

**PROBLEMS AND PROSPECTS OF MARKETING
INDIAN CARDAMOM AT HOME AND ABROAD**

**THESIS SUBMITTED TO
COCHIN UNIVERSITY OF SCIENCE AND TECHNOLOGY
FOR THE AWARD OF THE DEGREE OF
DOCTOR OF PHILOSOPHY
UNDER THE FACULTY OF SOCIAL SCIENCES**

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UNDER THE GUIDANCE OF

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JANUARY, 1987

Dedicated to:
Indian Cardamom Plantation Industry

DECLARATION

I hereby declare that the thesis entitled "PROBLEMS AND PROSPECTS OF MARKETING INDIAN CARDAMOM AT HOME AND ABROAD" submitted to Cochin University of Science and Technology is an authentic record of research carried out by me under the guidance and supervision of Dr.N. Parameswaran Nair, Professor in the School of Management Studies, Cochin University of Science and Technology and that no part of the work has previously formed the basis of the award of any degree, diploma, associateship, fellowship or other similar title of recognition at any University.

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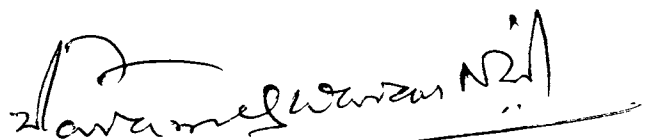
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CERTIFICATE

This is to certify that the thesis entitled "PROBLEMS AND PROSPECTS OF MARKETING INDIAN CARDAMOM AT HOME AND ABROAD" is a record of bonafide research carried out by Mr.K. Gopalakrishnan Nayar under my guidance in the School of Management Studies, Cochin University of Science and Technology.


Prof.(Dr.) N. Parameswaran Nair
Research Guide

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ACKNOWLEDGEMENTS

It is with great love and respect that I acknowledge my debt of gratitude to Dr. N. Parameswaran Nair, Professor, School of Management Studies, Cochin University of Science and Technology for supervising this study. My thanks are due to him as from any student to a teacher.

During the course of this study, I was also working as the Secretary of the Cardamom Board, Cochin. During this period I had the privilege to work under three Chairmen of the Cardamom Board. My most sincere thanks are due to Shri S.G. Sundaram, I.A.S. and Shri K. Mohanachandran, I.A.S., former Chairmen and Shri K.M. Chandrasekhar, I.A.S., present Chairman, Cardamom Board for the interest they have taken in the completion of this study. I am grateful to them personally and also to the Cardamom Board and the Government of India for the permission they gave me to undertake this study, for all the facilities they liberally made available to me and for the valuable time they spared to me in discussions regarding the details of the study. I have no doubt that this study, in its present form, would not have been possible

for me had it not been for the official position I occupied in the Cardamom Board and the opportunity I received thereby to come into contact with the numerous people connected with the cardamom industry. I am grateful to all my colleagues in the Cardamom Board for the numerous forms of assistance they have extended to me.

I am also grateful to a number of individuals and organizations for their sincere cooperation for the successful completion of this study.

Cochin 682022
1 January 1987

- K. GOPALAKRISHNAN NAYAR

PREFACE

India is known as the land of spices. Next to black pepper, cardamom is the most important spice produced in India. All the leading cardamom producing countries in the world, such as India, Guatemala, Sri Lanka, Tanzania, El Salvador, Honduras, Papua New Guinea etc. are taking steps to increase the production of cardamom, as it is a profitable plantation crop. Liberal governmental assistance is available in many of these countries for increasing the production of cardamom.

Relevance of the Study

The recent increases in the world supply of cardamom and the consequent competition in the world markets have created a critical situation for Indian cardamom industry. It has become necessary for the industry to strengthen the uses of cardamom in the existing markets and to explore new markets for the product. In view of the unstable and erratic prices it has also become necessary to increase productivity through adoption of modern agricultural technology, scientific storage, packaging practices, identification of end uses, etc. At the same time, cardamom has been in the world market for thousands

of years. Conventional methods of production and distribution developed in the past have become inadequate to meet the present crisis. It is hoped that the present study would help to focus attention on these problems of the Indian cardamom industry and suggest some solutions to meet the present crisis.

Contribution of the Study

As far as the researcher is aware no comprehensive study has been undertaken so far on the total marketing problems of Indian cardamom. To this extent, this is an original work. Maximum care has been taken to make this study useful to the Indian cardamom industry. Attempt has been made to identify the major problems faced by the industry. Certain solutions have been suggested. Further studies have been recommended wherever it was felt that more data would be required to suggest a solution.

Objectives of the Study

The main objective of the study has been to analyse the marketing problems of Indian cardamom at home and abroad and examine possible courses of action which would lead to increased consumption of cardamom, both within India and abroad. This has been done in the context of the anticipated increases in the Indian and world supply of cardamom.

Field studies were undertaken to understand the cost of production of cardamom and cost of export.

This study was also directed at examining how far price fluctuations in cardamom can be controlled in the Indian context, so as to have a reasonable and stable income for primary producers which will ensure adequate encouragement for higher production and better export earnings.

Methodology

Official data, other published and unpublished data, personal interviews and direct field studies constitute the base of this study.

All primary and secondary data on production, processing, marketing, export, consumption pattern etc. available with Cardamom Board, Spices Export Promotion Council and other institutions connected with cardamom plantation industry were collected and analysed for the purpose of the study.

The data on the world production and export of cardamom was rather limited, as none of the cardamom producing countries other than India had reliable data. In the absence of reliable data from the producing countries, the import statistics of the consuming countries

had to be depended upon. These were collected by the researcher through Cardamom Board and through other official sources. The Indian diplomatic missions abroad have been very helpful in this regard. The import statistics thus collected from different sources were cross-checked with data available from other sources to the extent possible.

The researcher undertook some field studies in India and abroad. These supplemented the studies conducted by the Cardamom Board in association with certain international organizations, Indian trade delegations, Indian exporters, Cardamom Board's foreign office in Bahrain, etc. The discussions that the researcher could hold with delegations from Cardamom producing countries to India were also helpful.

In addition, the researcher also had opportunities to personally meet and discuss with a large number of people who are connected with cardamom industry in cardamom growing areas and consuming centres in India and abroad. The researcher was in an advantageous position in this respect. As Secretary, Cardamom Board he was able to visit Saudi Arabia, Kuwait, Bahrain, U.A.E. etc. in the Middle East; U.K., France, West Germany,

Belgium, Italy, etc. in Europe; and Japan, Hongkong, Singapore, etc. in West Asia and hold discussions with people connected with spices trade during the course of the study.

The findings and recommendations in this thesis are the results of the investigations thus conducted and a careful analysis of the primary and secondary data thus obtained.

Limitations of the Study

The researcher had always to contend with the problem of scarcity of reliable data on almost all aspects of cardamom production, distribution, end uses, etc. Similarly, the data on certain aspects of the Indian cardamom industry published even by official sources especially those on production, productivity, primary sales of cardamom, internal consumption, etc. were admittedly not hundred per cent reliable and accurate. Likewise, authentic data on the cost of production of cardamom, influence of weather conditions on productivity, etc. were not available. The data on cardamom import in different countries was collected on a continuous basis from different sources through different agencies. Naturally, these data also showed some inadequacies and

discrepancies with each other. The study is thus limited by the nonavailability of dependable data on several aspects of the study. In consequence, the researcher had to make several compromises on the purity of data. It is, however, hoped that this has not affected the quality of the basic conclusions derived from these data or the validity of the recommended solutions.

It is the researcher's belief that even after taking into consideration all the limitations of the study, it is a sincere and honest attempt at understanding the problems of the Indian cardamom industry, especially in the context of the new marketing problems that the industry is likely to face in the near future. As the first study of its kind, it is also an attempt at exploring a new area of research. It is hoped that the study has suggested new areas for investigation and research.

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CHAPTER I

INTRODUCTION

Cardamom is a versatile spice. The true cardamom of commerce is the dried fruit obtained from the plant Elettaria cardamomum Maton, belonging to ginger family, viz., Zingiberaceae, and is known as 'cardamom' or 'small cardamom' or 'elettaria cardamom'.

The fruits of the plant Anomum subulatum Roxb, also possess aromatic flavour similar to that of true cardamom. These are known as 'big cardamom' or 'large cardamom' or 'anomum cardamom', but are comparatively less valued in the spices market. The name cardamom is also applied to fruits of other spices of the ginger family like Aframomum, Alpinia etc. As these cardamoms also do not have much significance in the world trade of spices, they are not covered in this study.

India produces more than thirty five spices. Of these, more than twenty are exported and hence is known as the 'Land of Spices'¹. Next to black pepper,

¹For details, see Appendix I and II.

cardamom is the most important spice produced and exported from India. The total annual value of cardamom produced in India was estimated around Rs.778 millions in 1984-85.² During 1984-85 the export earning from cardamom was of the order of Rs.648 millions, and that from all spices was Rs.2090 millions.

The Spices

Christopher Morley has defined 'spice' as the plural of 'spouse', but according to Encyclopaedia Britannica,

"spices and herbs are dried parts of various plants cultivated for their aromatic pungent or otherwise desirable substances. They consist of rhizomes, bulbs, barks, flower buds, stigmas, fruits, seeds and leaves. They are commonly spoken of loosely as spices, spice seeds, and herbs. Spices are the highly esteemed, fragrant or pungent plant products of tropical and subtropical regions, the dominant species of the trade including cardamom, cinnamon, cloves, ginger and pepper. Spice seeds are the tiny aromatic fruits and oily seeds of herbaceous plants including anise, caraway, cumin, fennel, poppy and sesame. Herbs are the fragrant leaves of such plants as marjoram, mint, rosemary and thyme."

According to the Wester's Dictionary,
"spices are specially any of various aromatic,
nutmeg, mace, allspice, ginger, cloves etc.

²Cardamom Board, Cardamom Statistics - 1984-85, (Cochin, 1986) p.13.

used in cookery to season food and to flavour sauces, pickles etc., a vegetable condiment or relish, usually in the form of powders; also such condiments collectively."

Generally speaking, when the aromatic or fragrant vegetable product used to flavour foods or beverages is from plants of tropical origin, it is considered a spice; when from plants of temperate regions it may be considered a culinary herb. It is extremely difficult to determine where a spice ends and a herb begins, as culinary herbs are in reality, one group of spices. Figuratively, a spice can be defined as

"that which enriches or alters the quality of a thing, especially in a small degree, as spice alters the taste of food; that which gives zest or pungency; a piquant or pleasing flavouring; a relish, as variety is the spice of life."³

History of spices trade

Most of the important spices including cardamom had their original home in the orient, especially India. They were and are available in the latitude belt between 25° north and 10° south of equator. The quest for tropical spices played an important part in the world

³Rosengarten Jr., Frederic, The Book of Spices, (Pennsylvania, 1969), p.3.

history, stimulating the exploration of the world and leading to the discovery of the American Continent by Christopher Columbus and others and the opening up of the countries of the East to Western civilization and trade.

About 5000 years ago, in the third millennium B.C., the spices of South India entered the market of the Middle East countries. Cinnamon and cardamom were the first to enter the field. Ginger, turmeric, cloves and pepper followed. The first authentic, though fragmentary records of the uses of spices and herbs may date from the pyramid age of Egypt, approximately 2600 to 2100 B.C. Oriental spices were popular as priceless assets throughout the periods of the three great civilizations - the Egyptian, Babylonian and the Assyrian. They were also valuable articles of exchange and trade like precious metals, pearls and jewels, as confirmed by a number of passages in the Bible.

For centuries, the Arabs held a monopoly on the trade of spices. To maintain the same, they even concealed the very identity of their source. There were close commercial contacts between South and North India during the age of Indus Valley Civilization, during the third millennium B.C. There was also an overland caravan

route connecting Indus Valley with the countries of Middle East. A thousand years later, the Phoenicians, who were great sailors established trade connections with South India. Towards the beginning of Christian era, the mystery surrounding the source of spices was cleared and the Egyptians also entered the field of spices trade. With the Roman conquest of Egypt by the middle of first century B.C., it was the turn of Romans to trade in spices. They held the spices trade for centuries thereafter. The Roman spice trade was virtually closed with the fall of the Roman empire, which may said to have culminated in the occupation of the Alexandria by the Arabs, in A.D.641. It is said about the relationship between the spices trade and Islam that:

"Mohammed (AD 570-632) who established the principles of Islam in the Koran, was not only a great prophet, legislator and founder of the religion that bears his name, but was also an experienced spice merchant. As a youth he worked with Meccan tradesman, who dealt in spices with Syria and South Arabia for several years before he claimed direct divine revelation and began his prophetic career, he was a partner in the shop in Mecca that traded in agricultural commodities as myrrh, frankincense and oriental spices."⁴

⁴Ibid., pp.37-38.

By the middle of the eighth century A.D. the great empire founded by Mohammed extended some seven thousand miles - from Spain in the West to the borders of China in the East. The Muslim influence spread upto Ceylon and Java, for most part by a roving Arab trading population. Having won religious victories in India by the sword, Muslim missionaries settled down in the Malabar coast and became spice traders.

The search for sea routes for oriental spices led to the discoveries of new lands and continents. After the fall of Constantinople to the Turks in 1453, the need for a sea route to the orient, became more urgent. The spread of Ottoman empire made the old land routes to the sources of spices and silk unsafe. Even the transitting caravans were paralysed. The most punitive of all duties imposed by the Muslim rulers were reserved for the flourishing spices trade. The Sultan of Egypt, for example, took as tariff one-third of the value of every cargo that entered his domain.

By the close of the middle ages (about 1450 to 1550 AD) the west European countries gained supremacy in the spices trade with India through the sea route.

Portugal was the first to enter the field, followed by the Dutch, the French and the English. The rest of the spice trade is closely linked to the history of India.

Export trade of spices

Though many of the tropical spices are now produced by other countries of the world, India still continues to be a major producer and exporter of spices, including cardamom. The black pepper known as the 'King of Spices' is far more the most important among them, followed by cardamom - the 'Queen of Spices'.

As in the case of other developing nations, primary commodities like tea, coffee, spices, sugar, marine products etc. and crude materials like metallic ores, jute, wool, cotton, tobacco etc., play a dominant role in India's exports. With the rapid industrialization and increase in the exports of industrialised goods, the importance of primary goods and commodities in the export trade of India is diminishing gradually though in absolute terms there has been an increase in Indian export of spices. But percentage wise, there has been a decline. In 1950-51, the share of spices was 3.8 per cent of India's total export earnings, whereas it declined to 1.71 per cent (excluding manufactured/value added items like curry powder, oils and oleoresins etc.) in 1984-85.

In 1950-51, the exports of spices from India amounted to Rs.25.51 crores out of a total export of all commodities valued at Rs.646.80 crores, constituting a 3.8 per cent share. In 1955-56, it declined to Rs.10.67 crores against total exports of Rs.640.30 crores, constituting only a 1.66 per cent share. During 1960-61, a small recovery was made, working out to a 2.63 per cent share of total exports. It is important to note that the unit value realised per kilogram of spices exported from India declined from Rs.6.88 in 1950-51 to Rs.3.50 in 1960-61. This sharp fall in unit price of about 50 per cent was mainly due to a world wide fall in the prices of pepper and cardamom during 1960-61. This decline in unit prices assumes greater significance when we look at the movement of index number of wholesale prices of all commodities, which was 74.1 in 1955-56 and 100 in 1960-61 indicating a sharp decline in the prices of spices. In the share of exports of spices, a recovery was made from 2.63 per cent in 1960-61 to 2.90 per cent in 1965-66 and the unit value realised out of exports of spices improved from Rs.3.50 per kilogram to Rs.3.72 per kilogram over the same period. In 1970-71, the exports of spices contributed only 2.05 per cent of our earnings, again showing a decline. Though the unit value realised was Rs.8.27 per kilogram in that year, it should be seen in the context of the devaluation

of the Indian rupee in June 1966. At the same time, the index number of wholesale prices of all commodities had moved up from 100 in 1960-61 (base year) to 180.6 in 1970-71, which moved up steadily to 306.3 by 1974-75.

In 1975-76, the exports of spices from India amounted to Rs.72.72 crores against an export of all commodities valued at Rs.4042 crores, constituting 1.80 per cent. During 1977-78, 1978-79 and 1979-80 the share of exports of spices showed considerable improvement on total exports from India constituting 2.63, 2.71 and 2.40 per cent respectively. In 1980-81, the export of spices amounted to Rs.117.06 crores against the exports of all commodities valued at Rs.6711 crores constituting a share of 1.74 per cent. This share declined further and reached the lowest level of 1.04 per cent in 1982-83. But it improved further and stood at 1.83 per cent in 1984-85, with a total exports of spices valued at Rs.209.02 crores. The export of all commodities during the year was valued at Rs.11,396 crores. The unusual decline in the quantity of exports in spices during 1981-82 to 1983-84 with its peak in 1982-83 was mainly due to unprecedented drought situation in Kerala, the main producing centre of pepper and cardamom in the country.

The export of spices and cardamom from India and their percentage shares in India's exports from 1975-76 to 1984-85 are given in Table 1.1.

Table 1.1

Export of Spices and Cardamom from India: 1975-76 to 1984-85

Year	India's total imports (Rs./crores)	India's total exports (Rs./crores)	India's spices exports (Rs./crores)	Spices exports as % of India's total exports	India's cardamom exports (Rs./crores)	Cardamom exports as % of India's total exports
1975-76	5265	4042	72.72	1.80	19.38	0.48
1976-77	5074	5146	75.98	1.48	14.03	0.27
1977-78	6025	5404	141.88	2.63	48.44	0.90
1978-79	6814	5726	154.93	2.71	58.35	1.02
1979-80	8908	6459	155.08	2.40	48.56	0.75
1980-81	12524	6711	117.06	1.74	34.75	0.52
1981-82	13671	7803	92.51	1.19	30.20	0.39
1982-83	14356	8908	92.85	1.04	16.37	0.18
1983-84	15763	9865	111.66	1.13	5.44	0.06
1984-85	16592	11396	209.02	1.83*	64.81	0.57

Note: *1.71 excluding manufactured/value added items.

Source: Spices: Spices Export Promotion Council, Cochin.
Cardamom: Cardamom Board, Cochin.

India's Imports and Exports: Reserve Bank of India, Cochin.

An examination of the unit price realised per kilogram of spices exported from India reveals that it was Rs.11.74 in 1975-76⁵. This improved to Rs.17.47

Table 1.2

Exports of Spices: Quantity, Value and Unit Price:
1975-76 to 1984-85

Year	Quantity (M.T)	Value (Rs. crores)	Unit Price (Rs./kg.)
1975-76	61952	72.72	11.74
1976-77	60957	75.98	12.46
1977-78	81228	141.88	17.47
1978-79	104844	154.93	14.78
1979-80	114959	155.08	13.49
1980-81	92538	117.06	12.65
1981-82	68375	92.51	13.52
1982-83	75117	92.85	12.36
1983-84	85835	111.66	13.00
1984-85	89155	209.02	23.44

Source: Spices Export Promotion Council, Cochin.

in 1977-78, and declined in the coming years, reaching a low level of Rs.12.36 per kilogram in 1982-83, the peak drought year in Kerala. The facts which are to be noted here are that the prices of spices have not improved even with (i) substantial reduction in supply of major spices and (ii) increase in the quantity of export of low volume-high price items like curry powders, oils and oleo-resins of spices. The above phenomenon of fall in prices

⁵For details, see Table 1.2

of spices in India assumes greater significance when we look at the movement of index number of prices of all commodities in India. Assuming an index number of 100 in the base year 1970-71, the index number of all commodities stood at 173.0 in 1975-76, 257.3 in 1980-81, 281.3 in 1981-82, 288.7 in 1982-83, 316.0 in 1983-84 and 338.3 in 1984-85. Against this, the index number of wholesale prices of spices were 186.5 in 1975-76 (base year 1970-71 = 100) 122.2 in 1980-81, 170.6 in 1981-82, 186.3 in 1982-83, 199.0 in 1983-84 and 279.6 in 1984-85.

Spices, pepper and cardamom

The importance of cardamom in the spectrum of spices exported from India can be seen in Table 1.3. Table 1.4 gives the details of the exports and unit prices of cardamom and pepper from 1970-71 to 1984-85.

The export earnings of cardamom in comparison with pepper may be seen in Graph 1.1.

Table 1.4 illustrates that the unit prices of cardamom and pepper fluctuated violently on a declining trend from 1979-80 to 1983-84, even when the wholesale prices of all commodities in India showed a sharp upward trend during the same period.

During the period 1965-66 to 1974-75, the value of cardamom exported from India was more or less

Table 1.3

Export of Spices, Pepper and Cardamom from India:
1965-66 to 1984-85

(Value in Rupees/crores)

	1965-66 to 1969-70	1970-71 to 1974-75	1975-76 to 1979-80	1980-81 to 1984-85
1. All spices	27.51	44.75	120.12	124.62
2. Pepper	12.38	21.67	36.85	39.64
3. Cardamom	6.98	10.19	37.75	40.11
4. Export of pepper and cardamom as percentage of export of all spices	70.37	71.19	62.11	63.99
5. Export of pepper as percentage of export of all spices	45.00	48.42	30.68	31.80
6. Export of cardamom as percentage of export of all spices	25.37	22.77	31.43	32.19

Source: Spices and pepper: Spices Export Promotion
 Council, Cochin.
 Cardamom : Cardamom Board, Cochin.

Table 1.4

Exports and Prices of Cardamom and Pepper: 1970-71 to
1984-85

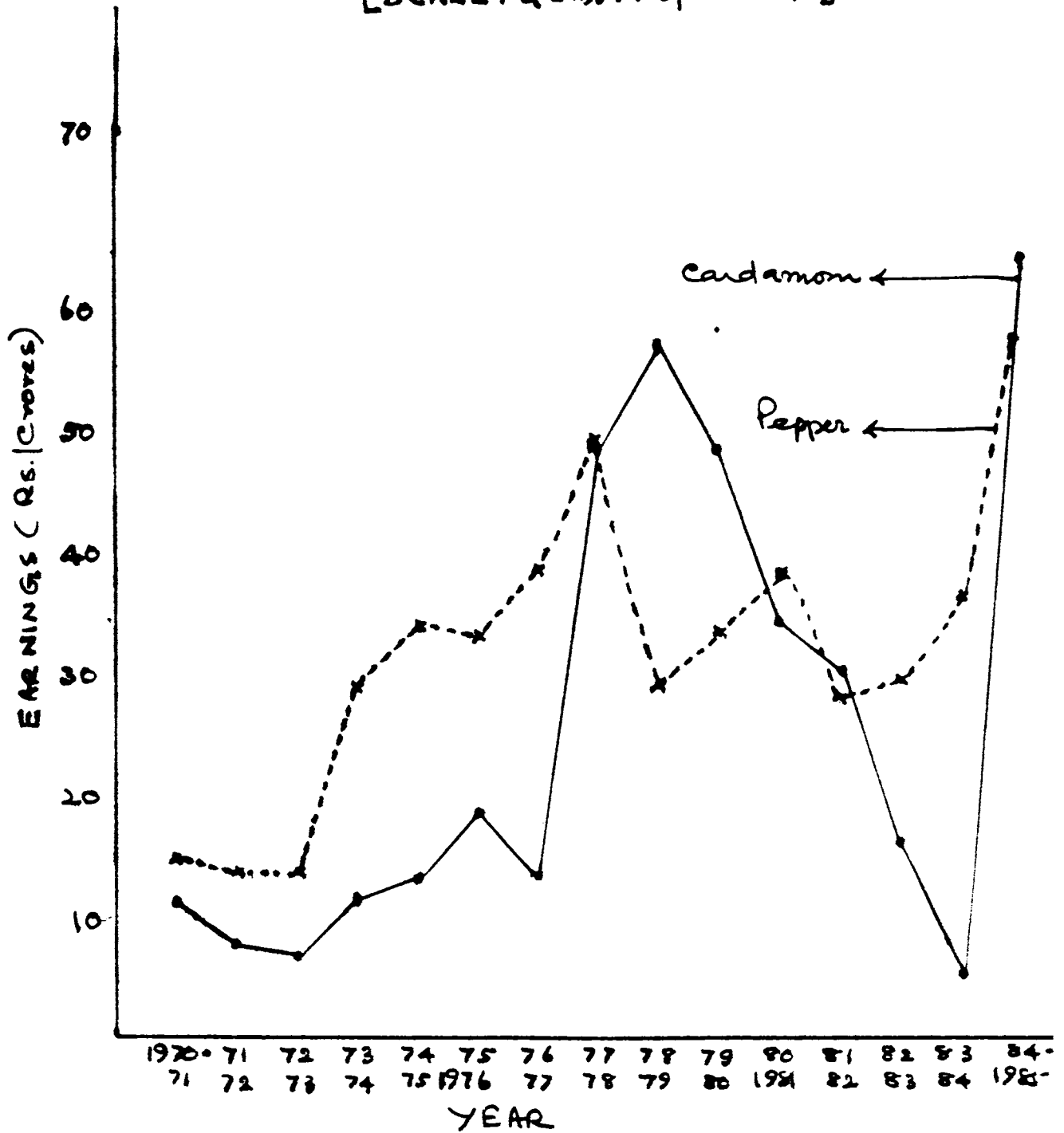
Year	Cardamom			Pepper		
	Quantity (M.T)	Value (Rs./crores)	Unit price (Rs./kg.)	Quantity (M.T)	Value (Rs./crores)	Unit price (Rs./kg.)
1970-71	1705	11.22	65.78	17.97	15.25	8.49
1971-72	2147	8.03	37.41	19.25	14.82	7.70
1972-73	1384	6.85	49.45	19.96	14.31	7.17
1973-74	1813	11.55	63.71	31.65	29.53	9.33
1974-75	1626	13.32	81.92	26.34	34.48	13.09
1975-76	1941	19.38	99.88	24.23	33.88	13.99
1976-77	893*	14.03	157.17	20.53	38.24	18.63
1977-78	2763	48.44	175.28	24.68	49.51	20.06
1978-79	2876	58.35	202.92	15.72	29.12	18.52
1979-80	2636	48.56	184.23	20.90	33.52	16.04
1980-81	2345	34.75	148.18	26.36	38.95	14.77
1981-82	2325	30.20	129.87	20.61	27.98	13.58
1982-83	1032**	16.37	158.60	22.59	29.39	13.00
1983-84	258**	5.44	210.90	25.79	41.35	16.03
1984-85	2383	64.81	271.92	25.42	60.54	23.82

Note: * Export duty of Rs.50/- per kg. was imposed by Government of India during the year, which was reduced/removed later.

