India to the USSR in the last few years have been around 20,000 tonnes annually.

Internal consumption

The available statistics on internal consumption is scanty. A crude way of arriving at the internal consumption is on the assumption that the difference between the kernels available for processing and the kernels exported will give the consumption figure (Table 2.5).

Right from its inception in the early twenties, the cashew industry has been mainly export oriented. The internal consumption tends to fluctuate.

Cashew crisis in India

The export oriented cashew industry in India had until early 1960's virtually a monopoly in the processing of cashewnuts and supply of kernels to international markets. However, the industry was solely dependent on imported raw nuts from East African countries. As is evident till early 1970's about 75% of the export requirements were met through the imported raw nuts.

Cashew industry had registered a phenomenal growth during the last half-a-century period. Relatively small capital investment required to establish the processing units, availability of skilled labour in abundance and steady increase in the imports of raw cashewnuts from East African countries had contributed to the rapid proliferation of processing units in Kerala. In recent years, the growing disparity in the wage structure in Kerala as compared to the adjoining states led the entrepreneurs to migrate from Kerala to neighbouring Tamil Nadu, creating new processing capacities and thereby aggravating the existing underemployment problem in the industry as a whole. Consequently the installed capacity of processing units was built up in the country which was sufficient to process more than twice the available raw material. Underemployment and seasonal employment have, therefore, been the constant features of the industry throughout. Practically no attention has been paid by the industry for enhancing the production of indigenous raw materials. Our main concern was only feeding the industry with imported raw nuts.

TABLE 2.4. **Export of cashew kernels from India (quantity in '000 metric tonnes)**

Country	1955–56		1960–61		1965–66		1970–71		1975		1976		1977	
U. S. A.	24.8	(79.1)	30.4	(69.8)	27.0	(52.7)	22.8	(45.3)	18.5	(31.2)	20.5	(36.8)	8.8	(22.8)
Canada	1.2	(3.7)	1.4	(3.2)	1.6	(3.1)	2.3	(4.6)	2.8	(4.8)	4.0	(7.1)	1.3	(3.3)
U. S. S. R.	..		4.2	(9.5)	11.5	(22.5)	14.4	(28.6)	24.8	(41.9)	15.8	(28.2)	19.1	(49.4)
G. D. R.	..		0.5	(1.2)	3.1	(66.0)	3.2	(6.4)	0.3	(0.4)	0.5	(0.9)	0.1	(0.4)
U. K.	3.1	(9.9)	3.0	(6.9)	2.5	(44.8)	1.8	(3.5)	0.8	(1.4)	1.0	(1.8)	0.4	(1.0)
F. R. G.	0.1	(0.3)	0.8	(1.8)	0.6	(1.2)	0.4	(0.7)	0.6	(1.0)	1.3	(2.3)	0.5	(1.2)
Japan	..		0.2	(0.4)	0.5	(1.0)	0.9	(1.8)	3.8	(6.4)	5.5	(9.8)	2.9	(7.6)
Singapore	..		0.1	(0.2)	..		0.3	(0.7)	0.5	(0.9)	0.5	(0.9)	0.2	(0.6)
Australia	0.6	(1.8)	1.1	(2.6)	1.4	(2.7)	1.1	(2.1)	2.2	(3.8)	2.4	(4.3)	1.9	(5.0)
Others	1.6	(5.2)	1.9	(4.4)	3.1	(6.0)	3.1	(6.0)	4.9	(8.2)	4.4	(7.9)	3.5	(8.7)
Grand Total	31.4	(100.0)	43.6	(100.0)	51.3	(100.0)	50.3	(100.0)	59.2	(100.0)	55.9	(100.0)	38.7	(100.0)
Value (in rupees crores)	12.92		18.91		27.40		52.07		105.53		110.25		143.22	

Note : Figures in parentheses express the quantity exported, as percentage of the total exports
Source : The Cashew Export Promotion Council, Cochin, India

TABLE 2.5. **Internal consumption of cashew kernels (quantity in metric tonnes)**

Year	Raw nuts			Kernel equivalent at 25 per cent recovery	Exports	Quantity available for internal consumption
	Imports	Indigenous production	Total			
1960	99,631	61,000	160,631	40,158	39,436	722
1965	175,489	61,000	236,489	59,122	53,793	5,329
1970	170,785	71,000	241,785	60,446	54,074	6,372
1975	126,724	97,000	223,724	55,931	59,174	—

Source : Cashew Export Promotion Council, Cochin. India

The impetus towards domestic processing in African Countries evolved with the development of mechanised processing system. The incentives to process their own raw nuts were strong to the African processors as it could lead to boosting up of the export earning, besides the generation of employment opportunities. As the conditions prevail today, with Mozambique achieving self sufficiency in processing her entire raw nut production, fast development of processing industry in Tanzania and Kenya and the emergence of Brazil and China with excess installed capacity and strong purchasing power, India has to compete for the dwindling availability of raw material in the international cashew market. India is, perhaps, fast approaching a stage where her industry has to depend entirely on indigenous production for its raw material requirements.