** Acute shortage of production in the country due to severe drought in Kerala.

Source: Pepper: Spices Export Promotion Council, Cochin.
Cardamom: Cardamom Board, Cochin.

GRAPH 1.2.
 EXPORT EARNINGS OF CARDAMOM & PEPPER
 [SCALE: 2 cms: Rs. Crores = 10]



50 per cent of that of pepper exported from India. But during the period from 1975-76 to 1984-85, cardamom made significant progress in production, exports, unit price and export earnings, and stood equal to pepper in export earnings. In fact, during the years 1978-79, 1979-80, 1981-82 and 1984-85 cardamom even surpassed pepper in export value. However, the earnings contributed by both cardamom and pepper together in the total exports of spices declined to 62 per cent during the decade 1975-76 to 1984-85 from the 71 per cent recorded during the previous ten year period of 1965-66 to 1974-75. The fall in prices of pepper in the period 1978-79 to 1983-84 and that of cardamom from 1979-80 to 1982-83 and the growth of exports in chillies, turmeric, curry powder and the oils and oleoresins of spices contributed to the above phenomenon.

From the data and discussions above, it is quite clear that there have been substantial fluctuations in the production, prices, exports and export earnings, especially in the cases of cardamom and pepper⁶. The mixed trend in prices and the vagaries of nature were the major reasons for the changing trends of production and export of spices from India. The spices

⁶For details, see Appendix II.

trade of India was also characterised by the inelasticities of supply and demand, especially of short period supply, which resulted in wide price fluctuations.

All the spices producing countries are, generally speaking, developing countries, characterised by an economy dominated by the primary sector. Primary and agricultural products are subject to a greater degree of instability of prices, when compared to manufactured products. Hence, prices prove to be ineffective regulators in respect of agricultural products, because the farmers continue to produce even when the prices tend to fall. This is more true in the case of perennial crops like cardamom and pepper, with special variants and physical conditions imposing a rigidity on supply response. It is said that the price incentive is the best incentive for farmers to maximise production. But this has not been always true in the cases of perennial crops like cardamom and pepper as they are highly susceptible to vagaries of nature and incidence of pests and diseases. Also, when prices fall substantially, production is badly affected resulting in shortages in the ensuing years owing to cuts made in the inputs by the growers. In the case of annual and seasonal crops like ginger and turmeric, the growers may look for

alternative crops, even though there are certain constraints in doing so, depending upon the location and topography, the age of the present crop, and the availability of other crops and their suitability, etc. The variable costs of certain perennial crops are often very low to give them a substantial advantage over alternative crops, as long as the fixed investments remain the same. This problem is compounded further if these commodities face low price elasticities of demand as in the case of almost all important varieties of spices. Over and above this, most of the farmers face additional uncertainty regarding yields. In the case of export oriented primary agricultural commodities of the developing nations, their bargaining power is so weak that they have to accept whatever price is offered by the developed countries, so much so that there is no serious fall in production and supply in trade between the two groups. The primary producers in the developing countries are the worst sufferers in such a situation. The development efforts of these countries demand more and more imports of capital goods and equipments, leading to acute problems of foreign exchange and unfavourable balance of trade. This is evident from the statistics provided in Table 1.1. As M.S. Swaminathan has said,

"By the end of 1984, the total long term and short term outstanding debts of the developing countries reached US \$812,000 million - an increase of more than 70 per cent since 1980 and now equivalent to 145 per cent of total export earnings"⁷.

The increasing economic instability retards economic progress, arising out of short term fluctuations in the export earnings of the primary products of developing countries.

The Food and Agricultural Organisation in its report in 1972 pointed out that:

"in all developed countries agriculture has become the most administered sector of economy with its guaranteed prices, its subsidies, its import duties, its nontariff barriers and a host of other interventions. In the developed, centrally planned economies, planning and administrative controls are, of course comprehensive"⁸.

Peasant production is the main alternative to wage employment. Except in the case of a very few large plantations, 95 per cent of the producers of India's spices are small farmers who cannot stand the violent

⁷Swaminathan, M.S., "Agricultural Research - Challenges Ahead", Facts for You, Annual 1986, (New Delhi, 1986) p.27.

⁸F.A.O., Agricultural Adjustments in Developed Countries, (Rome, 1972) p.27.

fluctuations of world market prices for spices and their subsequent impacts on domestic prices. Equally serious are the problems of the large growers of spices. In becoming a large business enterprise farming becomes, in one sense, a more risky one.

As the F.A.O. report states:

"as long as current operating expenses constituted no more than say 20 per cent of the value of gross output, a drop of some 20 per cent in the latter in a particular year, due to disease or bad weather caused his income to fall by only a quarter, whereas when operating expenses climb to 60 per cent of output, a 20 per cent drop in sales will cut his income in half, and out of the income, he has to pay a larger amount than formerly in interest on borrowed capital"⁹.

The plight of the large growers of cardamom is still worse when compared to that of the growers of other spices. A large number of cardamom plantations are on lease lands. The land tax or lease charges, agricultural income tax and sales tax (growers of cardamom have to pay 5 per cent sales tax in Kerala) are to be paid by the growers. During private conversations, many of the medium and large growers admitted to the rese-

⁹Ibid., p.40.

archer that they evade sales tax and agricultural income tax to the extent possible, as a matter of routine. Their contention is that the tax structure on cardamom, especially the agricultural income tax assessed in Kerala, is highly unrealistic and arbitrary and has no bearing on the yield pattern of estates or price realisation for the produce.¹⁰ Also, cardamom is the only agricultural crop in Kerala for which the grower has to pay sales tax and that too at an exorbitant rate of 5 per cent. The request of cardamom growers in Kerala for introducing a compounding system of agricultural income tax (based on acreage) as is prevalent in Tamil Nadu has not been agreed to by the State Government so far.

There is undue emphasis on increasing production on the farm front. But the most important aspect of ensuring a fair price for the produce is often neglected.

"When the export expansion of the present crop merely reproduced existing production conditions on a larger scale, the stimulus to develop was less than it would have been, if the expansionary process had entailed the introduction of new skills and more productive recombinations of factors."¹¹

¹⁰ For details, see Appendix III.

¹¹ Meir, G.M., International Trade and Development, (London, 1964) pp.180-181.

The problem then centres around the problem of attaining greater efficiency by introduction of improved varieties of crop, irrigation, pest and disease control, use of fertilizers and an incentive to production, based on stable and remunerative prices.

The uncertainty of getting remunerative prices for the produce and unpredictability of the weather conditions lead to unsustained interest by the growers on maximising the production of cardamom in the country. Unless this vicious circle is broken, the progress of cardamom industry will continue to be vitiated by uncertainties and unsteadiness.

CHAPTER II

CARDAMOM AND ITS CULTIVATION

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CARDAMOM AND ITS CULTIVATION

As mentioned in the earlier chapter, the true cardamom of commerce is the dried fruit of the plant Elettaria cardamomum Maton¹. The whole fruit 8 to 16 millimeters in size, is a green three sided oval capsule containing 15 to 20 dark, hard, angular seeds. The cardamom seeds have a characteristic warm, slightly pungent and highly aromatic flavour, faintly reminiscent of camphor. Decorticated cardamom capsules consist of husked, dried seeds. The essential oil occurs in the large parenchyma cells underlying the epidermis of the seed coat. In recent times, cardamom oils and oleoresins are also extracted from cardamom capsules or seeds and are used like cardamom capsules, seeds and powder.

Native to the moist, ever-green forests of south India, cardamoms were collected from wild plants in early days. Now it is cultivated mainly in India, Guatemala, Tanzania, Sri Lanka and, to a very small extent

¹For a detailed discussion of the commercial varieties and grades of cardamom see, Chapter V.

in El Salvador, Honduras, Papua New Guinea, Thailand, Cambodia, Vietnam and Laos.

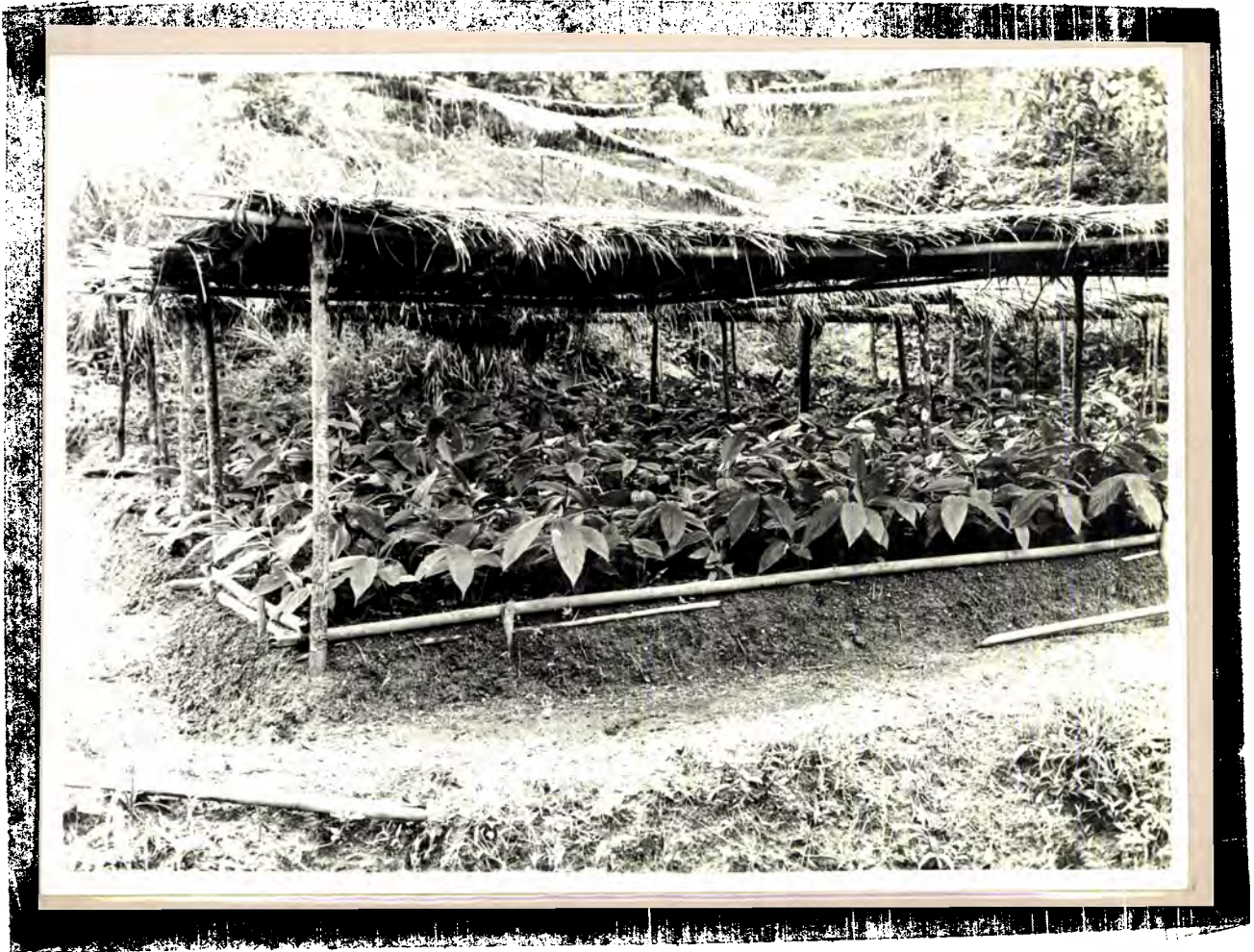
The cardamom plant

The Elettaria cardamomum Maton belongs to the natural order Scitaminae, family Zingiberaceae under monocotyledons. It is a perennial plant having an underground stem with aerial shoots. Two varieties of cardamom plants are identified, and they are Elettaria cardamomum Maton variety Major, made up of wild indigenous types and Elettaria cardamomum Maton variety Minor, comprising of cultivated types like 'mysore', 'malabar', and 'vazhukka'.

A mature cardamom plant may measure about two to four meters in height. It is a shallow rooted plant. Flowers are borne on panicles which emerge directly from the swollen base of the aerial shoot. The peak period of emergence of panicle is from November to February. Flowering normally commences from April and extends upto October, June to August being the peak flowering period. After fruit set, about 100 days are required for the seeds to attain maturity.

Cardamom plants of cultivar 'malabar' type are medium sized, and attain two to three metres of height. The panicles are prostrate; and the fruits are

PLATE 2.2



A PRIMARY NURSERY OF CARDAMOM

round to egg shaped. This type is mostly cultivated in Karnataka, and to a lesser extent in Kerala and Tamilnadu.

Plants belonging to cultivar 'mysore' type are robust and attain three to four metres of height. The panicles are erect; and the capsules bold and longish. This type is mostly cultivated in Kerala.

Cultivar 'vazhukka' is a natural hybrid of the 'malabar' and 'mysore' types; and consequently, the plants belong to this type exhibit various characteristics intermediate to the above two types. The plants are robust like the 'mysore' and the panicles are semi-erect in nature. Cardamom capsules of this type are bold and roundish. It is extensively cultivated in Kerala and Tamilnadu.

Cardamom Cultivation²

Cardamom is grown in areas where the annual rainfall ranges from 1500-4000 mm, in a temperature range of 10°-35°C and an altitude of 600-1200 metres above msl. Cardamom is generally grown in forest loamy soils. The soils of these tracts are generally acidic in nature,

²The following discussion on cardamom cultivation is based on; Cardamom Board, Cardamom - Package of Practices, (Cochin, 1984).

with pH value of about 5.0 to 6.5. Adequate drainage is quite essential for successful maintenance of the crop.

Cardamom is propagated by the vegetative method, i.e., by suckers (rhizomes) as well as by using seedlings. The suckers are generally used for gap-filling to replace the degenerated and diseased plants. Propagation by raising seedlings from seeds, and later transplanting them in the main field is the most commonly followed practice. Vegetative propagation is simple and reliable and permits the multiplication of any selected clump or type. Plants by vegetative propagation commence bearing earlier than the seedlings transplanted. Vegetative propagation is advantageous in areas where 'katte' disease is not a problem.

For getting quality seedlings of cardamom, the nursery has to be managed carefully and scientifically. Two stages of nursery, viz., primary and secondary, are involved in raising seedlings. When the seedlings become ten months old, they are transplanted to a second nursery, where, the seedlings are maintained for another eight months before planting in the field.

PLATE 2.3



A SECONDARY NURSERY OF CARDAMOM -
SPRAYING PLANT PROTECTION CHEMICALS

PLATE 2.4



PLANTING THE CARDAMOM SEEDLING
IN THE FIELD

PLATE 2.5



MYSORE VARIETY OF CARDAMOM PLANT

may be irrigated once in 15 to 20 days. It is very important to follow the regular schedule of irrigation at frequent intervals to supplement the soil moisture, which would help in the initiation of panicles, flowering and setting of fruits etc.

Pests and disease management

More than 40 species of insects and mites are reported to be pests of cardamom. Among them, 'thrips', 'hairy caterpillars', 'shoot and capsule borers', 'root borers', 'shootflies' and 'white flies' are commonly found in all the cardamom growing tracts of south India. Of these pests, 'thrips' are the most destructive and persistent ones in cardamom plants. These insects lacerate the surface tissues of tender capsules causing injuries, which develop as corky encrustations on pods. The cardamom capsules appear stunted, malformed and shrivelled. The seeds from such capsules are poor in aroma and flavour. Among other pests, 'shoot, capsule and root borers' are more damageous species. Proper use of pesticides in time would reduce the damages of cardamom pests.

Cardamom plants are also susceptible to a number of diseases caused by virus, fungi and bacteria. The major diseases which cause considerable economic losses

PLATE 2.6



MALABAR VARIETY OF CARDAMOM PLANT

PLATE 2.7



MANURING FOR CARDAMOM PLANT

PLATE 2.8



DUSTING PLANT PROTECTION CHEMICAL
AGAINST PESTS AND DISEASES

are 'katte' or 'mosic' or 'marble', 'clump rot or rhizome rot' and 'chenthal'. Among these, 'katte' and rot diseases are the dreaded ones. 'Katte' is a virus disease and is prevalent in all the cardamom growing areas in India. No measures to treat this disease have been found so far. The only remedy is to identify the diseased plants and destroy them completely to avoid the spread of the disease. The loss of crop due to 'katte' disease is maximum in India compared to any other disease or pest. The productivity and production of cardamom plantations in India are also largely affected due to large scale incidence of 'katte' in cardamom plantations. As 'katte' affected plants continue to give some yield for some more time, the growers are reluctant to uproot and destroy the disease affected plants. The rot diseases also cause considerable damages to the plantations. These are caused by fungi and are associated with high rainfall conditions. Rot diseases can be controlled by taking proper prophylactic measures before the onset of monsoon and in between dry spells during monsoon. 'Chenthal' disease is not a serious problem in cardamom plantations.

Beekeeping in cardamom plantations

Though self-compatible, cardamom is a cross pollinated crop, as self pollination is prevented in the

flower due to slight protrusion of the stigma above the stamen. Studies at Cardamom Research Station, Mudgere (Karnataka) and the Indian Cardamom Research Institute, Myladumpara (Kerala) have revealed that the honey bees are the principal pollinators of cardamom flowers. It was found that significant increase in fruit setting and its quality could be obtained in bee pollinated flowers. Hence bee-keeping is recommended in cardamom plantations for improving the productivity and quality of cardamom. Field studies have shown that four beehives per hectare of plantation would be sufficient to get sufficient number of bee pollinators. As maximum forage activity of bees are found in the morning hours of the day, it has been suggested that pesticide applications may be regulated accordingly to reduce damage to the bees. Bee-keeping not only enhances the productivity and quality of cardamom, but also brings in additional income to the growers from the honey collected in the beehives.

Harvesting

Cardamom plants normally start bearing capsules from third year of planting. However, economic yields are obtained from the fourth year onwards. In most of the areas, the peak period of harvest is September, October and November. The crop is harvested

at an interval of 15 to 20 days in Karnataka and 30 days in Kerala and Tamilnadu. Mature capsules are to be harvested just before the full ripeness for obtaining green colour on curing, for preventing splitting of capsules, for avoiding squirrel damage and for higher percentage of recovery.

Details of curing cardamom are discussed in Chapter V.

RESEARCH ON CARDAMOM CULTURE

Basic research on cardamom cultivation is done by the Central Plantation Crops Research Institute, Kasargod, Kerala. The Institute has set up a Research Station at Appangala, Karnataka. The Kerala Agricultural University, Trichur, Kerala has a similar cardamom research station at Pampadumpara, Kerala. The University of Agricultural Sciences, Bangalore, also has a cardamom research station at Mudgere, Karnataka. The Cardamom Board, Cochin has set up its Indian Cardamom Research Institute at Myladumpara, Kerala with Regional Research Stations at Saklespur, Karnataka and Thadiankuddissi, Tamilnadu. These are the main institutions undertaking research on cardamom cultivation. While the Research Institute of Cardamom Board started research activities

on cardamom culture only in 1969, the other institutions have been at work for the last several years.

Field investigations and studies reveal that findings of all these institutions are mainly confined to certain agronomical practices and pests and disease control. Much progress has not been made on the fundamental aspects of cardamom plant and its cultivation. Though 'katte' is a major virus disease affecting the entire cardamom plantations in India, no disease resistant plant has yet been developed by any of these research stations. So also is the case in the matter of other diseases and pests.

Genetic engineering and tissue culture have made tremendous progress in the agricultural sector as a whole in India and abroad. But, no significant advancement has been made so far in these areas in relation to cardamom either in India or in Guatemala.

The cultural research programmes on cardamom should be activated as in the case of coffee and rubber by the respective commodity boards, and the fruits of research activities should be made available to the growers for improving the productivity and production of cardamom in the country. An immediate step which could

be taken up in this context is the propagation of high yielding plants by the tissue culture method on a massive scale so that productivity and production can be improved in the shortest possible time.

FACTORS INFLUENCING PRODUCTIVITY AND PRODUCTION

Growers' experience has shown that the most important single factor that influences productivity and production is weather. The fall in productivity and production in the lean years of production, especially 1982-83 and 1983-84, can be definitely attributed to the severe drought in the cardamom plantation areas. As stated earlier, cardamom is a shallow rooted plant and hence its successful growth heavily depends upon well distributed rainfall all through the year for atleast 180 to 220 days. Guatemala, which has a productivity of over 250 kgs per hectare is reported to have a well distributed rainfall all through the year. In Guatemala practically no shade trees are also put up..

"The entire cardamom estates look like viewing tea estates without any blockage of view by shade trees. From the details of rainfall in Guatemala, it could be observed that there was no intense rainfall during July-September nor there was any dry weather of the magnitude seen in India".³

³Krishna, K.V.S., Improving Cardamom production, (Coonoor, 1982) p.10.

Cardamom is mainly cultivated in the Idukki district of Kerala which is a drought prone area. At least in two out of five years drought causes severe loss of crop, as could be seen from the year-wise production statistics given elsewhere.

"The drought usually becomes so serious, and practically all the small streams in the plantation area go dry annually for a period of three to four months, ruling out the possibility of using sprinklers for irrigation".⁴

The Cardamom Board advocates mulching and protection of plants by growing suitable shade trees. The Board also has a scheme for supplying sprinkler irrigation equipment on hire-purchase basis. But as quoted earlier, due to non-availability of water in the small streams during summer months, the response to the scheme for supply of sprinkler irrigation units is very poor from the growers. A scheme for tapping and utilizing water from the bigger streams and the smaller rivers in the area have been taken up by the Board for implementation during VII Plan period.

As in the case of drought, excessive rains in the plantation areas play havoc in the production of cardamom in the country. Though excessive rains have

⁴Ibid., p.11.

caused considerable damage to the industry twice during the last 20 years in 1969 and 1985, the damages have never been so intense as those of drought. Excess rain leads to large scale soil erosion in the slopy cardamom plantations. Excessive rains also bring in rhizome and fruit rot diseases to the plant. Rot diseases could be brought under control, if proper prophylactic measures are taken in time. The soil conservation measures are very costly in cardamom plantations because of the lie of the land in most of the cases. Of late, soil erosion has become a big problem in the plantation areas because of the large scale felling of trees and denudation of forests.

Other important factors influencing the production of cardamom are, elevation from msl; lie of the land and angle of sunshire; frost, wind and hail; nature of soil; shade and nature of shade trees; number of plants per hectare or density of plant population; varieties of plants used depending upon the elevational and climatic requirements; manuring patterns; pests and disease control; harvesting patterns; and above all, the management practices.

As these factors do not have much relevance to this study, they are not discussed in detail. However, one point which requires to be emphasized is that, of all,

drought has the maximum adverse impact on the production and productivity of cardamom in the country.

A close look at the developmental expenditure pattern of the Cardamom Board for the last 15 years reveals that the amount utilized so far for overcoming drought damages has been far from satisfactory. This is examined in detail in Chapter XI.

CHAPTER III

WORLD SUPPLY AND DEMAND FOR CARDAMOM - PAST PRESENT AND FUTURE

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CHAPTER III

WORLD SUPPLY AND DEMAND FOR CARDAMOM - PAST, PRESENT AND FUTURE

For centuries, India has been the major supplier of cardamom to the world. Though Sri Lanka has also been producing cardamom ever since India started producing, the Sri Lankan cardamom has had no appreciable significance in the world trade of spices. By the first half of 1950's Guatemala and Tanzania emerged as new producers and exporters of cardamom. In 1956, Guatemala produced 32 MT of cardamom. This reached a level of 650 MT in 1962-63, as against the Indian production of 3400 MT in that year. The Indian production went up further, reaching a level of 4130 M.T. in 1963-64. The glut in the world market due to increased production in India and Guatemala and a lower consumption in the world during the early sixties adversely affected the production of cardamom in both the countries in subsequent years. Consequently, the average production in India and Guatemala remained at about 2600 MT and 660 MT respectively, during the period 1964-65 to 1972-73. The

production of cardamom in Sri Lanka and Tanzania was only about 300 M.T. and 200 M.T. respectively during the period, 1964-65 to 1972-73.

Until the late sixties, India held virtual monopoly of the supply of cardamom in the world market. The main users of cardamom other than countries in the Middle East have been India and Scandinavia. In Saudi Arabia, Kuwait, Qatar, U.A.E., etc. cardamom is highly valued, particularly in the making of cardamom coffee known as 'Gahwa'¹ or 'Arab coffee'. The oil boom in the Arab nations in the early seventies gave a big boost to cardamom exports to the Middle East countries. The increasing affluence in the Middle East and the spread of the habit of 'Gahwa' drinking among the low income groups increased the demand for cardamom in these countries. There was also an increase in the export price of cardamom.

As a result of the above, cardamom cultivation was introduced as a new crop in several countries, where there had been no cultivation and consumption of cardamom earlier. While India, Guatemala, Tanzania and Sri Lanka strived to strengthen their production, other tropical

¹For details, see, Chapter X.

countries like Papua New Guinea, El Salvador, Costa Rica and Honduras introduced cardamom cultivation in the late seventies.

Production of cardamom in India was sought to be increased through more scientific cultivation. The use of better yielding varieties, better pest control, more scientific land management, etc., were adopted in India. Guatemala expanded the area under the crop and thereby strived to increase production. The constitution of the Cardamom Board in India in 1966 also gave a big boost to the cardamom plantation industry in India. The production which was only about 2000 MT in 1966 was increased to about 4000 MT in 1985. This increase in production was achieved by encouraging regular re-planting in existing plantations and through application of fertilizers and the fighting of pests and diseases. On a very conservative estimate, it is projected that India may reach a production level of 5800 MT. by 1989-90, with an export capacity of 3500 MT provided the vagaries of nature do not affect the crop as had happened in 1982-83 and 1983-84. This projection of production is also made on the basis of the proposed development of infrastructure for tapping the water resources in cardamom plantations in India by the Cardamom Board during the VII Plan period.²

²This is discussed in Chapter XI.

Guatemala, a comparative newcomer to the field of cardamom production and export, was producing only about 750 to 1500 MT. per annum in the early seventies. But she is now producing about 4500 to 5000 MT. per year. This is nearly 1000 to 1500 MT more than India's production during the corresponding period.

India's position as the principal supplier of cardamom to the world market till 1974-75 was thus taken over by Guatemala in 1975-76. Since then, Guatemala remains as the major competitor for India in the world market for cardamom. Tables 3.1, 3.2 and 3.3 and Graphs 3.1. and 3.2 illustrate this fact.

It may be seen from Table 3.1 that in 1970-71 the share of India in the total world production of cardamom was 67 per cent and that of Guatemala, Sri Lanka and Tanzania were 21 per cent, 6 per cent and 6 per cent respectively. In the two subsequent years of 1971-72 and 1972-73, cardamom production in Guatemala declined. But from 1973-74 onwards, it has been on the increase. In 1983-84, Guatemala's production reached 4500 MT, accounting for 66 per cent of world production. During this period the share of India was only 24 per cent and that of Sri Lanka and Tanzania were 2 per cent and 6 per cent respectively. In 1984-85, world production

Table 3.1

World Production of Cardamom : 1960-'61 to 1984-'85

(Quantity in MT., Figures in brackets are percentages)

Year	India	Guatemala*	Sri Lanka*	Tanzania*	World
1960-61	3353 (84)	650 (16)	NA	NA	4003+
1961-62	3205 (84)	600 (16)	NA	NA	3805+
1962-63	3400 (76)	1100 (24)	NA	NA	4500+
1963-64	4130 (91)	400 (9)	NA	NA	4530+
1964-65	2200 (85)	400 (15)	NA	NA	2600+
1965-66	2000(100)	NA	NA	NA	2000+
1966-67	2700 (86)	450 (14)	NA	NA	3150+
1967-68	2400 (81)	550 (19)	NA	NA	2950+
1968-69	2100 (76)	650 (24)	NA	NA	2750+
1969-70	2300 (74)	800 (26)	NA	NA	3100+
1970-71	3170 (67)	1000 (21)	300 (6)	240 (6)	4710
1971-72	3785 (75)	750 (15)	280 (6)	210 (4)	5025
1972-73	2670 (69)	700 (18)	325 (8)	150 (5)	3845
1973-74	2780 (55)	1250 (25)	280 (6)	740 (14)	5050
1974-75	2900 (53)	1520 (28)	225 (4)	820 (15)	5465
1975-76	3000 (47)	1775 (28)	500 (8)	1050 (17)	6325
1976-77	2400 (46)	1975 (37)	250 (5)	620 (12)	5245
1977-78	3900 (58)	2350 (35)	130 (2)	300 (5)	6680
1978-79	4000 (58)	2200 (32)	230 (3)	460 (7)	6890
1979-80	4500 (62)	2100 (29)	275 (4)	400 (5)	7275
1980-81	4400 (51)	3400 (39)	250 (3)	600 (7)	8650
1981-82	4100 (50)	3450 (41)	330 (4)	400 (5)	8280
1982-83	2900 (40)	3600 (50)	320 (4)	450 (6)	7270
1983-84	1600 (24)	4500 (66)	230 (3)	450 (7)	6780
1984-85	3900 (39)	5000 (51)	200 (2)	450 (6)	9900

Note: N.A.: Not available; + : incomplete figures.

● : Including production of new producing countries.

* : Estimates based on export figures.

Source: Cardamom Board, Cochin.

Table 3.2

World Export of Cardamom : 1960-'61 to 1984-'85

(Quantity in M.T.; Figures in brackets are percentages)

Year	India	Gautemala	Sri Lanka	Tanzania	World
1960-61	2034 (77)	621 (23)	NA	NA	2655+
1961-62	2364 (81)	563 (19)	NA	NA	2927+
1962-63	2259 (68)	1039 (32)	NA	NA	3298+
1963-64	2306 (86)	377 (14)	NA	NA	2683+
1964-65	1503 (80)	377 (20)	NA	NA	1880+
1965-66	1434 (73)	428 (27)	NA	NA	1562+
1966-67	1590 (79)	436 (21)	NA	NA	2026+
1967-68	1451 (74)	522 (26)	NA	NA	1973+
1968-69	1291 (68)	608 (32)	NA	NA	1899+
1969-70	1149 (50)	748 (32)	161 (7)	257 (11)	2315
1970-71	1705 (55)	979 (31)	202 (7)	215 (7)	3101
1971-72	2147 (66)	719 (22)	186 (6)	189 (6)	3241
1972-73	1384 (58)	658 (27)	215 (9)	136 (6)	2393
1973-74	1813 (47)	1200 (31)	186 (5)	676 (17)	3875
1974-75	1626 (41)	1472 (37)	147 (4)	745 (18)	3990
1975-76	1941 (39)	1700 (34)	334 (7)	987 (20)	4962
1976-77	893 (25)	1904 (54)	162 (5)	570 (16)	3529
1977-78	2763 (51)	2264 (42)	84 (2)	268 (5)	5379
1978-79	2876 (51)	2107 (38)	149 (3)	412 (7)	5544
1979-80	2636 (50)	2050 (39)	179 (4)	262 (7)	5227
1980-81	2345 (37)	3360 (52)	164 (3)	541 (8)	6410
1981-82	2325 (37)	3370 (54)	216 (3)	350 (6)	6261
1982-83	1302 (20)	3500 (68)	209 (4)	400 (8)	5141
1983-84	258 (5)	4400 (85)	140 (3)	400 (7)	5198
1984-85	2383 (30)	4900 (61)	117 (2)	400 (5)	8050@

Note: NA : Not available; + : Incomplete figures.

@ : Including exports from other new countries.

Source: Cardamom Board, Cochin.

Table 3.3

World Export Value of cardamom: 1960-61 to 1984-85

(Value in Rs./crores; Figures in brackets are percentages)

Year	India	Guatemala	Tanzania	Sri Lanka	World
1960-61	3.67 (87)	0.5286 (13)	NA	NA	4.1986+
1961-62	3.59 (88)	0.4827 (12)	NA	NA	4.0727+
1962-63	2.67 (84)	0.5231 (16)	NA	NA	3.1931+
1963-64	3.20 (83)	0.6371 (17)	NA	NA	3.8371+
1964-65	2.72 (71)	0.6721 (22)	NA	NA	3.4821+
1965-66	4.23 (100)	NA	NA	NA	4.2300+
1966-67	7.96 (82)	1.7177 (18)	NA	NA	9.6777+
1967-68	7.03 (80)	1.7128 (20)	NA	NA	8.7428+
1968-69	6.74 (83)	1.7300 (17)	NA	NA	8.1100+
1969-70	8.93 (81)	2.1543 (19)	NA	NA	11.0843+
1970-71	11.22 (76)	3.5314 (24)	NA	NA	44.5714+
1971-72	8.03 (68)	3.0309 (26)	NA	0.8089 (6)	11.8698+
1972-73	6.85 (68)	2.0501 (21)	0.3215 (3)	0.7989 (8)	10.0205
1973-74	11.55 (63)	4.1092 (22)	1.6254 (9)	1.1748 (6)	18.4594
1974-75	13.32 (57)	6.9025 (30)	2.0220 (9)	0.8989 (4)	23.1434
1975-76	19.38 (59)	8.9504 (29)	2.4520 (8)	1.7692 (5)	32.5516
1976-77	14.03 (44)	13.8689 (44)	2.1352 (7)	1.6950 (5)	31.7291
1977-78	48.44 (63)	24.0848 (31)	2.8245 (4)	1.5844 (2)	76.9337
1978-79	58.35 (67)	24.3825 (28)	2.3975 (3)	2.1369 (2)	27.2669
1979-80	48.56 (49)	43.7544 (44)	3.4923 (4)	2.9253 (3)	98.7320
1980-81	35.75 (40)	49.4248 (57)	0.9294 (1)	2.2454 (3)	87.3496
1981-82	30.20 (55)	23.2767 (42)	NA	2.7590 (4)	55.2357+
1982-83	16.37 (	NA	NA	NA	NA
1983-84	5.44	NA	NA	NA	NA
1984-85	64.81	NA	NA	NA	NA

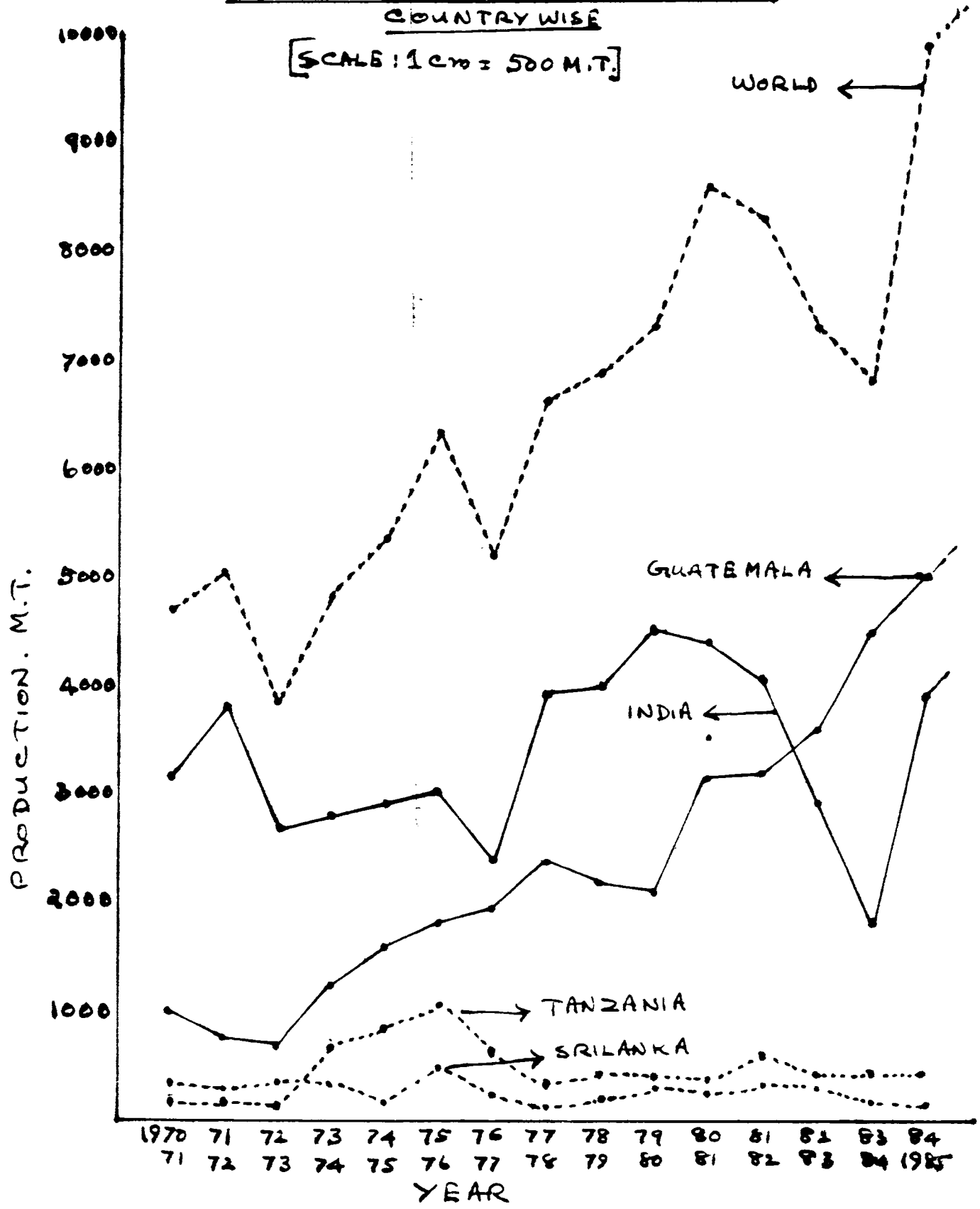
Note: NA : Not available

+ : Incomplete figures

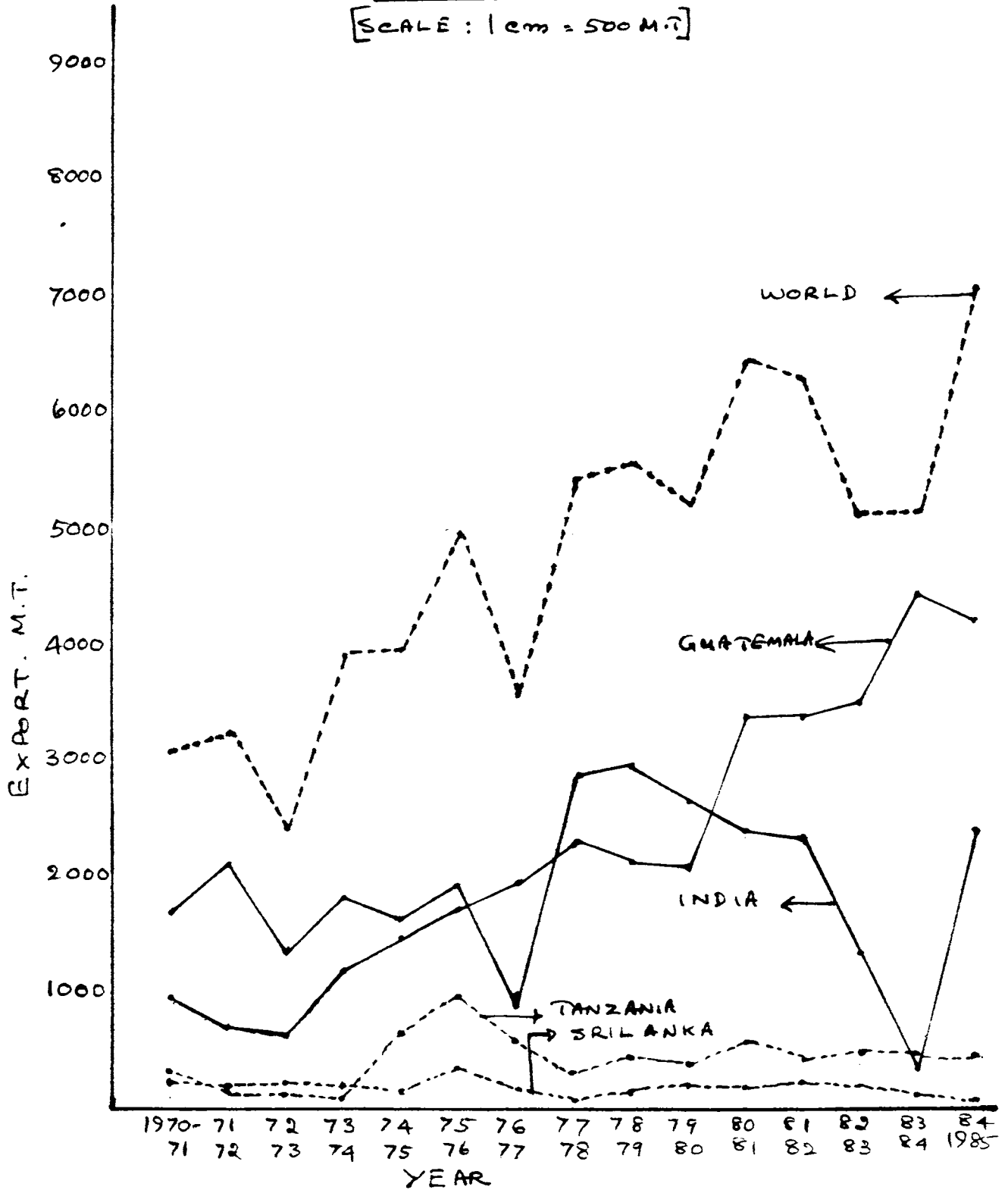
Source : Cardamom Board, Cochin.

GRAPH - 3.1.
WORLD PRODUCTION OF CARDAMOM
COUNTRY WISE

[SCALE: 1cm = 500 M.T.]



GRAPH 3.2
WORLD EXPORT OF CARDAMOM
COUNTRY WISE
 [SCALE : 1 cm = 500 M.T.]



was 9900 MT., of which India's share was 3900 MT. (39 per cent) while that of Guatemala was 5000 MT (51 per cent). The share of Sri Lanka declined from 3 per cent in 1983-84 to 2 per cent in 1984-85, and that of Tanzania declined marginally from 7 per cent to 6 per cent though production in both the countries remained more or less the same in absolute terms.

The virgin soil, suitable climate, non-existence of major pests and diseases, systematic re-planting operations and expansion of the area under the crop were the major reasons behind the high productivity and production of cardamom in Guatemala. While India at present has a productivity of only 23 to 64 kgs. per hectare, in Guatemala, this is five or more times higher at about 250 to 300 kgs. per hectare.

Recent reports, however, indicate that pests and diseases have made their appearance in the cardamom plantations in Guatemala also. It has also been reported that the dreaded 'katte' or 'mosaic' disease has made its appearance in Guatemala. 'Katte' is a virus disease and no disease resistant plant has so far been developed anywhere in the world. This disease has already affected the production of cardamom in Guatemala. If this trend persists, the rate of growth of cardamom industry in

Guatemala may not be the same as it was during the period 1973 to 1985. Even then, by expanding the area under cultivation, Guatemala would be producing at least 6000 MT of cardamom by 1989-90. Of this, over 5900 MT may be offered for sale in the world markets as there is no substantial home consumption.

Tanzania, which was producing about 740 MT. to 1050 M T. of cardamom during midseventies had a severe set back in production and exports during the late seventies and early eighties. The taking over of the entire marketing operations in cardamom by the Government in 1975 resulted in a very unremunerative price for the growers. This has depressed cardamom production in Tanzania. The production of cardamom has remained more or less stagnant at the level of about 450 M T. per annum in recent years. Moreover, the quality of the cardamom produced in Tanzania is not highly rated in the world markets especially in the 'core' market of the Middle East. At the most, on a very optimistic estimate, Tanzania would be able to produce 750 M.T by 1989-90 of which 700 M T may come to the world market.

Sri Lanka, another traditional cardamom producing country is not expected to make any headway in cardamom production in the coming years. In fact, the

production and export of cardamom from Sri Lanka has declined by about one-third during the years 1970-71 to 1984-85. The exception was for the year 1975-76.³ The quality of cardamom produced by Sri Lanka is of average quality and is more or less in between Indian and Guatemalan cardamoms. With the ethnic problems of Tamilians in Sri Lanka, who constitute a majority of plantation labour, the future of cardamom production in Sri Lanka appears rather bleak in the near future. Here again, taking a very optimistic view, Sri Lanka may be able to produce a maximum of 350 M.T., and offer 250 M.T. to the world market by 1989-90.

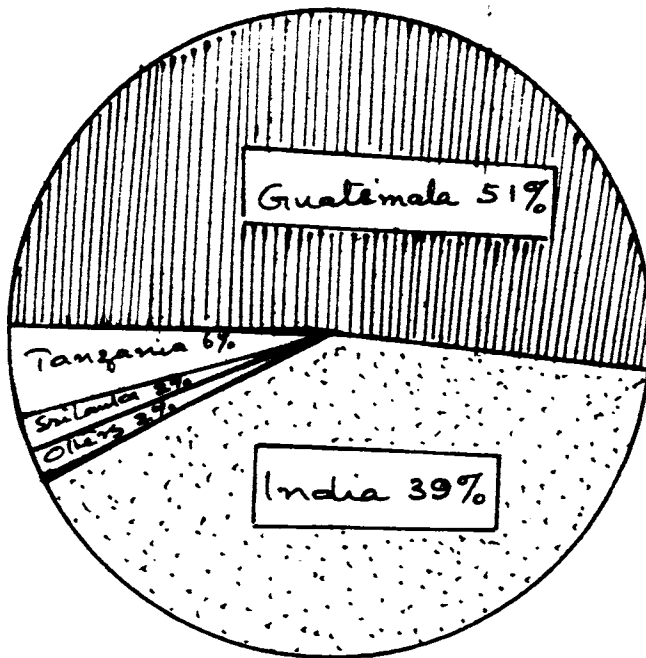
The trend of production of cardamom in the world from 1960-61 to 1984-85 indicates a relatively weakening of India's position. During the period 1960-61 to 1975-76, India's production declined at the rate of 0.5 per cent per annum, but when we consider the entire period between 1960-61 to 1984-85, it can be seen that production has recorded a growth rate of 0.7 per cent per annum. At the same time, Guatemala's production rose at an annual compounded rate of 14.2 per cent during 1970-71 to 1984-85 and Sri Lanka's production registered a decline at the rate of 1.6 per cent during 1970-71 to 1984-85.

³For details, see Table 3.1.

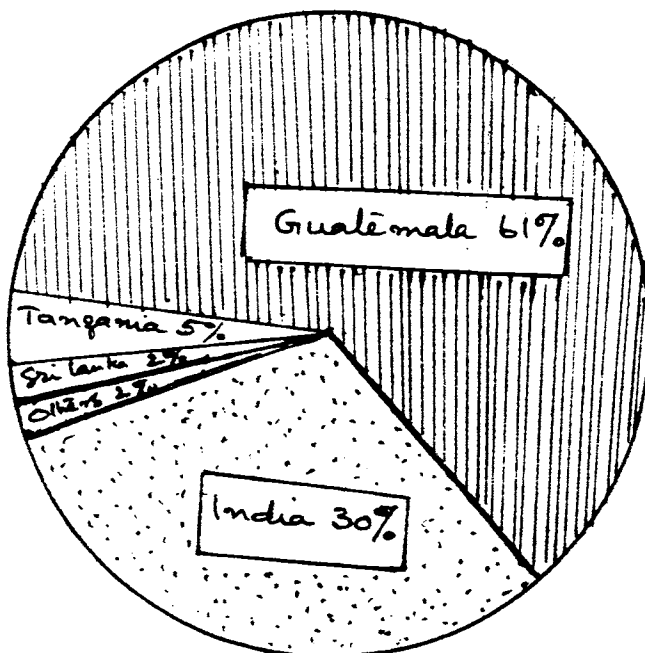
The country-wise share of production of cardamom in the world during 1984-85 can be seen in Graph 3.3.

The newcomers into the field of cardamom production are Papua New Guinea, El Salvador, Costa Rica and Honduras. They are putting considerable efforts to increase production of cardamom in these countries. It has been reported that Papua New Guinea is programmed to produce about 1000 M.T. by 1989-90 from the level of 150 M.T. in 1983-84. Published data are not available on the production details or production programmes of these countries. But from the personal discussions held in late 1985 with Mr. S.G. Sundaram, IAS, Agricultural Marketing Advisor of International Trade Centre, (UNCTAD/GATT, Geneva) to Honduras, El Salvador etc. and with the cardamom delegation from Guatemala headed by Mr. Karlos, President of Cardamom Producers' Association of Guatemala in late 1984, it was understood that the cardamom producing countries of Latin America, excluding Guatemala, were planning to produce 500 M.T. of cardamom by 1989-90. Personal discussions were also held with a high level cardamom delegation from Papua New Guinea headed by Mr. Simon Koiam, Deputy Premier and Provincial Minister for primary industry. In the light of these discussions

GRAPH - 3.3
WORLD PRODUCTION OF CARDAMOM
1984-85



WORLD EXPORT OF CARDAMOM
1984-85



it could be estimated that the new cardamom producing countries put together would be contributing at least 1050 M.T. of cardamom for export in 1989-90, even if they do not achieve their production target of 1500 MT by that year.

From the above, it can be estimated that the total supply of cardamom to the world market would be around 11,400 M.T. by 1989-90 as against the supplies of 2315 M.T. in 1969-70, 3990 M.T. in 1974-75, 5227 M.T. in 1979-80 and 8050 M.T. in 1984-85. Details are given in Tables 3.2 and 3.6.

The world production of cardamom has gone up from 4710 M.T. in 1970-71 to 8650 M.T. in 1980-81 and 9900 M.T. in 1984-85.⁴ World exports have also gone up from 3101 M.T. in 1970-71 to 6410 M.T. in 1980-81 and 8050 M.T. in 1984-85.⁵ It was reported that about 650 M.T. of Guatemalan cardamom lay unsold in the Middle East market during April-August, 1985, over and above the normal stock of about 800 M.T. during the same period. This means that the real world demand for the year 1984-85 was only 9250 M.T. against the world production of 9900 M.T.

The details of the world import of cardamom from 1971 to 1984 are given in Tables 3.4 and 3.5. From these Tables it can be seen that the Middle East countries

⁴For Details, see Table 3.1.

⁵See Table 3.2.