At present India has the installed capacity of about 4.5 lakh tonnes of raw cashew-nuts, while the triennial average of indigenous production and imported raw nuts together for the period 1975-77 has been of the order of about 2.3 lakh tonnes thereby leaving a gap of about 2.2 lakh tonnes between the supply and demand of raw nuts.

Development programmes during Sixth Plan period

As shown in the earlier section, the gap between the demand and supply of raw cashewnuts in the country is about 2.2 lakh tonnes. This gap could be bridged by the indigenous production through two measures: (i) expansion of area under cashew in both traditional as well as non-traditional regions, and (ii) adoption of improved management practices. Though various long and short term measures formulated for implementation during the Sixth Plan, the indigenous production is expected to go up to about 2.98 lakh tonnes.

Both Centrally Sponsored Schemes and State Sector Schemes intend to increase the area under cashew have been formulated to enhance the indigenous production. The details are presented in the Table 2.6.

TABLE 2.6. **Programmes for area expansion during Sixth Five Year Plan (area in '000 ha)**

State	*Centrally sponsored schemes*		*State sector schemes*	
	Non-departmental	*Departmental*	*Non-departmental*	*Departmental*
Andhra Pradesh	4.0	10.0	..	..
Goa	4.0	2.0	10.0	1.0
Karnataka	8.0	3.0	..	36.0
Kerala	18.0	8.0	..	..
Maharashtra	10.0	..	..	..
Orissa	8.0	24.0	..	14.0
Tamil Nadu	8.0	3.0	..	..
Total	60.0	50.0	10.0	51.0

Source : Directorate of Cashew Development, Cochin, India

According to the programmes, an additional area of 1.71 lakh ha are to be brought under cashew. The share of Central Sector being 1.10 lakh ha, the remaining 0.61 lakh ha will be covered by State Sector Schemes. In due course of time this programme is expected to yield an additional production of the order of 3420 tonnes.

Some of the other Centrally Sponsored Schemes are described below:

Scheme for laying out demonstration plots in growers' orchards for improved practices in cashewnut cultivation.

The scheme will continue during the Sixth Plan and envisages to bring out 15,000 plots under its programme. The aim of the scheme is to demonstrate the efficacy of improved agro-techniques developed at the Research Stations under the growers' conditions. Average cost of adoption of improved practices in one plot is estimated to be Rs. 500/–. All the inputs required will be supplied to selected cultivators in time to ensure the effective and timely application of the same. These plots are expected to add 1875 tonnes to the total production.

Scheme for improvement of cashew by vegetative propagation

The objective of the scheme is to improve the newly raised cashew plantations which are stocked with seedling progenies of low yielding nature by adopting the techniques of vegetative propagation *in-situ,* patch budding or veneer grafting or side grafting so as to convert them into trees of merit in respect of yield and quality. An area of 28000 ha is expected to be covered by this scheme during the current plan period.

Scheme for establishment of progeny orchards for cashew

This scheme envisages to establish clonal orchards of cashew raised from superior trees of merit evolved at the Research Stations and high yielding trees located in private orchards. An additional area of 640 ha is to be brought under progeny orchards.

The estimates of additional production are furnished in Table 2.7. The total indigenous production of raw cashewnut is expected to climb up to 2.98 lakh tonnes the addition being about 1.12 lakh tonnes.

TABLE 2.7. **Estimates of additional production during Sixth Plan (quantity in metric tonnes)**

Schemes	*Additional Production*
Central Sector Schemes	
Area Expansion Programme (1,10,000 ha)	3,060*
Scheme for laying out demonstration plots in growers' orchards (15,000 plots cumulative)	1,875**
Scheme for improvement of cashew by vegetative propagation (28,000 ha)	1,200*
Scheme for establishment of progeny orchards (640 ha)	128*
Total	6,263 or 6,300
Base level production (1978–'79)	1,80,000
New plantations of IV and V Five Year Plans	62,300
Increase in production due to improved management of old orchards	50,000
Total	2,98,600

Source: Directorate of Cashew Development Cochin, India

* Additional production of 200 kg per hectare

** Additional production of 375 kg per hectare