Country-wise World Import of Cardamom : 1971-1984
(Quantity in Metric Tonnes)

Year	Saudi Arabia	Kuwait	Bahrain	Dubai	Abudhabi	Qatar	Iran	Jordan	Sweden	Finland	F. R. G.	Norway	Denmark	Nether Lands	Belgium	U.K.	U.S.A.	Japan	Others	Total Middle East +	Total Europe +	Total World +
1971	935	709	N.A.	59	N.A.	65	83	N.A.	342	173	110	37	32	15	N.A.	N.A.	N.A.	N.A.	N.A.	1851	709	2525
1972	1128	765	615	75	N.A.	65	57	N.A.	272	150	113	41	36	42	N.A.	N.A.	N.A.	N.A.	N.A.	2705	654	3359
1973	1268	685	480	112	N.A.	76	27	N.A.	353	132	126	39	34	36	N.A.	N.A.	N.A.	N.A.	N.A.	2648	720	3368
1974	963	725	502	182	59	43	78	N.A.	271	150	125	43	24	30	N.A.	N.A.	110	156	N.A.	2552	643	3461
1975	1583	905	791	160	52	67	74	N.A.	243	160	125	31	17	16	N.A.	N.A.	62	93	N.A.	3632	592	4379
1976	1549	1146	1039	309	87	74	53	N.A.	260	155	111	47	25	22	N.A.	94	79	84	N.A.	4257	714	5134
1977	1792	1525	N.A.	204	165	86	91	40	261	130	107	37	NA	16	22	68	80	133	N.A.	3903	641	4757
1978	1977	1630	921	278	N.A.	87	73	87	203	154	154	45	20	28	21	86	169	89	N.A.	5053	1284	6595
1979	2502	1525	89	261	79	175	117	84	228	169	214	42	37	35	13	99	91	127	N.A.	4832	837	5887
1980	3236	1945	261	381	109	323	96	81	229	210	211	59	27	74	25	168	342	162	N.A.	6432	1003	7939
1981	4107	1640	214	327	202	610	153	64	180	129	263	51	22	63	31	105	350	140	N.A.	7317	844	8651
1982	4086	1483	84	327	41	62	N.A.	N.A.	204	178	233	58	16	121	10	88	314	121	N.A.	6083	908	7426
1983	4199	N.A.	70	337	N.A.	99	N.A.	N.A.	223	195	225	40	16	85	16	141	368	142	N.A.	4705	941	6156
1984	5073	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	166	N.A.	25+	14	39	18	N.A.	N.A.	N.A.	144	N.A.	5073	262	5479

Note: N.A. - Not available; + † Incomplete figures.

- Source: 1. Cardamom Board, Cochin.
 2. Indian Diplomatic /Trade Missions abroad.
 3. International Trade Centre, (UNCTAD/GATT), Geneva.
 4. Commonwealth Secretariat, London.

Table 3.5

Value-wise World Import of Cardamom, 1971 to 1984

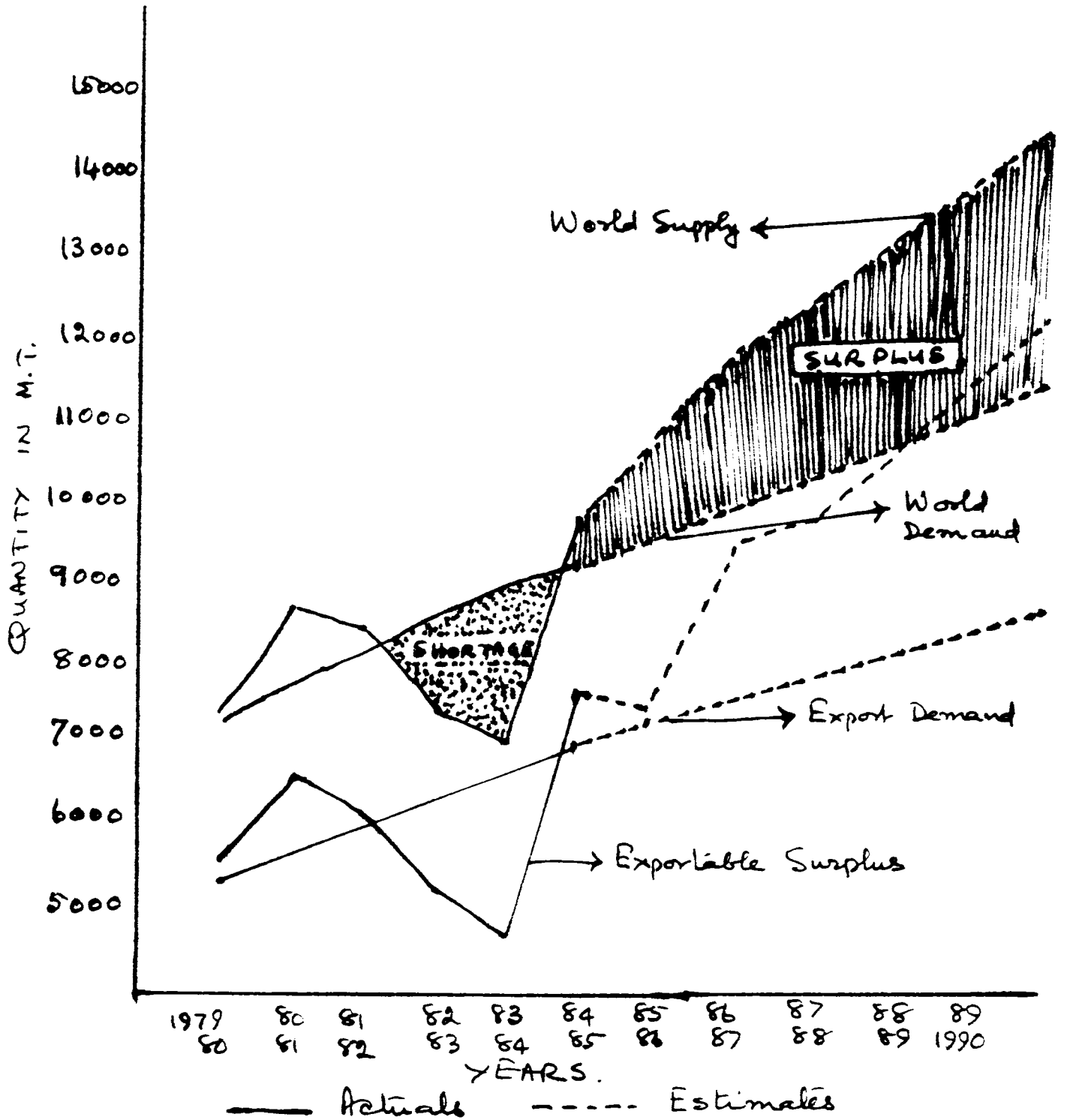
(Value in Rupees/Crores)

Year	Saudi Arabia	Kuwait	Bahrain	Dubai	Abu Dhabi	Qatar	Iran	Jordan	Sweden	Finland	F.R.G.	Norway	Denmark	Nether Lands	Belgium	U.K.	U.S.A.	Japan	Others	Total Middle East	Total Europe	Total World
1971	6.10	3.53	N.A.	0.16	N.A.	0.37	0.31	N.A.	1.00	0.83	0.34	0.14	0.13	0.03	N.A.	N.A.	N.A.	N.A.	N.A.	10.46	2.46	12.92
1972	4.28	3.34	1.28	0.19	N.A.	0.30	0.16	N.A.	0.67	0.47	0.28	0.12	0.11	0.05	N.A.	N.A.	N.A.	N.A.	N.A.	9.54	1.69	11.24
1973	6.78	4.95	1.92	0.49	N.A.	0.35	0.05	N.A.	0.76	0.40	0.40	0.18	0.12	0.06	N.A.	N.A.	N.A.	N.A.	N.A.	14.54	1.92	16.45
1974	6.28	5.36	1.67	0.92	0.14	0.36	0.34	N.A.	1.28	0.37	0.32	0.21	0.11	0.08	N.A.	N.A.	0.48	0.93	N.A.	15.07	2.37	18.86
1975	11.31	9.34	2.98	1.20	0.15	0.67	0.42	N.A.	1.14	0.69	0.33	0.15	0.09	0.06	N.A.	N.A.	0.35	0.64	N.A.	26.05	2.47	29.52
1976	13.94	14.38	3.70	1.79	0.26	0.77	0.23	N.A.	1.39	1.24	0.58	0.34	0.15	0.09	N.A.	0.37	0.64	0.59	N.A.	35.08	4.16	39.24
1977	20.81	28.40	N.A.	2.18	0.60	1.15	1.04	N.A.	2.16	N.A.	1.12	0.38	N.A.	0.13	0.28	0.43	0.92	1.83	N.A.	54.18	4.49	61.42
1978	27.25	29.00	5.47	3.11	N.A.	1.83	0.48	0.50	1.93	N.A.	1.68	0.45	0.23	0.24	0.25	0.78	1.22	0.74	N.A.	67.64	5.56	75.17
1979	43.37	25.71	0.82	3.63	1.09	3.59	1.40	1.21	2.01	1.76	2.53	0.39	0.21	0.30	0.14	0.96	0.74	1.30	N.A.	80.82	8.31	91.17
1980	51.98	26.23	3.63	4.37	1.12	5.98	1.26	0.97	1.24	1.35	1.21	0.37	0.13	0.52	0.21	0.97	1.79	1.70	N.A.	96.23	5.99	105.72
1981	46.73	27.95	2.22	3.17	1.12	2.05	1.24	0.76	0.68	0.56	1.08	0.23	0.10	0.45	0.31	0.43	1.41	0.91	N.A.	85.25	3.84	91.41
1982	61.05	21.11	1.23	4.40	1.08	1.08	N.A.	N.A.	0.88	0.88	1.09	0.25	0.06	0.85	0.07	0.57	1.72	1.30	N.A.	89.96	4.65	97.63
1983	60.91	N.A.	0.99	4.87	N.A.	1.41	N.A.	N.A.	1.92	1.87	1.80	0.27	0.14	0.64	0.13	1.04	2.11	2.18	N.A.	68.19	7.81	80.30
1984	127.51	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	3.04	N.A.	0.29	0.24	0.59	0.21	N.A.	N.A.	2.89	N.A.	127.51	4.37	134.77

Note: N.A. : Not available; + : Incomplete figures.

Source: 1. Cardamom Board, Cochin.
2. Indian Diplomatic/Trade Missions Abroad.
3. International Trade Centre, (UNCTAD/GATT) Geneva
4. Commonwealth Secretariat, London.

WORLD SUPPLY AND DEMAND FOR
CARDAMOM - 1979-80 to 1989-90.



take bulk of the world cardamom output paying a higher unit price. The import of cardamom into Saudi Arabia was only 935 M.T. in 1971. This has gone upto 5073 M.T. in 1984. Kuwait imported 709 M.T. in 1971, which went upto a peak of 1945 M.T. in 1980. All the other countries in the Middle East showed the same increasing trend in the import of cardamom, especially after the oil boom in the Middle East in early seventies. It may be remembered that though Kuwait, Bahrain, Dubai, Qatar, etc. are major consumers of cardamom, they are also reexporting cardamom to other countries in the Middle East. The re-exports are mainly to Saudi Arabia, Jordan, etc.

European countries, especially Scandinavian nations, take around 1500 M.T. of low priced cardamom from Guatemala as is evident from Tables 3.4 and 3.5.

An examination of the figures of world export of cardamom reveals that export prices of Indian cardamom fell from Rs.202.92 per kilogram in 1978-79 to Rs.129.87 per kilogram in 1981-82. This can largely be attributed to excess world supply. During 1981-82 the export price improved to Rs.158.60 per kilogram. There was a little shrinkage in the world supply of cardamom during that year compared to the previous years. Export prices

improved further to Rs.210.92 per kilogram in 1983-84. This, it may be noted, was an year of severe drought in India, when production in India crashed to 1600 M.T. the lowest ever during the last 20 years, against the normal production of around 4000 M.T. The demand for cardamom shot up in the Middle East market during 1983-84, resulting in brisk buying in 1984-85. Prices went upto Rs.271.92 per kilogram. However, this was only a temporary phenomenon.

From the above, it can be seen that the increasing availability of cardamom from all the producing countries, especially Guatemala and India, have already created a glut in the world market from 1979-80 onwards. The production of cardamom in the world increased from 7275 M.T. in 1979-80 to 9900 M.T. in 1984-85. World consumption of cardamom failed to keep pace with this increase in production and has resulted in a continued fall in prices. The world "availability is likely to increase on an average of 11 to 12 per cent over the next three years. The maximum anticipated annual growth rate of the market for cardamom is however estimated at 4 to 5 per cent"⁶. Therefore, unless the consumption of

⁶International Trade Centre (UNCTAD/GATT), Prospects for new end uses of Indian cardamom, (Geneva, 1983) p.8.

Table 3.6

World Supply and Demand for Cardamom: 1979-80 to 1989-90

Producing countries	World supply (M.T.)	Domestic demand (M.T.)	Exportable Surplus (M.T.)	Export Demand (M.T.)	World Demand (Domestic & Export) (M.T.)
<u>1979-80</u>					
India	4500	1850	2650		
Guatemala	2100	50	2050		
Sri Lanka	300	100	200		
Tanzania	400	50	350		
Others	50	-	50		
Total:	7350	2050	5300	5300	7350
<u>1980-81</u>					
India	4400	1900	2500		
Guatemala	3400	50	3350		
Sri Lanka	250	100	150		
Tanzania	600	50	550		
Others	50	-	50		
Total:	8700	2100	6600	5600	7700
<u>1981-82</u>					
India	4100	1950	2150		
Guatemala	3450	50	3400		
Sri Lanka	330	100	230		
Tanzania	400	50	350		
Others	120	-	-		
Total:	8400	2150	6130	5900	8050

Table 3.6 (Contd.)

Producing countries	World supply (M.T.)	Domestic Demand (M.T.)	Exportable Surplus (M.T.)	Export Demand (M.T.)	World Demand (Domestic & Export) (M.T.)
<u>1982-83</u>					
India	2900	2000	200		
Guatemala	3600	50	3550		
Sri Lanka	320	100	220		
Tanzania	450	50	400		
Others	180	-	180		
Total:	7450	2200	5250	6300	8500
<u>1983-84</u>					
India	1600	2050	450		
Guatemala	4500	50	4450		
Sri Lanka	230	100	130		
Tanzania	450	50	400		
Others	220	-	220		
Total:	7000	2250	4750	6750	9000
<u>1984-85</u>					
India	3900	2050	1850		
Guatemala	5000	50	4950		
Sri Lanka	200	100	100		
Tanzania	450	50	400		
Others	350	10	340		
Total:	9900	2260	7640	7000	9250
<u>1985-86 *</u>					
India	4600	2100	2500		
Guatemala	5100	50	5050		
Sri Lanka	250	100	150		
Tanzania	500	50	450		
Others	400	10	390		
Total:	10850	2310	8540	7200	9510

Table 3.6 (Contd.)

Producing countries	World Supply (M.T.)	Domestic Demand (M.T.)	Exportable Surplus (M.T.)	Export Demand (M.T.)	World Demand (Domestic & Export) (M.T.)
1986-87*					
India	5000	2150	2850		
Guatemala	5400	50	5350		
Sri Lanka	300	100	200		
Tanzania	550	50	500		
Others	650	20	630		
Total:	11900	2370	9530	7500	9870
1987-88*					
India	5200	2200	3000		
Guatemala	5500	100	5400		
Sri Lanka	300	100	200		
Tanzania	600	50	550		
Others	850	30	820		
Total:	12450	2480	9970	7800	10280
1988-89*					
India	5500	2250	3250		
Guatemala	5800	100	5700		
Sri Lanka	300	100	200		
Tanzania	700	50	650		
Others	900	50	850		
Total:	13200	2550	10650	8000	10550
1989-90*					
India	5800	2300	3500		
Guatemala	6000	100	5900		
Sri Lanka	350	100	250		
Tanzania	750	50	700		
Others	1000	50	1050		
Total:	14000	2600	11400	8400	11000

Note: Figures from 1979-80 to 1984-85 are actuals.

*Figures from 1985-86 to 1989-90 are estimates by the researcher.

Source for actuals: Cardamom Board, Cochin.

cardamom is very significantly increased over the next few years, further fall in prices can be expected, seriously upsetting the whole of the cardamom market in the world. Such a trend is already visible in the market.

This crisis can be overcome only if a concerted effort is made to regulate export and prices on one hand and to increase consumption on the other. It is estimated that the non-Middle East market alone would have to be expanded by at least by 100 per cent i.e., from 3000 M.T. to 6000 M.T. by 1989-90, if the world sales are to match world production.

Regulation of export can be done only on the basis of a clear understanding among the producing countries. This will be difficult to arrive at, as all the producing nations are economically backward and may tend to look upon cardamom export as a valuable source of foreign exchange. But, in the absence of such self regulation by producing countries, the prices of cardamom may tend to fall in the world market and this may tend to depress the total income from the export of cardamom, perhaps to levels far below what the producing nations would receive if they can agree upon self regulation of exports.

Enlightened self interest, therefore, requires that there is agreement among the producing countries regarding regulation of exports. Considerable difficulties may have to be faced in arriving at the formula for such an agreement. Yet, such an agreement will be unavoidable when one looks at the grim prospect of the commodity in the world market.

Simultaneously, efforts will also have to be made to increase the world consumption of cardamom through effective promotional activities undertaken jointly by all the producing countries. The existing economic and political ties that the producing countries have with certain developed economies will have to be fully exploited to develop markets for cardamom in these developed countries.

A two pronged strategy of this kind will alone be of use in sustaining the future of cardamom in the world market. However, as far as India is concerned she has got a substantial advantage over other cardamom producing countries of the world. India has a substantial home market for cardamom. This market has remained more or less stagnant over the years. If effective publicity and promotional measures are taken up in India, with a population of over 700 million people with a rising per

capita income, India would be able to consume a substantial quantity of cardamom at home itself, paying a reasonable price.

CHAPTER IV

AREA AND PRODUCTION OF CARDAMOM IN INDIA - PAST, PRESENT AND FUTURE

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CHAPTER IV

AREA AND PRODUCTION OF CARDAMOM IN INDIA

PAST, PRESENT AND FUTURE

Recorded evidences of the antiquity of cardamom production and trade in India are not easily available. The high ranges of south India, known as 'cardamom hills', where cardamom grew wild, were the home of malaria and wild animals as well, and therefore, remained isolated from the rest of the country. It has been mentioned that:

*The earliest mention of cardamom in India is in the monumental medical treatise Ayurveda by Dhanwanthari (about 1000 BC) in Sanskrit, in which its properties and medicinal uses are recorded. The poetical works of Kalidasa (4th century AD) abound in references to its spicy fragrance. Among the ancient works in Tamil literature, the cardamom plant finds mention in Chilappatikaram written in the fourth century AD. Thirunaavukkaracar (7th century AD) speaks of the black mountains of cardamom hills in his book Thevaram. Cardamom bunch finds mention in Perinakatai (8th century AD) and ethical work called Eelathi roughly belonging to 9th century AD bears the name 'Elakkai' or cardamom".¹

¹Sahadevan, P.C., Cardamom, (Trivandrum, 1965) pp.5,6.

Malayalam, the native language of Kerala, itself evolved into a language with a distinct script only by the 9th century AD.² The names of spices were passed on through spoken word from generation to generation. Cardamom and other spices are found mentioned in a host of proverbs, folk songs and ballads, which have been compiled and published later. From 12th century onwards, cardamom figures in the works of Malayalam poets though the references are mostly confined to its alluring fragrance.

"Cardamom is a native of the moist ever green forests of south India growing wild in the western ghats, between 2500 and 5000 feet. It is found wherever the over head canopy has been thinned by natural causes or by human action and can be regarded as forming an element in a pre-climax stage of the evergreen forest in this region. It is also found along stream banks where the overhead shade is less dense. Cardamom occurs wild in Ceylon also, chiefly in the Ratnapura and Lunugala districts, and has been reported in Burma, Cochin-China and Malaya Archipelago".³

Till the second half of 19th century, cardamom remained as a wild forest produce. Very little of cardamom production entered the normal trade channels, as the

²Ibid., p.5.

³Council of Scientific and Industrial Research, The Wealth of India, (New Delhi, 1952) p.150.

major forest areas where cardamom occurred was in the erstwhile princely state of Travancore, and the State Government held virtual monopoly over the trade of cardamom. It has been stated that

"during harvest seasons, two divisions of Travancore Army used to camp in high ranges to collect the wild cardamom crop".⁴

The cultivation of cardamom was developed as a plantation during the period 1890 to 1910.

"In 1896 land tax was introduced in the Travancore State for the marshy lands in the 'cardamom reserves', after a survey of the land. From 1905 onwards, ownership right was extended to people who were holding cardamom lands. This was again changed in 1942 and a land lease system was introduced. The lease was for a period of 12 years. Later, these lease rights were extended for a period of 20 years."⁵

Shri Krishnaswamy Rao, Dewan of Travancore encouraged the Tamilians in Madurai (Tamilnadu) area to take up cardamom cultivation in the 'cardamom hills' of Travancore State. The easy access from the plains of Madurai region of the then Madras Presidency, now

⁴Paul, Babu. D., Giri Parvam, (Trivandrum, 1982) p.190.

⁵Ibid., p.95.

part of Tamilnadu, to the 'cardamom hills' of Travancore State and the dare devil attitude of Tamil people to work in the forests contributed greatly to the development of cardamom plantations in Kerala. The exports of cardamom were mainly through the Alleppey and Madras ports.

"In 1920, the Government of Travancore decided not to give further land for cardamom cultivation, but this was revised later. The right over the land was extended to the occupants of the land upto the year 1934. The real growth both in cultivation and trade of cardamom, came only from 1920 onwards, when the monopoly of the State on the trade of cardamom was given up and the planters were permitted to sell the produce as and where they liked".⁶

With better accessibility to the forest areas through improved means of transportation and communication from the plains of erstwhile Travancore State led to the expansion of the area under cardamom and its production. Gradually, by the 1940s, cardamom acquired an important position among the commercial crops of the State and the country.

Reliable statistics on the estimated area under cardamom cultivation and production are not available for the period 1920 to 1960.

⁶Ibid., p.95.

The estimated production of cardamom in India from 1935-36 to 1944-45 is given in Table 4.1.

Table 4.1

Estimated production of cardamom in India: 1935-'36
to 1944-'45

Year	Production (Tons)
1935-36	900
1936-37	N.A
1937-38	N.A
1938-39	1407
1939-40	N.A
1940-41	N.A
1941-42	1264
1942-43	1280
1943-44	1803
1944-45	2621

Note: N.A. : Not available.

Source: Council of Scientific and Industrial Research,
New Delhi.

The estimated area under cardamom during the period 1935-36 to 1944-45 and the estimated area and production from 1945-46 to 1953-54 are not available. The estimated area and production of cardamom in India from 1954-55 to 1959-60 is given in Table 4.2.

Table 4.2

Estimated area and production of cardamom
in India : 1954-'55 to 1959-'60

Year	Area (Hectares)	Production (M.T.)
1954-55	48100	2440
1955-56	48100	2540
1956-57	50600	2950
1957-58	51400	3150
1958-59	53900	3350
1959-60	54700	3250

Source: Indian Council of Agricultural Research,
New Delhi.

Area under cardamom

The state-wise distribution of estimated area under cardamom from 1960-61 to 1984-85 at five year intervals is given in Table 4.3.

The estimates of area from 1960 to 1975 are not quite dependable, as there was no system of registration of cardamom estates or a system of realistic assessment of area as is being now done by the Cardamom Board. It may be noted from Table 4.3 that there was no significant increase or decrease in the total area under cardamom

Table 4.3

State-wise area under cardamom in India: 1960-61 to 1984-85

(Area in hectares; Figures in bracket are percentages)

State	As in 1960-'61	As in 1965-'66	As in 1970-'71	As on 31-3-1975	As on 31-3-1980	As on 31-3-1985
	Esti- mated	Regis- tered	Esti- mated	Regis- tered	Esti- mated	Regis- tered
Kerala	28629 (51)	nil -	43068 (64)	nil -	47026 (58)	6460 (55)
Karnataka	21235 (38)	nil -	19146 (28)	nil -	28223 (34)	2140 (18)
Tamilnadu	5938 (11)	nil -	5610 (8)	nil -	6316 (8)	3097 (26)
Total:	55815 (100)	nil -	67824 (100)	nil -	81565 (100)	11697 (100)
				55188 (60)	49438 (62)	56376 (60)
				28223 (31)	22909 (29)	28223 (30)
				8065 (9)	7164 (9)	9348 (10)
				9348 (8)	7086 (8)	9000 (9)
				93947 (100)	85879 (100)	100000 (100)

Source: 1. 1960-61 & 1965-66 - Directorate of Economics and Statistics, New Delhi.

2. 1970-71 to 1984-85 - State Governments of Kerala, Karnataka and Tamilnadu.

3. Cardamom Board, Cochin.

during the period 1975 to 1985. The total estimated area under cardamom which was 91,476 hectares in 1975 increased only by about 10 per cent over the next ten years, reaching a level of 1,00,000 hectares in 1985. The non-availability of suitable forest area for expansion of cardamom cultivation was the limiting factor in this context. All potential areas of cardamom cultivation are forest lands and are owned by the State Governments. During the period 1975 to 1985, at least 15,000 hectares might have gone out of cardamom cultivation due to large scale unauthorised felling of trees, making them unsuitable for cardamom cultivation. At the same time, about 9,000 hectares might have been newly brought under the cardamom crop during the above period. The increase in area was probably due to the higher prices that prevailed for cardamom during the late seventies. Of these 9,000 hectares, which newly came under cardamom cultivation, 2,500 hectares are under public sector, as has been seen from the records related to ownership details available with the Cardamom Board.

As in 1985, the total area under cardamom in India is seen shared by the three southern States of Kerala, Karnataka and Tamilnadu in the proportion of 61 per cent, 30 per cent and 9 per cent respectively.

Of the total estimated area of 1,00,000 hectares under cardamom, 96,137 hectares are under registered plantations as on 31-3-1985. Of these, 58,769 hectares were in Kerala, 29,260 hectares in Karnataka and 8,108 hectares in Tamilnadu.

The State-wise and district-wise distribution of registered holdings and of the area under cardamom is given in Table 4.4. Of the 33,153 registered holdings in India 21,131 holdings are in Kerala, Idukki district alone had 20,651 registered holdings constituting 97.7 per cent of the total holdings in Kerala. This was 62.3 per cent of the total holdings in India. Karnataka has 10,618 registered holdings, constituting 32 per cent of the total holdings in India. Of the total of 10,618 holdings in Karnataka, Coorg district alone has 6839 holdings, constituting 64.4 per cent of the total holdings in Karnataka. This was 20.6 per cent of the total holdings in India. Tamilnadu has only 1404 holdings, constituting only 4.3 per cent of the total number of holdings in India. In Tamilnadu, Madurai district alone accounted for 1182 registered holdings constituting 84.1 per cent of the total number of holdings in the State or 3.6 per cent of the total holdings in India.

Area-wise, Kerala accounted for 58,769 hectares of registered area under cardamom. This is 61.13 per cent

of the total registered area of 96,137 hectares under cardamom in India. In Kerala, Idukki district alone has 49,552 hectares, constituting 84.3 per cent of the area in Kerala and 51.5 per cent of the area in India. In Karnataka, there is 29,260 hectares, constituting 30.4 per cent of the area in India. Coorg district in Karnataka alone has 20,027 hectares under cardamom, constituting 68.4 per cent of the total area in Karnataka and 20.8 per cent of the total area in India. Tamilnadu has only 8108 hectares under cardamom constituting only 8.5 per cent of the total area under cardamom in India. In Tamilnadu, most of the cardamom area is in the Madurai district which accounted for 4155 hectares constituting 51.2 per cent of the total area in Tamilnadu. This is 4.4 per cent of the total area under cardamom in India.

The heavy geographic concentration of cardamom cultivation in certain parts is evident from the fact that the Idukki district of Kerala alone has 51.5 per cent of the total registered area under cardamom in the country. Idukki is followed by the Coorg district (20.8 per cent) in Karnataka and Madurai district (4.4 per cent) in Tamilnadu. In short, these three districts of India account for 76.7 per cent of the total cardamom area in the country. This is evident from Table 4.4.

Table 4.4
State and district-wise distribution of registered cardamom
 area in India as on 31 March 1985

State/District	No. of holdings	%age in Kerala	%age in India	Area (hectares)	%age in Kerala	%age in India
<u>KERALA</u>						
Idukki	20651	97.7	62.3	49552	84.3	51.5
Wynad	333	1.5	1.0	4254	7.2	4.4
Palghat	98	0.4	0.3	3269	5.5	3.4
Cannanore	20	0.1	@	759	1.2	0.8
Calicut	9	@	@	412	0.7	0.4
Malappuram	8	@	@	188	0.3	0.1
Trivandrum	3	@	@	164	0.2	0.1
Quilon	2	@	@	149	0.2	@
Kottayam	7	@	@	22	@	@
Total: Kerala	21131	100	63.6	58769	100	61.1
<u>KARNATAKA</u>						
Coorg	6839	64.4	20.6	20027	68.4	20.8
Hassan	1466	13.8	4.4	3969	13.6	4.1
Chickamagalur	1438	13.5	4.3	2681	9.1	2.8
South Kanara	10	@	@	2529	8.6	2.6
North Kanara	864	8.1	2.6	48	0.2	@
Mysore	1	@	@	6	@	@
Total: Karnataka	10618	100	32.0	29260	100	30.4
<u>TAMILNADU</u>						
Madurai	1182	84.1	3.6	4155	51.2	4.4
Tirunelveli	72	5.2	0.2	1399	17.2	1.5
Coimbatore	44	3.1	0.1	1308	16.2	1.4
Ramnad	22	1.6	@	495	6.2	0.5
Nilgiris	34	2.4	@	417	5.1	0.4
Kanyakumari	13	0.9	@	231	2.8	0.2
Salem	37	2.7	@	103	1.3	0.1
Total: Tamilnadu	1404	100	4.3	8108	100	8.5
TOTAL: INDIA	33153	-	100	96137	-	100

Note: @ - Negligible

Source: 1. State Governments of Kerala, Karnataka and Tamilnadu.
 2. Cardamom Board, Cochin.

The economic implication of this situation is the heavy dependence of the people of these districts and other similar parts on cardamom cultivation. The future of these people is mostly tied up with the cardamom crop and its prospects. In the planned economic development of the country this factor is of critical importance in planning for the development of these districts and their people.

An analysis of the size-wise distribution of registered holdings in cardamom as on 31st March 1975 is given in Table 4.5. It shows that the distribution is highly skewed, with 64 per cent of the total number of holdings in India falling into the lowest size group of 0 to 2 hectares. These holdings together accounted for only 20 per cent of the total area under cardamom in 1975. Another 19 per cent of the holdings in the size group of 2 to 4 hectares accounted for 16 per cent of the area in India. Altogether 99 per cent of the holdings were below 20 hectares and they accounted for 71 per cent of the total area. More or less the same pattern of distribution by size is observed in all the three States of Kerala, Karnataka and Tamilnadu. In the case of Kerala, about 92 per cent of the holdings, accounting for 74 per cent of the total area, were below 20 hectares in size.

MAP 4.1

CARDAMOM PLANTATION MAP OF SOUTH INDIA

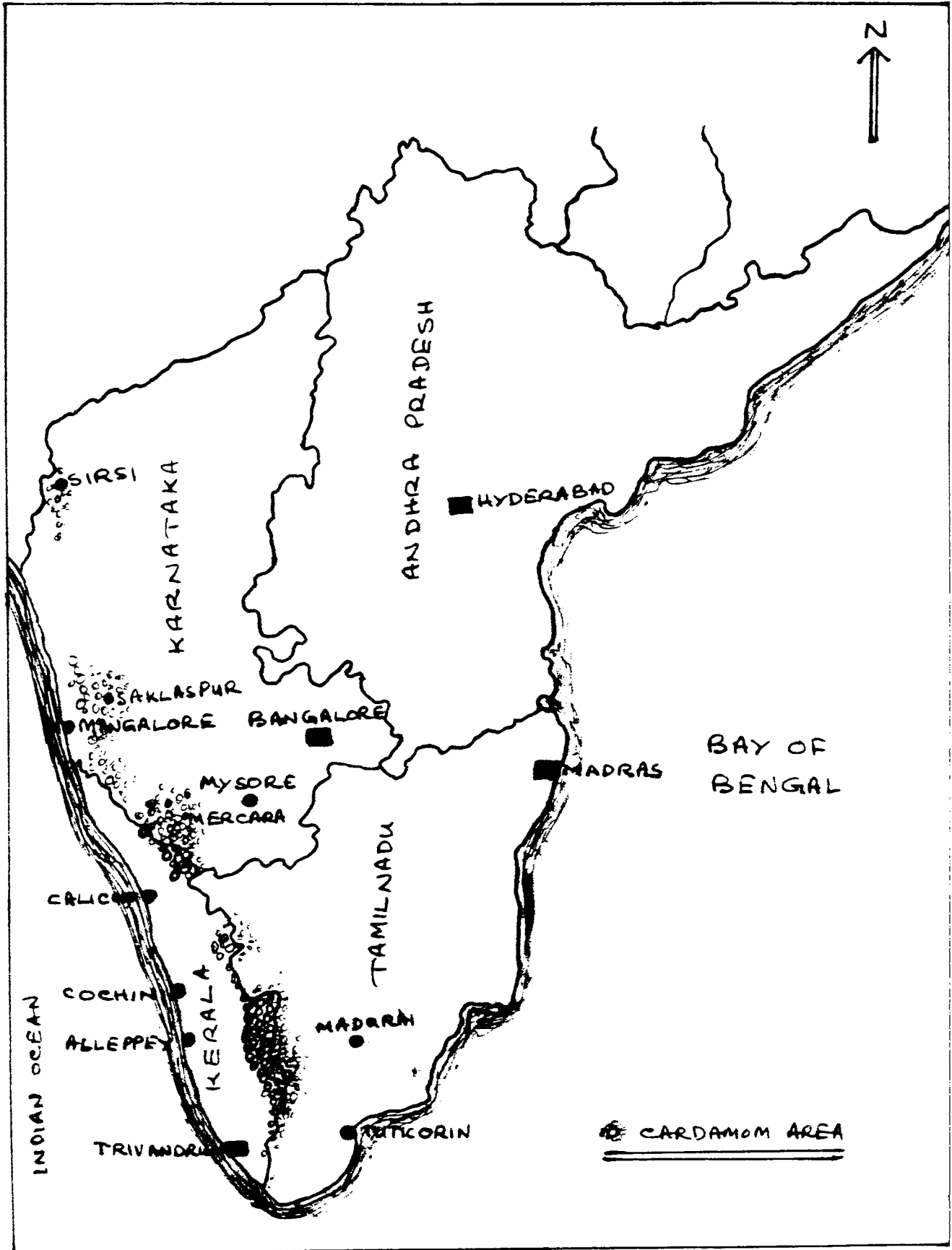


Table 4.5

Statewise distribution of registered holdings in cardamom by size of holdings
(As on 31 March 1975; Figures in brackets are percentages)

Size of holding (hectares)	Kerala		Karnataka		Tamilnadu		I n d i a	
	No. of holdings (hect.)	Area (hect.)	No. of holdings (hect.)	Area (hect.)	No. of holdings (hect.)	Area (hect.)	No. of holdings (hect.)	Area (hect.)
0 - 2	9330 (58)	9658 (20)	5071 (51)	4634 (20)	554 (47)	430 (6)	14955 (64)	14722 (20)
2 - 4	2930 (18)	8195 (17)	1284 (18)	3439 (15)	250 (21)	704 (10)	4464 (19)	12338 (16)
4 - 8	1820 (11)	9955 (20)	497 (7)	2616 (11)	185 (16)	985 (14)	2502 (11)	13556 (18)
8 - 20	745 (5)	8589 (17)	191 (3)	2305 (10)	135 (11)	1629 (23)	1071 (5)	12523 (17)
20 - 40	152 (1)	3875 (8)	64 (0.89)	1634 (7)	37 (3)	942 (13)	253 (1)	6451 (9)
40 - 81	62 (@)	3621 (7)	39 (@)	2364 (10)	16 (1)	817 (11)	117 (.5)	6802 (9)
81 - 202	40 (@)	4975 (10)	17 (@)	1789 (8)	7 (.59)	1098 (15)	64 (@)	7862 (11)
202 & above	2 (@)	572 (1)	7 (@)	4126 (18)	2 (@)	559 (8)	11 (@)	559 (.75)
Total:	16131 (100)	49440 (100)	7170 (100)	22907 (100)	1186 (100)	7164 (100)	23437 (100)	74813 (100)

Note: @ : Negligible

Source: 1. State Governments of Kerala, Karnataka and Tamilnadu.
2. Cardamom Board, Cochin.

Table 4.6 gives the distribution of the number of registered holdings in cardamom by size as on 31st March 1985. Compared with the position given in Table 4.5 it may be noted that there have been some changes in the pattern of distribution of registered holdings by size, during the period 1975 to 1985. Though the number of small holdings below 20 hectares continued to remain at 99 per cent in 1985, the area under this sector marginally declined to 69 per cent from 71 per cent. While the number of the smallest holdings (0-2 hectares) increased by 5 per cent, the total area under this group increased by only 2 per cent.

Significant changes are seen to have taken place in the number of the larger holdings, i.e. above 81 hectares, during the period 1975 to 1985. In absolute terms the number of holdings in this group increased from 75 to 96 over a period of 10 years, constituting an increase of 5.25 per cent of the total area. As stated earlier this increase in number was mainly due to the entry of public sector companies and corporations in cardamom cultivation.

From Tables 4.5 and 4.6 it is also clear that in the smallest sector (below 2 hectares) the number of holdings increased from 14,955 in 1975 to 22,857 in 1985

District-wise distribution of registered holdings in cardamom by size of holdings

(As on 31 March 1985; Figures in brackets are percentages)

Size of holding (hectares)	Kerala		Karnataka		Tamilnadu		I n d i a	
	No. of holdings (hect.)	Area (hect.)	No. of holdings (hect.)	Area (hect.)	No. of holdings (hect.)	Area (hect.)	No. of holdings (hect.)	Area (hect.)
0 - 2	14358 (68)	13949 (23)	7852 (74)	6478 (22)	647 (46)	496 (6)	22857 (69)	20923 (22)
2 - 4	3627 (17)	10127 (17)	1713 (16)	4604 (16)	292 (21)	821 (10)	5632 (17)	15552 (16)
4 - 8	2126 (10)	11541 (20)	670 (7)	3511 (12)	223 (16)	1207 (15)	1319 (9)	16259 (17)
8 - 20	769 (4)	8808 (15)	227 (2)	2778 (10)	170 (12)	2036 (25)	1166 (4)	13622 (14)
20 - 40	146 (1)	3758 (7)	72 (1)	1842 (6)	45 (3)	1136 (14)	263 (1)	6736 (7)
40 - 81	56 (@)	3114 (5)	47 (@)	2789 (10)	17 (1)	917 (4)	120 (@)	6820 (7)
81 -202	42 (@)	5128 (9)	30 (@)	3318 (11)	8 (1)	1025 (13)	80 (@)	9471 (10)
202 & above	7 (@)	2344 (4)	7 (@)	3940 (13)	2 (@)	470 (6)	16 (@)	6754 (7)
Total:	21131 (100)	58769 (100)	10618 (100)	29260 (100)	1404 (100)	8108 (100)	33153 (100)	96137 (100)

Note: @ - Negligible.

Source: 1. State Governments of Kerala, Karnataka and Tamilnadu.
2. Cardamom Board, Cochin.

indicating an increase of more than 52 per cent. By area, the small holdings accounted for 20,923 hectares in 1985 as against 14,722 hectares in 1975 indicating a 42 per cent growth. Fragmentation of estates by inheritance could have been the main reason behind this phenomenon. However, when we look at the overall changes that have taken place in the distribution of holdings by size between 1975 and 1985 it can be noted that there has been no substantial change in the basic structure of the cardamom industry in India.

The structure of ownership of land in cardamom cultivation and the predominance of small holdings in the industry have important implications for the future. The tendency towards further fragmentations also portents trouble for cardamom cultivation. A most important consequence of this situation is that most of the cardamom farmers do not have the economic resources to make investments in modernising the farm technology to increase productivity. They also do not have the resources to bring in the essential inputs to increase productivity such as water or fertilizers. This lack of resources makes them helpless victims of the changing and uncertain market forces in the industry. They are unable to withstand the uncertainties of the market forces, but get crushed by them. This structural weakness

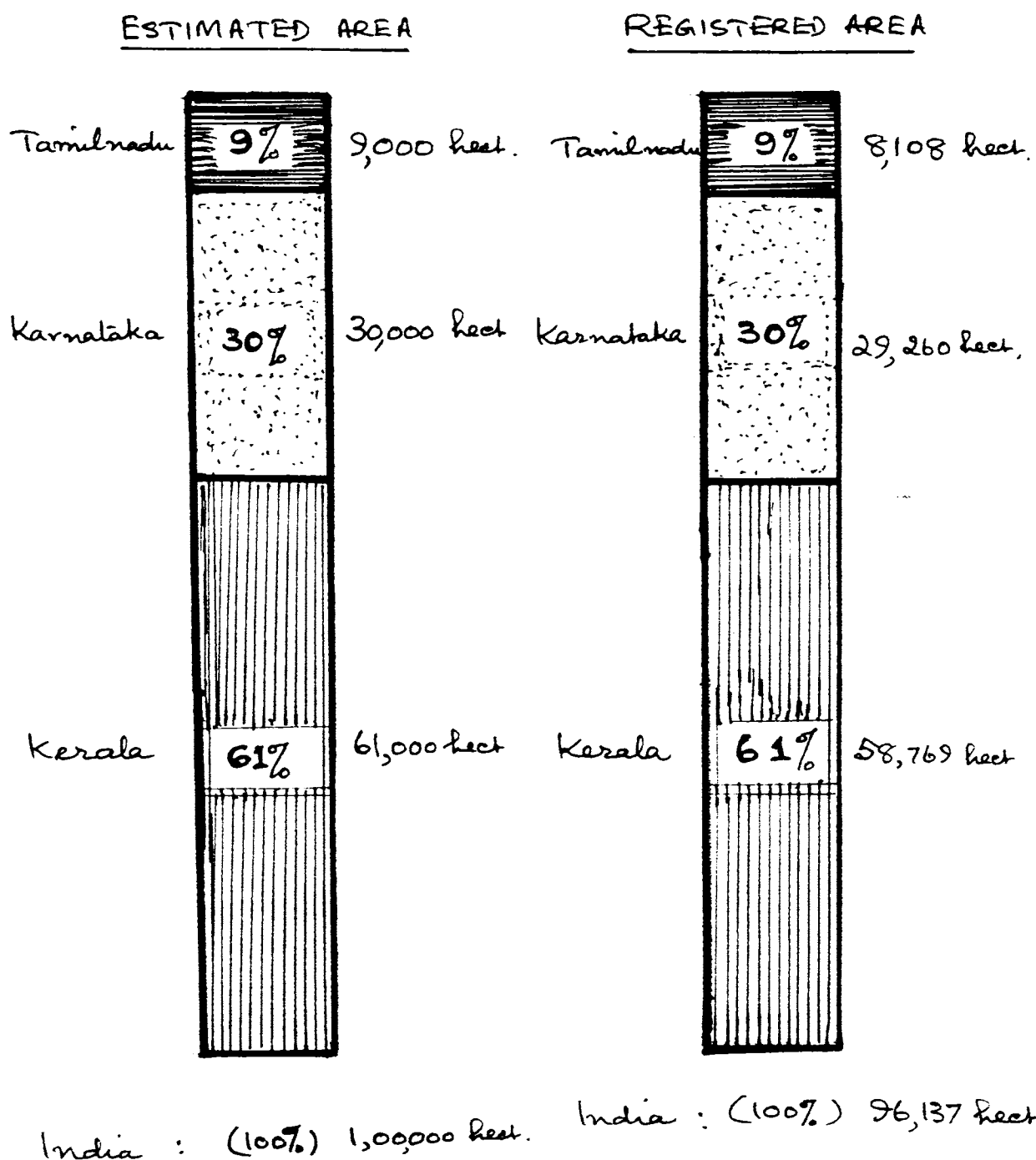
of the cardamom plantation industry makes it imperative that agencies such as the Cardamom Board should take the initiative to organize co-operatives of farmers both for production as well as for marketing. It might even make it necessary for the Cardamom Board to ensure a floor price for the farm produce so that the farmer feels more confident. Initiations from the official agencies will also be required to process the cardamom seeds into essential oils and oleoresins of standard quality so that modern methods of packaging and storing can be introduced. Effective intervention in world markets by the Board might also become necessary to offset the uncertainties of the market place. The processing of cardamom and its value adding conversion into essential oils and oleoresins will be necessary to protect the farmer from the vagaries in the market place. Organized research to explore the possibility of additional uses of cardamom, especially in the pharmaceutical and food processing industries can also be undertaken only by public agencies such as the Cardamom Board.

Distribution of registered holdings and area under cardamom in India may be seen in Graph 4.1 and 4.2.

During the coming ten year period from 1985 to 1995, the same trend in the pattern of holdings and size as had happened during the previous ten year period

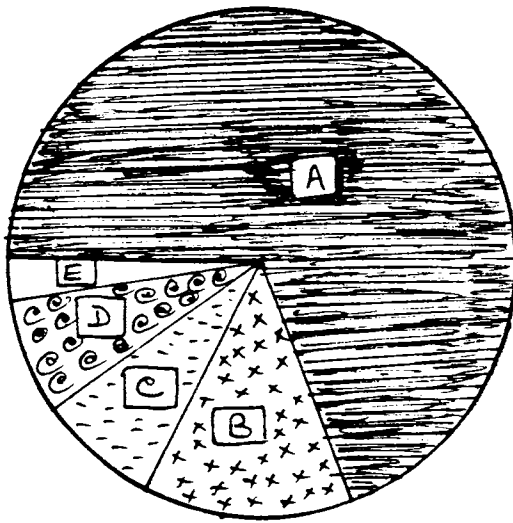
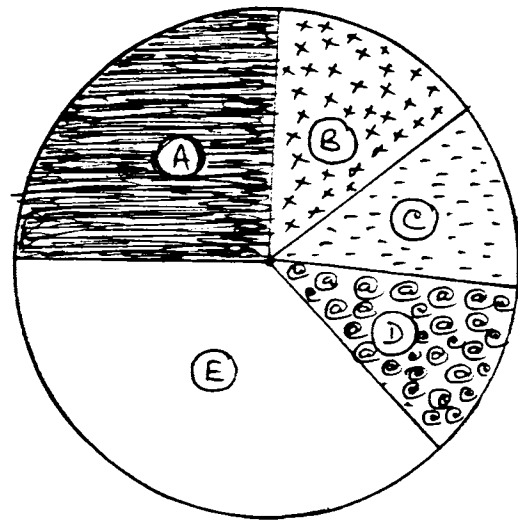
GRAPH.4.1.

DISTRIBUTION OF AREA UNDER CARDAMOM IN INDIA
(as on 31.3.1985)



GRAPH 4.2.

DISTRIBUTION OF REGISTERED HOLDINGS AND AREA UNDER
CARDAMOM IN INDIA
 (as on 31.3.1985)

NUMBER OF HOLDINGSAREA

A	0-2 hect	69%
B	2-4 hect	17%
C	4-8 hect	9%
D	8-20 hect	4%
E	20 & above hect	1%

A	0-2 hect	22%
B	2-4 hect	16%
C	4-8 hect	17%
D	8-20 hect	14%
E	20 & above hect	31%

from 1975 to 1985 is anticipated. As stated earlier, no significant increase in the area under cardamom is also expected mostly because of nonavailability of additional land suitable for cardamom cultivation. Whatever fresh land suitable for cardamom cultivation exists, it is with the State Governments. The Union Government has, in the meanwhile, adopted a strong policy for the protection of forests and has brought in suitable legislation for this. The Cardamom Board is also not in favour of further increases in the area under cardamom. The declining trend in cardamom prices in recent years is also working as a disincentive to bring more land under cardamom, even within the existing plantations.

In fact, it would be logical to conclude that the area under cardamom might gradually come down in future years in view of several factors:

- i) The growth of population in Kerala and the resultant pressure on land, leading to encroachment of forest lands and gradual deforestation in and around cardamom tracts, making even the existing area unsuitable for cardamom cultivation.
- ii) Changing pattern of cultivation due to the fragmentation of small and medium size cardamom estates consequent upon division of family property among its members.

- iii) There is likely to be large scale felling of trees in the cardamom estates due to the high value and nonavailability of timber.
- iv) The existing trees in the cardamom estates are pretty old. Second or third level shade trees are not maintained by growers to provide proper canopy for successful cultivation of cardamom in the future years.

In view of the above, cardamom industry in India may have to heavily depend upon increase of productivity as the only means to increase the volume of production. The rising costs of labour and other inputs also make this imperative.

Production of cardamom

The estimated production and productivity of cardamom for the period 1970-71 to 1984-85 are given in Table 4.7. The total production in 1970-71 was 3170 M.T. This increased to 3900 M.T. in 1984-85, an increase of only 23 per cent over a 15 year period. During the above period, production also experienced an all-time low record in 1983-84 (1600 M.T.) and an all-time high record in 1979-80 (4500 M.T.). Till 1976-77 both production and productivity had been on the decline, but for three years from 1977-78 onwards, they picked up. But again in 1982-83

Table 4.7

Production, Productivity and Annual Growth rate of
Cardamom : 1970-71 to 1984-'85.

Year	Production	Annual growth rate	Productivity kg/hectare	Annual growth rate
1970-71	3170		46	
1971-72	3785	+ 19.4%	54	+ 17.4%
1972-73	2670	- 29.5%	38	- 29.6%
1973-74	2780	+ 4.1%	40	+ 5.3%
1974-75	2900	+ 4.3%	42	+ 5.0%
1975-76	3000	+ 3.4%	43	+ 2.4%
1976-77	2400	- 20.0%	35	- 18.6%
1977-78	3900	+ 62.5%	56	+ 60.0%
1978-79	4000	+ 2.6%	58	+ 3.6%
1979-80	4500	+ 12.5%	64	+ 10.3%
1980-81	4400	- 2.2%	62	- 3.1%
1981-82	4100	- 6.8%	58	- 6.5%
1982-83	2900	- 29.3%	41	- 29.3%
1983-84	1600	- 44.8%	23	- 43.9%
1984-85	3900	+143.8%	42	+ 82.6%

Source: Cardamom Board, Commodity Note on Cardamom, 1985 (Cochin, 1985) p.55.

and 1983-84, there was a drastic decline in production and productivity, with productivity as low as 23 kgs. per hectare. The main reason for the decline in production and productivity during this period was the unprecedented drought in the two consecutive years 1982-83 and 1983-84.

Table 4.7 suggests a certain cyclical nature of the fluctuations in yield per hectare and volume of production of cardamom. The cyclical trend would appear to be that after a steady increase of production and productivity for three years, it declines. It is to be researched if the cyclical variation in the climate is the reason for this phenomenon. The total production of cardamom in 1983-84 was only 1,600 M.T., but this jumped upto 3,900 M.T. in 1984-85. If the cyclical theory of production can be believed we may expect to have a dramatic increase in production for two more years, ie., upto 1986-87.

It is in this context that the Cardamom Board has drawn up proposals to implement a massive scheme for providing irrigation facilities to cardamom plantations during the Seventh Five Year Plan period (1985-86 to 1989-90) by tapping water resources by construction of farm ponds and check dams in existing rivers, streams etc. The scheme was developed on the basis of the experiences of drought in 1982-83 and 1983-84.

Table 4.8 gives the state-wise production of cardamom in India for the period 1964-65 to 1984-85 and Graph 4.3 a picture of the same from 1970-71 to 1984-85.

Table 4.8 and Graph 4.3 reveal that as in the case of the total area under cardamom cultivation, Kerala accounted for the major share of cardamom production all through the years. In 1984-85, 59 per cent of the total production was from Kerala while Karnataka and Tamilnadu accounted for 34 per cent and 7 per cent respectively. In 1984-85, the share of Kerala increased to 73 per cent, while that of Karnataka and Tamilnadu declined to 22 per cent and 5 per cent respectively. Kerala, thus has a significant position in the cardamom map of India. Further, the cardamom produced in Kerala, known as 'Alleppey Green', constituted 82 to 98 per cent of cardamom exported from India. The increase in world consumption, especially in the Middle East countries, and their preference for Alleppey Green cardamoms over the 'Coorg Green' and other bleached/bleachable varieties grown in Karnataka, has given a big boost to the cultivation of cardamom in Kerala. It is discussed in detail later that the price and value of Indian cardamom are mainly determined by its demand in the export market.⁸

⁸For details, see Chapter VII.

Table 4.8

State-wise quantity and value of cardamom produced in India: 1964-65 to 1984-85

(Figures in brackets are percentages)

Year	K E R A L A		K A R N A T A K A		TAMILNADU		I N D I A	
	Production (M.T.)	Value (Rs/Cr.)	Production (M.T.)	Value (Rs/Cr.)	Production (M.T.)	Value (Rs/Cr.)	Production (M.T.)	Value (Rs/Cr.)
1964-65	1300 (59)	3.32 (59)	750 (34)	1.95 (34)	150 (7)	0.37 (7)	2200 (100)	5.64 (100)
1965-66	1050 (53)	4.63 (53)	750 (37)	3.25 (37)	200 (10)	0.79 (10)	2000 (100)	8.67 (100)
1966-67	1550 (58)	6.36 (56)	900 (33)	4.08 (36)	250 (9)	0.98 (8)	2700 (100)	11.42 (100)
1967-68	1600 (67)	6.77 (67)	500 (21)	2.18 (22)	300 (12)	1.13 (11)	2400 (100)	20.08 (100)
1968-69	1300 (62)	6.42 (61)	550 (26)	2.95 (27)	250 (12)	1.26 (12)	2100 (100)	10.63 (100)
1969-70	1600 (70)	12.43 (71)	500 (22)	3.54 (20)	200 (8)	1.66 (9)	2300 (100)	17.63 (100)
1970-71	2130 (67)	11.34 (71)	805 (25)	3.64 (23)	235 (8)	0.96 (6)	3170 (100)	15.94 (100)
1971-72	2720 (72)	8.25 (74)	620 (16)	1.72 (15)	445 (12)	1.15 (11)	3785 (100)	11.12 (100)
1972-73	1700 (64)	9.34 (71)	700 (26)	2.67 (20)	270 (10)	1.17 (9)	2670 (100)	13.18 (100)
1973-74	1870 (67)	11.32 (68)	600 (22)	3.59 (21)	310 (11)	1.76 (11)	2780 (100)	16.67 (100)
1974-75	2050 (71)	15.77 (72)	550 (19)	4.13 (19)	300 (10)	2.10 (9)	2900 (100)	22.00 (100)
1975-76	2050 (68)	18.34 (71)	650 (22)	5.11 (20)	300 (10)	2.43 (9)	3000 (100)	35.88 (100)
1976-77	1480 (62)	24.30 (65)	700 (29)	10.15 (27)	220 (9)	3.15 (8)	2400 (100)	37.60 (100)
1977-78	2900 (74)	41.34 (80)	700 (18)	7.35 (14)	300 (8)	3.50 (6)	3900 (100)	52.19 (100)
1978-79	2900 (73)	51.83 (78)	800 (20)	10.72 (16)	300 (7)	4.11 (6)	4000 (100)	66.66 (100)
1979-80	3300 (73)	46.85 (77)	850 (19)	10.11 (16)	350 (8)	3.97 (7)	4500 (100)	60.93 (100)
1980-81	3100 (70)	33.64 (72)	1000 (23)	7.87 (22)	300 (7)	2.26 (6)	4400 (100)	43.77 (100)
1981-82	2800 (68)	33.98 (72)	1000 (25)	10.49 (22)	300 (7)	2.89 (6)	4100 (100)	47.36 (100)
1982-83	1900 (65)	30.08 (65)	800 (28)	13.27 (28)	200 (7)	3.16 (7)	2900 (100)	46.51 (100)
1983-84	1100 (69)	41.74 (70)	400 (25)	14.27 (24)	100 (6)	3.49 (6)	1600 (100)	59.50 (100)
1984-85	2850 (73)	57.80 (74)	850 (22)	16.97 (22)	200 (5)	2.99 (4)	3900 (100)	77.76 (100)
Average	(67)	(69)	(24)	(23)	(9)	(8)	(100)	(100)

Note: Production is of crop year.

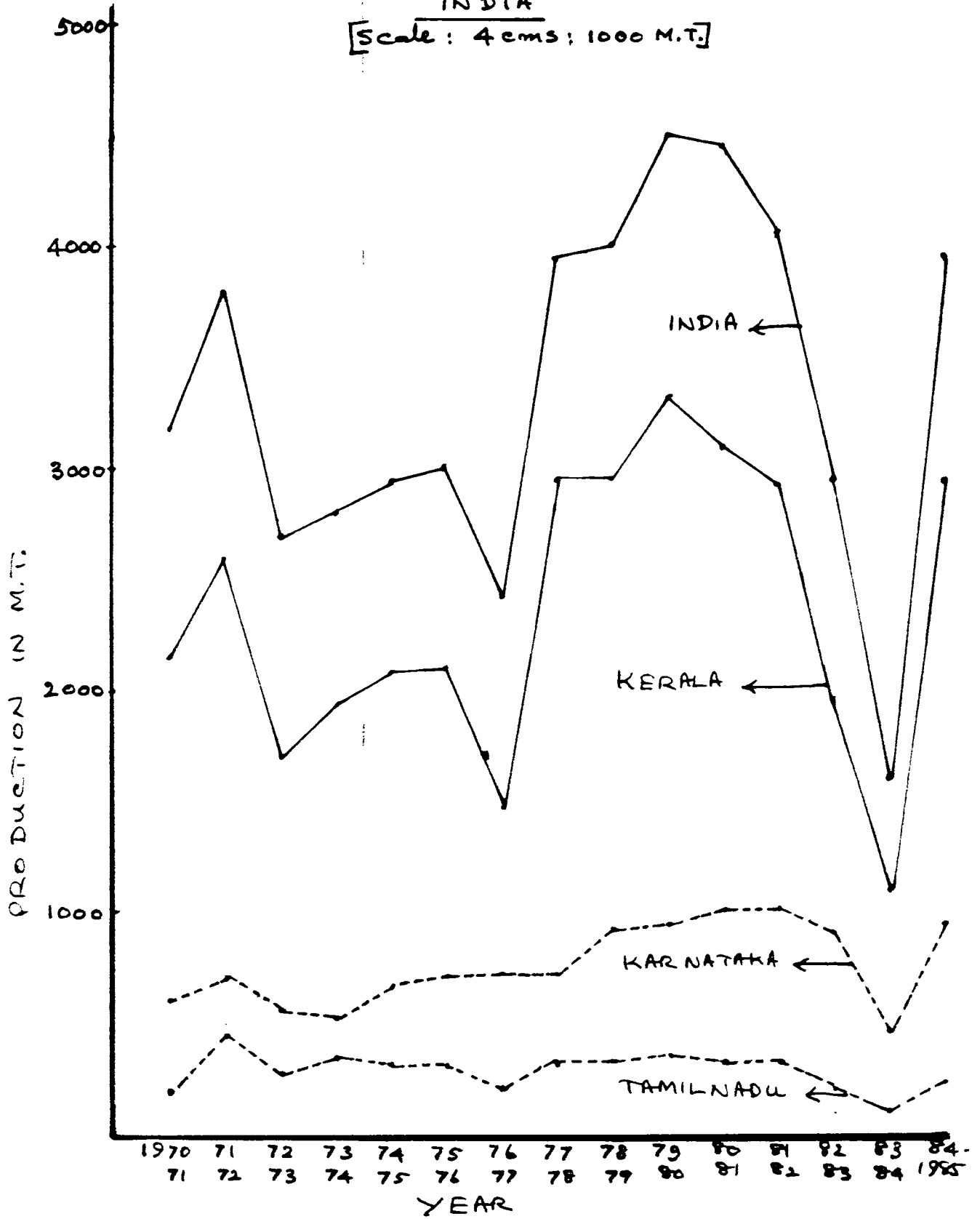
Value has been estimated on the annual weighted average prices prevailed in auction centres in respective States.

Source: Cardamom Board, Cochin.

GRAPH-4.3.

STATEWISE PRODUCTION OF CARDAMOM IN INDIA

[Scale : 4 cms ; 1000 M.T.]



This becomes evident when the value of cardamoms produced in the three States are analysed. The relevant statistics are given in Table 4.8.

In 1964-65, Kerala produced 59 per cent and Karnataka and Tamilnadu produced 34 per cent and 7 per cent respectively of the total cardamom production in the country. Value-wise also, these relative percentages were the same. But from 1969-70 onwards, it can be seen from Table 4.8 that the value contribution by Kerala was proportionately higher than those contributed by Karnataka and Tamilnadu. This was mainly on account of the greater demand for Kerala cardamom in the export market and the consequent higher price that Kerala cardamom fetched in the domestic market. The consumption of cardamom in India is more or less stagnant, and the domestic demand is mostly met by Karnataka and Tamilnadu cardamoms.

Although reliable and upto-date year-wise statistics of the area under cultivation with breakups of yielding and non-yielding plantations are not available, it is still fair to conclude from available statistics that substantial increase in the cultivated area of cardamom has not taken place in recent years. The effect of any increase in the cultivated area by way of

additional plantings in the new areas would have been offset by the degradation of cardamom areas caused by the clear felling of forest trees.

The most important factor that influences productivity or production of cardamom is undoubtedly the weather. However, no scientific studies have been conducted which can provide reliable information on the nature and magnitude of the impact of weather on production. The fact that the unprecedented drought during 1982-1984 period hit the crop very badly indicates the importance of weather in determining production. The changes in productivity from year to year by as much as + 144 per cent and -44 per cent⁹ can also be taken as indications of the impact of climate on cardamom production. Also, the data collected from irrigated plantations reveal that 100 to 150 per cent increase in cardamom production is possible with irrigation. In the years of excessive rains the cardamom crop has been badly affected by fruit drop and heavy incidence of rot diseases, reducing productivity and production. Observations by experienced planters reveal that rainfall in the month of August definitely has a positive and significant role in determining a higher productivity of cardamom. The rainfall in the months of April, October and

⁹For details, see, Table 4.5.

December also contribute positively to productivity. But it is observed by the planters that rainfall in the other months of May, June, July, September and November affects the crop adversely, though not to any significant magnitude. In short, rainfall plays a crucial role in the determination of productivity and that the rainfall in the months of April, August, October and December are by and large very beneficial to get a higher productivity. In other words, drought in April, August, October and December has overriding influence in reducing the productivity and production of cardamom in the country.

The technology developed by the cardamom research stations in fighting diseases and pests has helped the industry to increase production and productivity and the quality of cardamom in India. The most dreaded virus disease affecting the cardamom plantations in India is 'katte' or 'mosaic'. Though no 'katte' resistant plant has yet been developed, the disease is under a certain level of control, thanks to the efforts of the Cardamom Board. Pesticides and fungicides have been developed for fighting common diseases and pests in cardamom, for increasing the productivity and the quality of the produce. Free soil testing facilities are available with a number

of governmental agencies, which recommend proper fertilizer schedules to growers. Studies conducted at the Cardamom Research Station at Mudgere under the University of Agricultural Sciences, Bangalore and by the Indian Cardamom Research Institute at Myladumpara under the Cardamom Board have shown that bee-keeping in cardamom plantations would increase the quality and productivity in cardamom. Liberal assistance is available from the Cardamom Board and other agencies to growers proposing to have bee-keeping in their plantations.

An important constraint in the way of increasing productivity and improving the quality of cardamom is the insecure economic status of the small scale cultivators¹⁰. They constitute 95 per cent of the total number of growers. Fifty-five per cent of the area under cardamom in the country is also with them. Increase in the cost of inputs for cardamom cultivation on one side, and the uncertain returns on the other from the estates necessitate the small cardamom growers to utilize most of their income for livelihood rather than for improving the plantations.

The medium and large plantation owners constitute five per cent of the total number of plantation

¹⁰Those owning less than 8 hectares, are taken as small growers as per Cardamom Act, 1965.

owners. Nearly forty five per cent of the total area under cardamom is with this category of growers. They are in a better position in respect of bringing modern technology to their plantations than the small growers. It is also estimated that sixty per cent of the total cardamom production comes from the medium and large growers.

But after taking into consideration all these factors, the conclusions arrived at in the three preceding chapters regarding the dim prospects of cardamom cultivation in India seem valid. This is further substantiated when one makes an analysis of the production cost of cardamom and the expected income from the activity.

Cost of Production of cardamom

No valid study on the economics of cardamom cultivation or estimate of cost of production of cardamom has been undertaken so far, on a scientific basis. It is overdue that the Cardamom Board takes up a study to find out the economics of cardamom cultivation and the cost of production of cardamom on the basis of data collected scientifically from the three cardamom growing States of Kerala, Karnataka and Tamilnadu. Any marketing strategy that aims at a stable and remunerative price for cardamom should necessarily be based on cost of production of the commodity.

As seen earlier, Kerala accounts for 61 per cent by area and 67 per cent by production of cardamom in India. In Kerala, Idukki district alone accounts for 84 per cent of the area and 90 per cent of the production of cardamom. Moreover, except in a few cases of medium and large plantations, a sizeable area under cardamom in Karnataka and Tamilnadu is in the humid valley portions of coffee estates. Here cardamom is cultivated as a secondary crop, while it is grown as pure cardamom plantation in the Idukki district of Kerala.

Cardamom cultivation is a labour intensive activity and the labour wages in cardamom plantations differ from State to State. Labour wages are also different for cardamom and coffee plantations.

Elevations of cardamom tracts, fertility status of soils, rainfall patterns, shade conditions, nature of shade trees, varieties of cardamom plants used, density of plant population per hectare, age of the plants, etc. vary from estate to estate, place to place and State to State. The yield rate of cardamom also varies from region to region. Barring the influences of drought, heavy rainfall and other climatic factors, the average yield per hectare also varies depending upon the plants, whether they are healthy or not, manured or unmanured, and irrigated or unirrigated. The cost of cultivation

goes up when intensive cultural operations are required. All these make it quite difficult to determine the average cost of production on a scientific basis. In the following paragraphs an attempt has been made to determine the cost of production, assuming normal cultural methods and practices. It is worth pointing out that the estimate of the cost of production by the researcher is only a very crude estimate, and is in no way a substitute for a more scientific and detailed study.

As per the estimates given by ~~Mr.~~ K.V.S. Krishna, the cost of cultivation of cardamom during the first year was Rs.25,351.67 per hectare (according to January 1981 rates) of which about 30 per cent was accounted for by labour. According to him, the annual maintenance cost was Rs.11,053.00 per hectare, of which 63 per cent was accounted for labour.¹¹ According to the data supplied by the Secretary, Cardamom Growers Association, Cumbam (Tamilnadu) the cost of annual maintenance of one hectare of cardamom plantation was Rs.21,390.00 (according to December 1984 rates) of which Rs.10,053.00 (47 per cent) was for labour, Rs.3,850 (18 per cent) for material inputs and the rest of Rs.7,487.00 (35 per cent) was for supervision and overhead charges. Even when these data relate

¹¹Krishna, K.V.S., Improving Cardamom production, (Coonoor, 1982) p.38.

to two different years (January 1981 and December 1984), these estimates of cost of cultivation show considerable differences in the basic structure of expenditure such as in labour and material inputs. Though Mr. Krishna has stated that the average yield per hectare was 100 kgs.¹² the Secretary of Growers' Association has stated that the same was only 75 kgs. per hectare.

The study conducted by this researcher in April-May 1985 showed that the cardamom estates maintained on a plantation basis in the Idukki district of Kerala had an average yield of 125 kgs. per hectare. The all India production in 1984-85 was 3,900 M.T. The all India productivity estimated by Cardamom Board for the year was only 42 kgs. per hectare. The yield rate of 125 kgs. per hectare has been taken for the purpose of calculating the average cost of production of cardamom in the Idukki district of Kerala.

The yearly estimates of cost of cultivation of cardamom as for the year 1985 (April-May 1985) for the three States are given in Appendix IV to VII.

As per the field survey conducted by the researcher, the cost of cultivating and maintaining one hectare of cardamom plantation for the first three years

¹²Ibid., p.38

was estimated at Rs.18,126/- in Kerala, Rs.14,490/- in Karnataka and Rs.15,468/- in Tamilnadu. This large disparity in the three States was mainly due to differences in labour wages, which were Rs.15.65 in Kerala, Rs.9.42 in Karnataka and Rs.11.82 in Tamilnadu, per worker per day. The cost of maintaining one hectare plantation from the fourth year to the tenth year was Rs.9,283/- in Kerala, Rs.6570/- in Karnataka and Rs.7695/- in Tamilnadu, per year. The cost of maintenance of the plantation from the fourth to the 12th year was approximately the same as in fourth year itself, unless the crop is affected by unusual attack of pests and diseases. The expenditure on irrigation, if any, was not taken into consideration, as this would increase the expenditure on one side, and would drastically change the rate of yield from the normal productivity pattern of the plantation. The yield level normally remains the same on an average at about 125 kgs. per hectare per annum, even though a higher yield is obtained from the sixth to the tenth year after planting.

The estimates of expenditure have been worked out by interviewing thirty eight growers owning small, medium and large estates with a structured questionnaire¹³ in centres like Vandanmedu, Vandiperiyar, Udumbanchola and Santhanpara in Kerala; Coorg and Sakelspur in Karnataka; and Bodinayakanur and Cumbum in Tamilnadu.

¹³See, Appendix VIII.

In the survey, it was found that growers of cardamom have become quite conscious of the importance of the application of pesticides and fertilizers. But their application depends, generally speaking, on the size of the farm and the capacity of the farmer to make investments in time.

The wage rate of labour was Rs.9.80 per worker per day in Kerala during April-May 1980. This had gone upto Rs.15.65 by April-May 1985; approximately showing an increase of 10 per cent per year. More or less the same rate of increase is witnessed in the case of the cost of other inputs like pesticides, fertilizers, etc. As such, a discounted cash flow method could have been applied for calculating the expenditure on cultivation (cost of labour and inputs) during the first three years' gestation period. This was not done, taking into consideration the fact that a ten per cent interest on the expenses should have been provided for the three year gestation period.

In the following calculations, the cost of cultivation or production of cardamom in the Idukki district of Kerala alone is taken, as it was felt that this would give a fair picture of the whole industry.

The summary of the expenditure on cardamom cultivation is given in Table 4.9.¹⁴

¹⁴For details, see Appendix IV to VII.

Table 4.9

Cost of Cultivation

Particulars	Labour required (mandays)	Expenditure at '85 rates	
		Rs.	P.
<u>COST DURING FIRST YEAR</u>			
1. Cost of labour	247	3865.55	
2. Cost of seedlings for initial planting (1250 nos.)	...	2500.00	
3. Cost of plant protection chemicals	...	300.00	
4. Cost of fertilizers	...	150.00	
Total		6715.55	
<u>COST DURING SECOND YEAR</u>			
1. Cost of labour	227	3552.55	
2. Cost of seedlings for gap filling (125 nos.)	...	250.00	
3. Cost of plant protection chemicals	...	400.00	
4. Cost of fertilizers	...	920.00	
Total		5122.55	

to be continued

Table 4.9 (contd..)

Particulars	Labour required (mandays)	Expenditure at 1985 rates. Rs. P.
<u>COST DURING THIRD YEAR</u>		
1. Cost of labour	220	3443.00
2. Cost of seedlings for gap filling (62 nos.)	...	125.00
3. Cost of plant protection chemicals	...	870.00
4. Cost of fertilizers	...	1850.00
Total		6288.00
<u>AVERAGE COST (PER YEAR) FROM FOURTH YEAR TO TWELFTH YEAR</u>		
1. Cost of labour	412	6447.80
2. Cost of seedlings for gap filling (62 nos.)	...	125.00
3. Cost of plant protection chemicals	...	350.00
4. Cost of fertilizers	...	750.00
Total		9272.80
TOTAL EXPENDITURE FOR 12 YEARS		
		101581.30
AVERAGE COST OF CULTIVATION PER YEAR		
		8465.11

From Table 4.9, it can be seen that, on an average, the cost of labour works out to 68 per cent of the total cost of cultivation and the cost of material inputs comes to only 32 per cent for the 12 years of cardamom cultivation, proving that cardamom cultivation is a labour intensive activity.

The estimate of net cost of production of cardamom is given in Table 4.10.

It may be noted that in the above computation, no allowance has been made for overhead expenses in the form of expenditure on tools, curing houses, buildings, leave with wages to workers, bonus to employees and workers, agricultural income-tax, if any, etc. It is also important to note that no provision has been made for the value of the land on which cardamom plants are grown. There are difficulties in assessing the value of land as such, in different locations and regions. Land price drastically change along with the fluctuations in prices of cardamom every year. It also varies depending upon the location, ^{transport} facilities, soil conditions, irrigation facilities, elevation, high or low productivity zones, etc. If the above costs are also quantified, though arbitrarily, in the absence of other methods, as equivalent to 10 per cent of the net cost of production, the cost of production of cardamom would work out

Table 4.10

Average net Cost of Production per kilogram

Particulars	Expenditure at 1985 rates	
	Rs.	P.
1. Average cost of cultivation per year	8, 465.11	
2. Curing, cleaning & storing charges (125 kgs) (@ Re.1/- per kg.)	125.00	
3. Transport, auction commission, sales tax etc. (@ Rs.10.50/kg.)	1,312.50	
4. Miscellaneous expenditure including supervisory charges, land taxes etc. (@ 10% of cost of cultivation)	846.51	
5. Depreciation allowance for expenditure on first three year gestation period (Total cost of gestation period:Rs.18,126/- 12 year plant cycle)	1,510.50	
6. Interest on 4th year working capital of Rs.9,273/- (@ 12% per annum)	1, 112.75	
Total cost of producing 125 kgs. of cardamom	13,372.37	
Net cost of production of 1 kg. of cardamom	106.98	

as follows:

<u>Particulars</u>	<u>At 1985 rates</u> Rs.
Net cost of production of one kilogram of cardamom	106.98
Overhead charges, including provision for the cost of land @ 10 per cent of net cost of production	10.70

COST OF PRODUCTION OF ONE KILOGRAM OF CARDAMOM	117.68
	=====

If a margin of profit of 33.33 per cent is allowed to the cardamom grower, in view of the difficult terrains he works at, the fair price for the grower would have been Rs.153.34 per kilogram during the year 1984-85. The actual auction price in that year was Rs.199.91. This suggests a bright picture, but the reality was far different.

It may be added that the estimate of the cost of production and fair price for the grower were computed on the basis of the average yield rate obtained from the representative estates surveyed. But unfortunately, the all India yield rate was only 42 kgs. per hectare in 1984-85 as calculated by the Cardamom Board, whereas the average yield rate obtained from the plantations surveyed was 125 kgs. per hectare. If we take

only the actual yielding area alone in the country into consideration, the productivity per hectare may perhaps work out to a maximum of 65 kgs. per hectare as the national average. In such a situation the cost of production per kilogram of cardamom would be much more than what was computed from the representative estates surveyed.

It has already been seen that 86 per cent of the growers are in the smallest scale sector owning less than 4 hectares of cardamom land, accounting for 38 per cent of the area under cardamom. During the field studies on the cost of cultivation of cardamom, it was noticed that this group conducted the cardamom cultivation in a very haphazard manner, without proper farm management practices. They did not take proper care for pesticide or fertilizer applications in time, because of their inherent financial difficulties. The majority of their income went for their own maintenance, thereby reducing the level of inputs for proper cultivation of cardamom. This has resulted in low quality and yield rate in their estates, the productivity remaining at an average level of 74 kgs. per hectare. This information was collected from the survey of 14 estates of size less than 4 hectares in the Idukki district. Absentee landlordism was also found to be largely prevalent in the small **scale**

sector in Idukki district. This was because of the inhospitable living conditions in the plantation areas of Idukki district and the inadequacy of income from the plantations for livelihood. Though the cardamom lands are in Kerala, most of the owners live in the Madurai district of Tamilnadu and engage in other occupations.

From the survey, it was also found that the expenditure, yield rate and quality were higher in the medium and large estates. This was so, even when the difficulties of terrain, climate etc. remained the same as in the case of the smaller estates. This naturally suggests that cardamom cultivation in India has very good scope for increasing the yield per hectare, through proper plantation management practices. The cost of production can also be brought down by adopting appropriate and advanced agricultural technology.

The wide fluctuations in prices of cardamom constitute the major stumbling block in increasing the productivity of cardamom in the small scale sector. It also encourages the absentee landlordism in cardamom plantations because of the uncertainty of income from year to year. A reasonable, remunerative and guaranteed price for cardamom alone would encourage the improvement of productivity and production of cardamom in the country.

Since cardamom is not an annual crop, the varying annual average cost of production cannot be an important determinant of the current price level. The variable annual cost involved in maintaining plants and the spread over cost of establishing the plantation should form the base for determining the current price level. But the actual price level of cardamom is determined by the current levels of prices in the world markets and the available volume of supply each year from India, Guatemala and other producing countries.

Prices of agricultural produces are determined by the relationship between available supply and the market demand. One of the leading characteristics of exports of primary produces is their persistent tendency to undergo large fluctuations both in volume and prices. If the primary producers are to be benefited, pricing has to be made controllable, or else a poor crop with higher prices or a fair crop with low prices would mean the same to the growers.

CHAPTER V

CURING, GRADING AND QUALITY CONTROL

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CHAPTER V

CURING, GRADING AND QUALITY CONTROL

Cardamom plants normally start bearing capsules from the third year of planting. However, economic yields are obtained only from the fourth year onwards. In most of the areas, the peak period of harvest is in September-November. The crop is harvested at an interval of 30 days in Kerala and Tamilnadu, and 15 to 20 days in Karnataka. Mature capsules are harvested just before full ripeness, for obtaining green colour on curing, for preventing the splitting of capsules, for avoiding squirrel damage and for higher percentage of recovery. Mature capsules can be harvested by slight pulling, without looking for colour indications.

Curing of Cardamom

After harvest, the capsules are washed and dried, either in specially built curing chambers or in the sun. Sun dried cardamom is sometimes bleached for obtaining the white cardamom of commerce. Cardamom capsules kept for drying in the drying chambers or in the sun are to be spread evenly on the tray or mat and stirred during drying to ensure uniform drying. Cardamoms having

a deep parrot green colour has a special consumer preference, especially in the core market of the Middle East countries. White cardamoms or bleached cardamoms are favoured by the consumers in U.S.A, U.K and European countries.

The price of cardamom is determined mainly by its size and the intensity of the green colour of its skin. Cardamom with a deep green colour fetches a premium price in foreign markets, especially in the Middle East countries. For cardamom of same size or boldness, the extra price for the green variety ranges from 15 to 25 per cent, depending on the intensity of green colour. The prime reason for the importance attached to the colour of the cardamom skin in the importing countries, is the belief that samples with deep green coloured skin represent freshly cured cardamom, which has not been stored too long. This is true in a large measure because as at present, cured/stored cardamom loses its initial green colour rapidly on storage.

The Central Food Technological Research Institute, (CFTRI), Mysore carried out systematic experiments in 1966 with a view to upgrading the quality of the dried cardamom from the above-mentioned standpoint. During their investigations it was found that regeneration of

green colour from the skin of over-mature cardamom fruits was not possible, once their colour had already begun to turn yellow. Therefore, to obtain the optimum yields, only mature cardamom fruits should be harvested for drying, so much so that the colour of their skin should be still green with fully mature capsules. Such fully mature capsules are indicated by the black colour of the seeds within. Their investigations on the quality of cardamom fruits grown in different areas of Kerala, Tamilnadu and Karnataka have shown that the relationship of the skin colour to maturity depends on the variety of cardamom grown as well as certain agroclimatic factors. It was observed that the colour of the cardamom fruits remain still green at the time of harvest in Kerala and Tamilnadu, whereas it is not so in Karnataka. This is the reason why the colour of "Alleppey Green" cardamoms produced in Kerala and Tamilnadu are, on an average greener than the "Coorg Green" cardamoms produced in Karnataka. The genesis of the term "Alleppey Green" and its acceptance in Middle East markets can also be traced to the above fact, because most of the dried cardamom produced in Kerala used to be exported from Alleppey port in olden days. On the other hand, the colour of the skin of cardamom fruits begins to turn yellow before they are mature and ready for harvest

in certain areas of Karnataka like Saklespur and Mudigere, so much so that sun drying and bleaching of cardamom fruits are practiced in these areas, a practice which is not followed in Kerala and Tamilnadu States.

The constituent in cardamom skin responsible for its green colour, as in most green leaves and vegetables, is the common plant pigment 'chlorophyll'. The studies by CFTRI, Mysore have proved that by suitable alkali treatment, the green colour of cardamom can be stabilized during curing and storage.

"Among different alkaline salts available for this purpose, sodium carbonate (washing soda) was found most suitable on account of (i) easy availability (ii) comparative cheapness and (iii) ease of handling (because of its non-caustic nature). After a number of trials, the optimal conditions of alkali treatment were found to be soaking the freshly harvested green cardamom fruits in 2 per cent washing soda solution for 10 minutes, since further increase in washing soda concentration or the soaking time did not confer any additional benefit."¹

Before alkali treatment, the cardamom fruits are to be washed in clean water and drained properly to

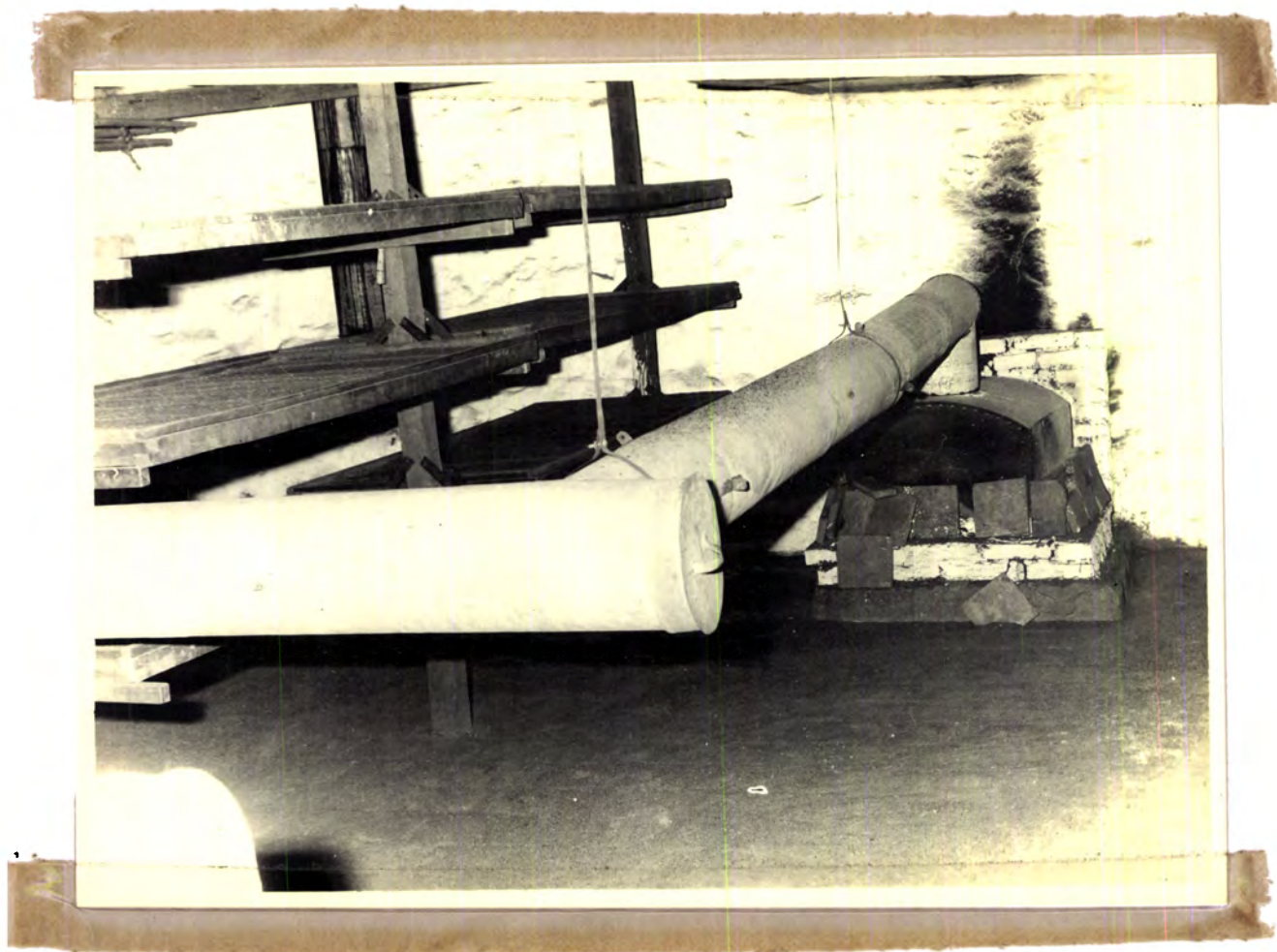
¹Natarajan C.P. and others, "Preservation of Green colour in Cardamom", Indian Spices Journal, (Cochin, Jan-March, 1967) p.6.

avoid diluting of washing soda solution. Since the green colour of cardamom skin is extremely photo-sensitive and rapidly fades in sunlight, the alkali treated cardamom fruits have to be cured only in the artificial curing houses and not in the sun. Only two kilograms of washing soda are required to treat one M.T. of fresh cardamoms. Hence the cost of alkali treatment may work out to 5 to 10 paise only per kilogram of dried cardamom, inclusive of all costs.

The freshly harvested cardamom fruits contain 80 per cent of water which has to be removed completely or at least upto the level of less than 12 per cent in the process of drying. As explained, soaking of harvested cardamom in two per cent washing soda solution for 10 minutes before drying helps in retaining a better green colour. But the researcher's enquiries reveal that the majority of the cardamom growers do not usually adopt the alkali treatment. Their reasoning was that this treatment would reduce the pleasant smell of cardamom, which is highly essential for getting a good price. Cardamom traders and exporters are generally of the opinion that the deep green colour obtained through alkali treatment had no longevity for colour compared to that of normally cured cardamom, though no scientific data is available to prove the opinion of the traders and exporters. However, they admit that alkali treated cardamom did not get mould and pest infestations.

All the growers in Kerala and Tamilnadu, and a few in the Coorg district of Karnataka, use the conventional curing houses for retaining the green colour of cardamom. Freshly harvested cardamoms are dried in flue-piped curing houses by the radiation of heat, emerging from the flue pipes. The structure of the curing house made for the purpose consists of walls made of bricks or stones and a ceiling with tiles. A furnace is established on one side of the chamber and the heat is produced by burning firewood or farm waste in the furnace. A pipe made of iron or zinc sheet, 0.8 cm thick, starting from the furnace passes through the chamber in a zig-zag manner and opens outside the roof. The heat generated in the furnace passes through the pipe and increases the temperature of the room by radiation. In some cases, fans fitted on either side of the walls uniformly spread the temperature. Inside the room, wooden shelves and wooden or aluminium trays with wire-mesh carrier are piled one over another with a spacing of 20 to 22.5 cms between the trays. The temperature in the room has to be regulated looking into the thermometer. Under these conditions, high quality dry green cardamoms are obtained in 24 to 40 hours at a temperature of 45° to 50° C. A drying chamber of the dimension 4.5 m length and 4.5 m breadth is sufficient for a plantation producing 1800 to 2000 kgs. of freshly harvested cardamom.

PLATE 5.1



INSIDE VIEW OF A CONVENTIONAL
CURING HOUSE

Different types of electrical dryers are now available in the market for curing cardamom and to preserve the green colour. Among them, a dryer with dimensions of 90 cms length and 84 cms width is most common. Inside the dryers, 24 numbers of aluminium trays of size 81 cms length and 40 cms breadth are piled one over other with a gap of two cms between the two rows. The green capsules after harvest are uniformly spread on these trays. The electrical coils arranged on either side of the dryer become hot and radiate the heat energy. The heat is uniformly spread over by fans throughout the dryer. About 50 kgs. of raw capsules can be dried in 10-12 hours using this type of electric dryer, by maintaining the temperature at 45°C to 50°C . By this method it is possible to obtain medium to good green coloured cardamom. Frequent power failures make the system very inconvenient and dangerous. At the time of power failures, if the dryer is not opened and cardamom trays are not taken out, the drying capsules would be turned into black colour. Therefore, continuous attention is necessary for the entire period of drying in the electric dryer.

A bin dryer has been designed recently by the research engineers of University of Agricultural Sciences, Bangalore.

"The drying unit consists of mainly a blower with motor, electrical heating bank and drying chamber. The blower is of backward curve vane type coupled to 3.73 KW. motor 282 revolutions per minute. Volume of air driven through the dryer can be varied from 1.5 to 8 cm³ per second. The dryer is made of mild steel, asbestos sheet and wood. Aluminium or steel trays of size 0.4 m x 0.6 m can be arranged one over the other. Required amount of air passes below the trays by means of a centrally located flue pipe. The cardamom capsules are to be uniformly spread on these trays. Hot air passing through the pipes increases the temperature, ranging from 30° C to 80° C. It was observed that the best quality capsules were obtained by drying the capsules at 55° C. maintaining the volume of air at 3.7 cm³ per second. Relative humidity ranges from 65 to 92 per cent during drying. It has been observed that the cardamom dried by this method contained mean volatile oil content of 7.66 per cent. The cost of dryer is around Rs.12,000/- with the expected life span of 15 years. In the conventional dryers the cost of drying operation is Re.1 per kg. while in the bin dryer it is worked out to be Re.0.66 per kg."²

Modern low cost cardamom drier (Melccard dryer) developed by the Cardamom Planters' Association College, Bodinayakanur, Tamilnadu with the financial assistance of the Cardamom Board is an improved form of the

²Gurumurthy, B.R. and Others, "Improved methods of drying cardamom", Cardamom magazine, (Cochin, September 1985), p.5.

conventional dryer. The following are the special features and advantages of the Melccard Drier: (i) The drying chamber is heated mainly by a hot chamber beneath, as against heating done by hot flue pipes. This gives uniform spread of hot gas in the chamber. (ii) A good number of holes are provided near the floor for entry of air into the dryer. This gives a good flow of air upwards helping speedy removal of moist air from dryer. (iii) Drying is completed in less than 20 hours. Due to reduction in curing time, firewood consumption is reduced considerably. Due to arrangements made for minimising heat loss, further saving in firewood is also achieved. (iv) The full area in the curing chamber can be used for curing cardamom and therefore a lot of saving of space is achieved minimising the cost of construction. (v) In the conventional curing chamber it is necessary to dismantle the flue pipes for removal of soot. In Melccard dryer, there is special arrangement for removal of soot as and when required. The cost of construction and cost of operating the Melccard dryer is very cheap compared to the conventional curing chamber, and the colour of cured cardamom is comparable to that cured in conventional ones. The capacity of the prototype of Melccard dryer is 10 kg. of fresh capsules with a provision to increase the capacity to 300 kgs. This dryer requires only 19 to 20 hours to cure cardamom with a very good green colour quality.

The Regional Research Laboratory (CSIR), Trivandrum has recently developed a new type of "Through Flow Dryer" for cardamom with the help of the Engineering Division of the Central Food Technological Research Institute, Mysore. This dryer consists of a centrifugal blower and electrical furnace with arrangements to distribute the flow of hot air uniformly and a drying chamber where 120 kgs. of fresh cardamom capsules can be loaded to a bed thickness of 20 cms. The air velocity is 60 cms. per second and the drying temperature is thermostatically controlled. The hot air carrying the humidity was not allowed to recycle. Field studies have been carried out with this dryer.

"While a temperature adjusted at 50°C, the time taken for drying 120 kgs. of fresh capsules was 22 hours. The dried capsules have been found to be acceptable to the trade, superior in green colour, flavour and appearance."³

All the above new types of cardamom dryers are under field studies for further improvements. The commercial manufacture and use of these dryers are expected by 1987.

³Varkey, George. A and others, "Artificial drying of cardamom", Cardamom magazine (Cochin, November, 1984) p.8.

Saklespur and Mudigere in Karnataka are the main centres of producing sundried and bleached cardamoms. Sundried cardamoms are usually of uneven colour, and have less value in the market, and hence they are usually put through a bleaching process.

Sulphur bleaching is the widely practised method of bleaching. It involves sulphur fumigation with alternate periods of soaking and drying. In this method, the sundried cardamom capsules are soaked in two per cent bleaching powder (20 gms. per litre of water) for one hour and spread on wooden trays which are arranged inside air tight chambers. Sulphur dioxide is produced by burning sulphur (15 gms. per kg. of capsule) and made to pass over the trays. The process of soaking and drying is carried out for 3 to 4 times depending upon the intensity of white colour required.

Cardamoms are also bleached by treating with two per cent potassium metabisulphite, containing one per cent hydrochloric acid for 30 minutes. After this process, the capsules are to be transferred to four per cent hydrogen peroxide solution for six hours. Cardamoms are also bleached by soaking them for six to eight hours in 4 to 6 per cent hydrogen peroxide solution of pH 4.0.

"The bleached cardamom capsules are further dried to bring down the moisture content to 10-12 per cent. The bleached capsules contains sulphur which protects the cardamom against store pests. But it was found that at each bleaching process at least five per cent of the volatile oil is lost."⁴

Before disposing off the produce in the market, the stalks and calyces are removed from the dried cardamom. This is accomplished by rubbing the cardamom over a coarse surface of jute hession or coir mat or wiremesh. They are further cleaned by winnowing. The cleaned capsules are then sorted according to size and colour by hand-picking. Damaged, shrivelled and very small capsules are removed and sold separately which are later used for extraction of seed or oil, by the traders and manufacturers. The cardamoms are generally sorted as extra bold greens, bold greens, smalls, etc., by the growers. Proper grading is not usually done by the cardamom growers, and they put their cardamoms for sale in bulk in two or three sorted varieties.

Storage of Cardamom

Growers generally store cardamom in high density black polythene lined (inside) gunny bags in their

⁴Gurumurthy, B.R., & Others, "Improved methods of drying cardamom", Cardamom magazine, (Cochin, September, 1985) p.7.

estates, till it is marketed. Wholesale dealers and exporters also do not store cardamom for long, as this is high value item and the quality deteriorates on storage.

The studies made at the Regional Research Laboratory (CSIR), Trivandrum have shown that:

"storage of alkali treated cardamom at a moisture level of less than 10 per cent in dark condition is essential for retention of green colour and flavour for more than one year".⁵

Since volatile oils are the contributors to the natural flavour and aroma of cardamom, the temperature should be kept at a low level during storage. Also since Alleppey Green cardamoms have very good natural green colour due to high chlorophyll content, it should be protected from temperature and light during storage. Insect attack in stored cardamom is another problem. This should also be tackled in a proper way. Taking into consideration all these factors, the Regional Research Laboratory (CSIR), Trivandrum conducted studies in cardamom storage in conventional "mooda" packing, with 300 gauge high density black polythene inside linings during 1983

⁵Gopalakrishnan, M and others., "Storage studies on cardamom in conventional packings", paper presented at 'Cardamom Day Seminar' at Trivandrum, January, 1986. (Unpublished). p.2.

and 1984 for a period of 15 months. The grades used were AGB (Alleppy Green Bold) and AGS (Alleppy Green Superior).

"The moisture content of AGB grade was 7 per cent and that of AGS grade was 8 per cent. During storage of cardamom, the moisture content gradually increased and it was around 12 per cent after 6 to 10 months in both the cases. Then the moisture level dropped to some extent showing that the variation in humidity level of the atmosphere affected the stored cardamom due to lower level of moisture proofness of the polythene bags. The loss of volatile oil from 8.15 per cent to 5.30 per cent in the case of AGS grade and 8.6 per cent to 5.35 per cent in the case of AGB grade was also noticed over a period of 15 months. Optical rotation of oils of both grades changed from the initial value of $+30^{\circ}0'$ to $+37^{\circ}0'$ during one year storage, and there was no change in the refractive index of the oils, in both the cases. Though there was no significant variation in the percentage of composition of the major constituents of the cardamom capsule, a decrease in the concentration of Terpinyl Acetate has been noticed."⁶

The above studies and results point out to some of the inadequacies of the conventional "mooda" packing. Polyester or poly laminated pouches with better

⁶Ibid., p.3.

moisture and light barrier properties for unit packs, and modern types of container boxes for bulk packing would be better alternatives for cardamom packing and storage.

From the above, it can be concluded that the retention of intrinsic quality and colour of cardamom capsules on storage is maximum for one year under improved methods of packing. No data on storage studies on cardamom powder and oil are available.

Grading and Quality Control in Cardamom

In order to encourage fair trade practices and ensure quality of cardamom sold in the country, the Government of India notified the "Cardamom Grading and Marketing Rules 1962", under the Agricultural Produce (Grading and Marking) Act, 1937, prescribing the standards for different varieties and grades of cardamom. These 'agmark' (short form of Agricultural Produce Grading and Marking) grades are not compulsory for internal trade.⁷ Hence as in the case of many other agricultural commodities, the 'agmark' grades and certifications are not being used for internal trade of cardamom in the country. Cardamom trade within India is absolutely free from any grade specifications or quality stipulations.

⁷See Appendix IX.

The scheme for compulsory pre-shipment inspection and quality control came into effect from 1st January 1963 onwards. The grades notified under the above said statute are only 'agmark' grades mentioned earlier. The 'agmark' grades are prescribed on the basis of such factors as colour, weight per litre, size, and percentage (by count) of empty, malformed, shrivelled and immature capsules. The total number of grades at present is thirty four. Separate specifications have been drawn up for different varieties of cardamom, cardamom seeds and powder. The 34 grades of cardamom are as follows.⁸

A. ALLEPPEY GREEN CARDAMOMS

1. Extra Bold	-	ABEB
2. Bold	-	AGB
3. Superior	-	AGS
4. Shipment Green	-	AGS 1
5. Shipment Green	-	AGS 2
6. Light	-	AGL
7. Non-Specified	-	AGN

B. COORG GREEN CARDAMOMS

1. Extra Bold	-	CGEB
2. Bold	-	CGB
3. Superior	-	CG 1
4. Coorg Green or Motta Green	-	CG 2

⁸For more details, see Appendix IX

- | | | |
|------------------|---|------|
| 5. Shipment | - | CG 3 |
| 6. Light | - | CG 4 |
| 7. Non-Specified | - | CG |

C. BLEACHED OR HALF BLEACHED CARDAMOMS

- | | | |
|---------------------------|---|------------------|
| 1. Bleached/Half bleached | - | BL 1* |
| 2. Bleached/Half bleached | - | BL 2* |
| 3. Bleached/Half bleached | - | BL 3 |
| 4. Non specified | - | BL Non Specified |

Note: * The word 'special' would be affixed to the grades BL 1 and BL 2 if atleast 95 per cent of the capsules do not have 'thrip' marks over 50 per cent of their body surface.

D. BLEACHABLE WHITE CARDAMOMS

- | | | |
|--------------------------------------------------------|---|------|
| 1. Mysore/Mangalore Bleachable cardamom A clipped | - | BW 1 |
| 2. Mysore/Mangalore Bleachable cardamom A unclipped | - | BW 2 |
| 3. Mysore/Mangalore Bleachable Bulk cardamom clipped | - | BW 3 |
| 4. Mysore/Mangalore Bleachable Bulk cardamom unclipped | - | BW 4 |
| 5. Non specified | - | BW N |

E. MIXED CARDAMOMS

- | | | |
|---------------------|---|------|
| 1. Mixed Extra Bold | - | MEB |
| 2. Mixed Bold | - | MB |
| 3. Mixed Superior | - | MS |
| 4. Mixed Shipment | - | MS 1 |

- | | | |
|------------------------|---|------|
| 5. Mixed Shipment | - | MS 2 |
| 6. Mixed Light | - | ML |
| 7. Mixed Non specified | - | M(a) |

F. CARDAMOM SEEDS

- | | | |
|--------------------------------------|---|------|
| 1. Prime | - | CS 1 |
| 2. Shipment | - | CS 2 |
| 3. Broken (include light seeds also) | - | CS 3 |

G. CARDAMOM POWDER

The grade and check sampling certificates are issued by the Office of the Agricultural Marketing Advisor to Government of India, Nagpur through its Regional and Suboffices functioning in Bombay, Bodi-nayakanur, Cochin, Madras, Mangalore, etc. The cardamom grading and marketing rules, 1962 as amended from time to time are given in Appendix IX.

The 34 grades of cardamom (including cardamom powder) as detailed in Appendix IX, covers the entire varieties of cardamom capsules and powder produced in the country. As there is no restriction or ban on export of any variety or grade of cardamom from India, depending on the requirements of buyers abroad, the highest to the lowest grades of cardamoms are feely exported from India.

The non-availability of sufficient quantity in certain grades like Alleppey Green Extra Bold (AGEB) is the only limiting factor for export. As indicated earlier, the grading of cardamoms as per 'agmark' specifications is done by the traders and exporters, and grading is not done for internal marketing of cardamom. In the process of grading of cardamom for export, some grades which do not have ready export order in hand, are sold in the internal market depending upon the situation and the market requirements.

Details of cardamom agmarked, exported, etc. are given in Table 5.1 and 5.2. A careful study and analysis of the Tables reveal that the data available is not entirely reliable. For example, the Coorg Green cardamoms exported for five years from 1971-72 to 1975-76 as shown in Table 5.1, exceed the total volume of cardamoms agmarked in all these years. Such types of discrepancy are visible in the case of other varieties of cardamoms exported also, including Alleppey Green varieties, especially during 1978-79. The logic of carry over stock of 'agmarked' cardamom from one financial year to 'exported' cardamom to the next financial year does not apply in these cases, when we go through the figures of the preceeding and succeeding years on a continuous basis.

Table 5.1

Cardamoms Agmarked and Exported, 1970-71 to 1984-85
(Quantity in Metric Tonnes)

Year	Green			Bleached/		Seeds		Others			Total	
	Alleppey Agmarked	Coorg Agmarked	Coorg Agmarked	Bleached Agmarked	Bleached Exported	Agmarked	Exported	Mixed Agmarked	Exported	Agmarked		
1970-71	1616	1505	72	65	103	86	52	37	4	12	1847	1705
1971-72	2110	1753	24	117	124	186	57	44	3	47	2318	2147
1972-73	1210	1130	35	124	61	85	19	31	3	14	1328	1384
1973-74	1927	1555	24	89	95	91	29	57	1	21	2076	1813
1974-75	1548	1294	8	146	103	158	17	21	-	7	1676	1626
1975-76	1969	1810	14	32	96	70	24	17	-	12	2103	1941
1976-77	814	803	13	13	70	61	12	16	-	-	909	893
1977-78	2636	2595	21	20	119	119	16	12	10	17	2802	2763
1978-79	2241	2764	16	10	48	68	23	1	2	33	2330	2876
1979-80	2640	2493	2	1	115	106	40	36	-	-	2797	2636
1980-81	2318	2209	1	1	121	113	16	15	2	7	2458	2345
1981-82	2063	2193	4	1	141	119	21	12	@	-	2229	2325
1982-83	987	933	2	@	43	38	39	47	14	14	1085	1032
1983-84	158	211	@	@	33	30	17	17	-	-	208	258
1984-85	3665	2322	-	-	62	56	11	5	-	-	3738	2383

Note: @: Negligible

Source : Regional office of the Directorate of Marketing & Inspection,
Ministry of Agriculture, (Government of India), Cochin.

Table 5.2

Cardamoms 'domarked' in India: 1970-71 to 1984-85

(Quantity in M.T., Figures in brackets are percentages in total)

Grades	1970-71	1971-72	1972-73	1973-74	1974-75	1975-76	1976-77	1977-78
AGEB	73 (3.9)	101 (4.3)	40 (3.0)	78 (3.7)	82 (4.9)	119 (5.6)	54 (6.0)	181 (6.5)
AGB	271 (14.7)	296 (12.8)	175 (13.2)	413 (19.9)	351 (20.9)	409 (19.4)	203 (22.3)	905 (32.3)
AGS	560 (30.3)	1030 (44.5)	410 (30.9)	919 (44.3)	571 (34.2)	767 (36.5)	240 (26.4)	1006 (35.9)
AGS 1	464 (25.1)	496 (21.4)	419 (31.6)	467 (22.5)	457 (27.2)	593 (28.3)	292 (32.1)	500 (17.8)
AGS 2	177 (9.5)	93 (4.0)	93 (7.0)	7 (0.3)	5 (0.3)	49 (2.3)	5 (0.6)	10 (0.4)
AGL	34 (1.9)	40 (1.7)	35 (2.6)	35 (1.2)	79 (4.7)	22 (1.1)	7 (0.7)	2 (0.1)
AGN	37 (2.0)	54 (2.3)	38 (2.8)	18 (1.0)	3 (0.2)	10 (0.5)	13 (1.5)	32 (1.1)
Alleppey Green Total	1616 (87.4)	2110 (91.0)	1210 (91.1)	1927 (92.9)	1548 (92.4)	1969 (93.7)	814 (89.6)	2636 (94.1)
CGEB	-	-	3 (0.2)	-	-	-	-	-
CGB	-	1 @	2 (0.1)	5 (0.2)	-	2 (0.1)	-	2 (0.1)
CG 1	50 (2.8)	2 (0.1)	3 (0.2)	5 (0.2)	2 (0.1)	@	@	3 (0.1)
CG 2	6 (0.3)	6 (0.3)	17 (1.3)	7 (0.3)	2 (0.1)	1 @	8 (0.9)	3 (0.1)
CG 3	6 (0.3)	13 (0.6)	10 (0.8)	6 (0.3)	4 (0.2)	11 (0.5)	5 (0.6)	12 (0.4)
CG 4	8 (0.4)	2 (0.1)	@	1 @	-	-	-	1 @
CG	2 (0.1)	-	-	-	-	-	-	-
Coorg Green Total	72 (3.9)	24 (1.1)	35 (2.6)	24 (1.0)	8 (0.4)	14 (0.6)	13 (1.5)	21 (0.7)
BL 1	19 (1.0)	12 (0.5)	27 (2.0)	32 (1.6)	30 (1.8)	10 (0.5)	17 (1.8)	16 (0.6)
BL 2	12 (0.7)	8 (0.4)	24 (1.7)	49 (2.4)	69 (4.1)	63 (3.0)	18 (2.0)	27 (1.0)
BL 3	-	-	1 (0.1)	4 (0.2)	@	23 (1.1)	34 (3.7)	70 (3.5)
BL N	71 (3.8)	104 (4.5)	8 (0.6)	10 (0.5)	-	-	1 (0.1)	6 (0.2)
BW 1	-	-	@	-	4 (0.3)	-	-	-
BW 2	1 (0.1)	-	@	-	-	-	-	-
BW 3	-	-	@	@	-	-	-	-
BW 4	-	-	-	-	-	-	-	-
BW N	-	-	1 @	-	-	@	-	-
Bleached/Unbleached Total	103 (5.6)	124 (5.4)	61 (4.4)	95 (4.7)	103 (6.2)	96 (4.6)	70 (7.6)	119 (4.3)

(Table 5.2 contd..)

Grades	1970-71	1971-72	1972-73	1973-74	1974-75	1975-76	1976-77	1977-78
CS 1	41 (2.2)	54 (2.3)	13 (1.0)	22 (1.1)	13 (9.8)	15 (0.7)	8 (0.9)	11 (0.4)
CS 2	@	-	@	@	@	-	-	@
CS 3	11 (0.6)	3 (0.1)	6 (0.5)	6 (0.3)	4 (0.2)	9 (0.4)	4 (0.4)	5 (0.2)
Seeds Total	52 (2.8)	57 (2.4)	19 (1.5)	29 (1.4)	17 (1.0)	24 (1.1)	12 (1.3)	16 (0.6)
Mixed Varieties Total	4 (0.3)	3 (0.1)	3 (0.3)	1 @	-	-	-	10 (0.3)
Total	1847 (100)	2318 (100)	1328 (100)	2076 (100)	1676 (100)	2103 (100)	909 (100)	2802 (100)

to be continued...

Table 5.2 (contd..)

Grades	1978-79	1979-80	1980-81	1981-82	1982-83	1983-84	1984-85
AGBB	228 (9.7)	200 (7.2)	244 (9.9)	133 (5.6)	126 (11.6)	3 (1.4)	832 (22.3)
AGB	754 (32.4)	898 (32.1)	816 (33.2)	707 (31.8)	353 (32.5)	11 (5.3)	1274 (34.1)
AGS	547 (23.5)	592 (21.2)	734 (29.9)	811 (36.4)	215 (19.8)	39 (18.7)	988 (26.4)
AGS 1	682 (29.3)	840 (30.0)	483 (19.7)	401 (17.9)	278 (25.6)	100 (48.1)	553 (14.8)
AGS 2	11 (0.5)	87 (3.1)	28 (1.2)	2 (0.1)	14 (1.3)	3 (1.4)	12 (0.3)
AGL	6 (0.3)	13 (0.5)	6 (0.2)	3 (0.2)	-	-	-
AGN	13 (0.6)	10 (0.4)	7 (0.3)	6 (0.4)	1 (0.1)	2 (1.0)	6 (0.2)
Alleppey Green Total	2241 (94.3)	2640 (94.5)	2318 (94.4)	2063 (92.4)	987 (90.9)	158 (75.9)	3665 (98.1)
CGBB	-	-	-	-	-	-	-
CGB	1 (0.04)	1 (0.04)	-	-	-	-	-
CG 1	6 (0.3)	1 (0.04)	1 (0.04)	1 (0.1)	1 (0.1)	-	-
CG 2	3 (0.1)	0	-	1 (0.1)	1 (0.1)	0	-
CG 3	6 (0.3)	-	-	2 (0.1)	0	-	-
CG 4	-	-	-	-	-	-	-
CG	-	-	-	-	-	-	-
Coorg Green Total	16 (0.7)	2 (0.08)	1 (0.04)	4 (0.3)	2 (0.2)	0	-
BL 1	0	15 (0.6)	10 (0.4)	18 (0.8)	7 (0.7)	5 (2.4)	17 (0.4)
BL 2	31 (1.3)	71 (2.5)	57 (2.3)	110 (4.9)	36 (3.3)	28 (13.5)	45 (1.2)
BL 3	9 (0.4)	28 (1.0)	54 (2.2)	13 (0.7)	0	-	0
BL N	-	1 (0.04)	-	-	-	-	-
BW 1	-	-	-	-	-	-	-
BW 2	-	-	-	-	-	-	-
BW 3	-	-	-	-	-	-	-
BW 4	-	-	-	-	-	-	-
BW N	-	-	-	-	-	-	-
Bleached/Bleachable Total	48 (2.0)	115 (4.1)	121 (4.9)	141 (6.4)	43 (4.0)	33 (15.9)	62 (1.6)

Table 5.2 (Contd...)

Grades	1978-79	1979-80	1980-81	1981-82	1982-83	1983-84	1984-85
CS 1	13 (0.6)	30 (1.1)	13 (0.5)	20 (0.9)	25 (2.3)	-	1-
CS 2	@ (@)	1 (@)	-	- (-)	9 (0.8)	-	-
CS 3	10 (0.4)	9 (0.3)	3 (0.1)	1 (@)	5 (0.5)	17 (8.2)	11 (0.3)
Seeds Total	23 (1.0)	40 (1.4)	16 (0.6)	21 (0.9)	39 (3.6)	17 (8.2)	11 (0.3)
Mixed Varieties Total	2 (@)	-	2 (0.1)	-	14 (1.3)	-	-
Total	2330 (100)	2797 (100)	2458 (100)	2229 (100)	1085 (100)	208 (100)	3738 (100)

Note: @ : Negligible.

Source: Regional Office of the Directorate of Marketing and Inspection, Ministry of Agriculture, (GOI), Cochin.

In spite of such limitations, the study and analysis of the data given in Tables 5.1, 5.2, Appendix IX, and the research investigations conducted in India and abroad by the Researcher lead to the following conclusions.

1. The clipped varieties of bleachable white cardamoms (BW 1 and BW 3) are not in vogue now, either in the internal or external market.
2. Nonspecifications on moisture and oil content in 33 grades of cardamom (except cardamom powder) have given rise to international trade disputes.
3. Cardamom exporters quote their prices to overseas buyers, based on samples/brands. Agmark grades are not generally used for quoting the prices and for concluding the contracts. Once the business is concluded, the exporters ship the cardamoms fit the quality of the sample and the consignment into an appropriate 'agmark' grade to fulfil the statutory obligations of quality control and pre-shipment inspection.
4. Importers of cardamom in foreign countries are generally not aware of the grading of Indian cardamom and the 'agmark' grades used for the purpose.
5. The efforts taken by the Cardamom Board in popularising 'agmark' grading system in foreign countries are negligible.

6. Cardamom oil and oleoresin are yet to be brought under the purview of 'agmark' grades with necessary specifications.
7. The bulk of the cardamom exported from India consisted of AlleppeyGreen Cardamoms, constituting over 90 per cent of the exports. Among AlleppeyGreen cardamoms, AGB, AGS and AGS 1 grades took the lion's share.
8. The quantity of cardamoms 'agmarked' in India has a direct and close relationship with cardamoms exported from India.
9. Coorg Green varieties of cardamom which have undergone 'agmark' grading are negligible, indicating that Coorg Green cardamoms have only a negligible export market and that internally marketed Coorg cardamoms are not 'agmarked'.
10. Quality control and pre-shipment inspection before export are prevalent only in India.
11. There is scope for reducing the number of grades to less than 10, covering cardamom capsules, powder, oil etc. and quality factors like colour, size, moisture/oil content etc.

CHAPTER VI

PACKAGING, TRANSPORT AND CHANNELS OF DISTRIBUTION

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CHAPTER VI

PACKAGING, TRANSPORT AND CHANNELS OF DISTRIBUTION

It was noted in Chapter V that the market rating of good quality cardamom is based on size, litre weight, colour and aroma. It would perhaps have been more realistic if this gradation is done on the basis of the strength or content of the volatile oil in the cardamom. The outward appearance of cardamom and its colour have, however, been given high value by the majority of the consumers and a premium price is realised for bold capsules of intense and uniform green colour without surface blemishes which occur as a result of the attack by pests like 'thrips'. But, this association of colour with quality is not quite unrealistic. The colour of cardamom is linked to the organoleptic quality of the volatile oil contained in the seeds and the fading of green colour is closely related to the deterioration in the flavour strength of the volatile oil, as explained in Chapter V. The changes in the above quality factors would make the cardamoms less valuable over a period of time. These changes are observed to be influenced significantly by moisture. The total shelf life required for cardamom would be of the order of nine months, from harvest to actual consumption.

The growers of cardamom generally keep the cured cardamom for a period of seven to forty five days. The packaging system followed by the growers in Kerala during this period was discussed in the previous chapter.¹

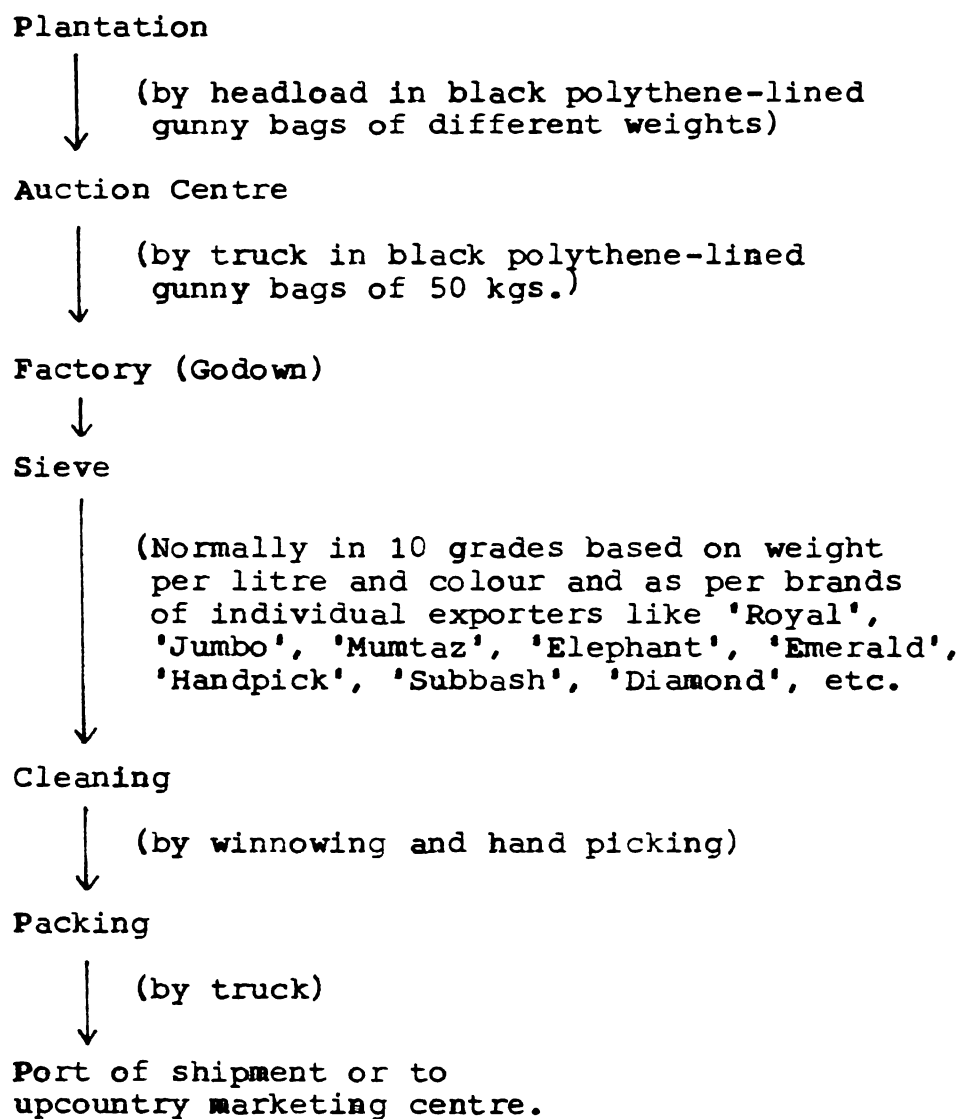
Field studies were conducted on packaging, transport and distribution in Bodinayakanur in Tamilnadu, which is the main commercial centre of cardamom in India. As per the information gathered from the Cardamom Board, there were about 130 exporters of cardamom in India. The top eight exporters accounted for nearly 80 per cent of the cardamom exports effected from the country. Of these eight exporters, five exporters who have their grading, packing and despatching centres situated in Bodinayakanur, account for about 70 per cent of the total exports from the country.² Therefore, a study of their operations would give a fair idea of the packaging and transport practices followed by the industry.

¹See Chapter V

²

1. M/s. V.N. Surulivel Nadar & Brothers, (H.O. Bodinayakanur).
2. M/s. Jeevanlal & Company, (H.O. Bombay).
3. M/s. Mohanlal Kesavlal & Company, (H.O. Bombay).
4. M/s. S.Vallinayagom & Company, (H.O. Bodinayakanur).
5. M/s. Gandhi Sons (H.O. Bombay).

The total process of the movement of cardamom from plantation to packing stage can be summarised as follows:



During the crop season, the inventory is not kept waiting for more than two to four weeks with the

wholesalers and exporters in the procurement centres. Off season stocks are also usually negligible with the planters, traders and exporters because of the high value of the commodity.

Packaging

Different types of packing are adopted for domestic marketing centres and for importing countries. Also, different packing systems are adopted for the Middle East countries, Japan, U.S.S.R. and European countries, with slight variations from exporter to exporter, depending upon the requirement of the importers in the different countries. Until 1984, the units of packing were 10 kgs., 25 kgs., and 50 kgs., for different markets. Packaging was done in gunny bags and wooden cases. The black polythene-lined gunny bags were made into 'moodas' by stitching them in such a way as to make look like drum like structures. These were then covered with stencil gunny and tied with coir ropes in a decorative manner. The inside containers in 'mooda' and wooden containers would be 300 gauge black polythene bags. While 'moodas' of 50 kgs. capacity are used for internal despatches, 'mooda' packings of different weights are mostly used for export to the Middle East countries. Wooden packings are commonly used for export to U.S.S.R, Japan and the European countries. In earlier days, buyers in the Middle East countries preferred to have

'jottas'. Four 'moodas' or wooden cases were made into one 'jotta' by using steel straps. This was done to facilitate transport by camels. In earlier days, the wooden and mooda packings were also covered outside with stencil gunny and coated with tar as a measure of protection from light and pilferage.

With effect from 13th August 1984, Government of India introduced a cash compensatory support of 10 per cent over the f.o.b. price of cardamom in value added consumer packs of two kgs. and less, to make Indian cardamom more competitive in the world market. To take advantage of this export incentive, almost all the exporters of cardamom are now exporting in packings of two kgs. and less. But these unattractive and cheap looking packs are again packed in conventional moodas or wooden cases, and exported. Many importers and wholesalers in the Middle East, however, tend to tear off these newly introduced unattractive consumer packs and sell the cardamom in bulk as was done earlier. They find this style more advantageous than ordering in bulk packs, considering the variation of 10 per cent in the price quotations from India. In U.K., cardamoms which do not go into the curry powder and flavour industries are repacked in consumer packs of the importers and wholesalers for sales through retail outlets.

Packing for export to the Middle East is done in the following manner. The desired grade of cardamom is filled manually in printed 300 gauge polythene bags of one kg. or two kg. capacity and heat-sealed, using hot iron bar. Five or ten of such one kg. or two kgs. packs are then placed in a bigger black polythene bag and, then, in a suitably sized gunny bag. The polythene bag is twist tied, and the gunny bag is stiched in such a manner that the corners are brought to the centre, such that a fairly uniform round shape is obtained. Four such intermediate packs are again placed in a pre-stencilled gunny bag with open end stiches. The corners are suitably pushed inwards while stiching, so as to give them a drum like shape. Additional markings as required are done by stencilling. Stencial ink is also applied along the stitched lines. The net weight of the pack would be 40 kgs. and the gross weight would be about 43 kgs. This system is referred to as 'mooda' packing.

In some cases of shipments to Saudi Arabia and Kuwait, wooden bulk packings are also used as detailed below.

In respect of exports to U.S.S.R., Japan and the European countries, wooden containers are used for

bulk packings of net 50 kg. weight. Packets of one kg. or two kgs. are first made as described earlier. The wooden containers are made from 100 mm thick planks and are reinforced internally with vertical battens, one each at all vertical edges or corners and one each along the middle of the longer panel. The container is lined internally with kraft paper and black polythene liner. These paper liners are folded inwards and closed. The lid of the case is fixed in position and the box is provided with metal straps in a crossed manner. The wooden container is again wrapped all over, with three pieces of gunny and stitched. It is then provided with necessary markings by stencilling.

On an average, the unit packing cost of cardamom for export worked out to Rs.2.50 per kg. including labour cost in January 1985, both in the cases of 'mooda' and wooden packs.³

From the above, it can be seen that the methods of packing adopted by the cardamom industry, both for internal marketing and export are yet to conform to modern standards of packing.

Transport

The export consignments to the Middle East are normally moved from Bodinayakanur to Bombay by road

³Field studies by the Researcher.

and from there by ship. In the case of consignments to other countries like Japan, U.S.S.R, U.K., Sweden, F.R.G., etc. they are generally moved from Bodinayakanur to Cochin by road and then by ship. In most of the cases, containerised transportation is adopted, but since the export consignments are mainly sent through trucks to ports of shipment, often the consignments are sent as break bulk cargo. However, whenever there is urgency of demand by the importer, consignments are sent by air through Air India flights from Bombay and Trivandrum. But generally, export is effected by sea as container load. For overseas shipments, 20 ft. containers are normally used either in part or in full. Whenever the 'mooda' packs are used, the maximum load per container is 10 M.T. If wooden cases are used, the maximum load is 7 M.T. per 20 ft. container. The break bulk cargo system is avoided as far as possible.

In the case of truck transportation to Bombay, consignments per truck is of the order of 10 M.T. In the case of consignments to Cochin, 5 M.T. per truck is the average. In January 1985, the truck freight from Bodinayakanur to Bombay was Rs.0.65 to 0.70 per kg. and to Cochin it was Rs.0.55 to 0.60 per kg. for truck loads of 10 M.T. and 5 M.T. respectively.

The time taken for transport by truck from Bodinayakanur to Bombay is roughly three to four days and that to Cochin, it is 8 to 10 hours. The duration of sea voyage from Bombay and Cochin ports to major consuming countries is 15 to 30 days, depending upon the place and distance. The time taken by air from Bombay and Trivandrum to Middle East towns is only four to six hours. Air consignments are usually sent only to the Middle East countries.

In the case of large consignments, normally an escort is provided while moving them from Bodinayakanur to Bombay or Cochin. Guards are employed for safety of cargo at the port or wharf. The bulk packs are fumigated with bromide fumes at the ports of shipments.

The freight rates to different destinations in January 1985 were as follows:

Ocean freight rates

From	Destination	Freight per kg.
Bombay	Middle East	Rs.2.00
"	Japan	Rs.2.59
"	U.S.S.R.	Rs.1.68
"	Europe	Rs.3.41

Ocean freight rates

From	Destination	Freight per kg
Cochin	Middle East	Rs.2.00
"	Japan	Rs.2.10
"	U.S.S.R.	Rs.1.68
"	Europe	Rs.3.41

Mandatory Air freight rates

(Under Item 00067, food stuffs/spices/
beverages/cardamom etc. are exported
as 'Spices' in Air India flights)

From	Destination	Rate
Bombay/Delhi	Jeddah	Rs.10.00 (gross Rs.10 to Rs.14: minimum 250 kgs.)
Bombay/Delhi	Dubai/Muscat/ Abudhabi/Kuwait/ Bagdad/Bahrain/ Dahran/Doha/Riyadh	Rs.9.20 (gross Rs.10 to Rs.14: minimum 250 kgs.)
Trivandrum	Abudhabi/Dubai/ Bahrain/Doha/ Riyadh	Rs.9.80 (gross Rs.10 to Rs.14: minimum 250 kgs.)

In 1984-85, the Indian Institute of Packaging, Bombay undertook a study for improving the packaging system of cardamom for export. This was done at the instance of the Cardamom Board. The Institute's study was aimed at developing a better unit pack or consumer pack along with bulk pack, which could retain the quality of cardamom, viz., its colour, moisture or oil

content, aroma, etc., without deterioration, atleast for a period of nine months. Reduction of cost in the packing material, handling charges, transport, containerization, etc., was another objective of this study. It was also realised that packings should have the required strength for safe transport, within India and abroad.

After detailed studies for two years, the Institute recommended units of consumer packs with capacities of 500 gms., one kg., and two kgs. made out of 12 micron polyester or 125 gms. LDPE material. In the case of bulk packs, which could contain these unit packs, it was recommended to have corrugated fibre board cases with net weight capacities of 20 kg., 24 kg., 32 kg., 36 kg., and 40 kg. The Report on packaging of cardamom, prepared by the Institute says,

" the unit/consumer pack of the polyester/LDPE pouch offers the product the required minimum shelf life of nine months and the quality of the product is maintained in respect of moisture level, aroma retention and colour retention. Besides offering protection to the product against factors like moisture and oxygen, the polyester/LDPE also offers see-through properties, as it is transparent in nature. This is important, as the consumer would like to see the size and green colour of the capsule before

purchase. Besides, the advantages mentioned above, the material also has good printability and can take sandwich and reverse printing that enhances the graphic appeal".⁴

The report further points out:

"The bulk packaging material, viz., the corrugated fibre board box also offers advantages as compared to 'mooda' pack in certain respects. The practice of packaging goods in CFB boxes is internationally accepted and the regular shape and size of the packs contribute to easy handling and modern system. This, in turn, gives a better utilization of space in an intermodal container and can be stowed systematically".⁵

The Indian Institute of Packaging further stated in its report that the material costs of unit packs and bulk packs are slightly higher than those used at present in the 'mooda' and wooden packs. However, those higher costs are nullified when the total cost of packaging materials, labour, transport, etc. are taken together. The recommended new packing systems thus emerge as quality and cost effective ones, compared to existing systems of packing.⁶

⁴Indian Institute of Packaging, Report on packaging of cardamom, (Bombay, 1985) p.165.

⁵Ibid., p.166.

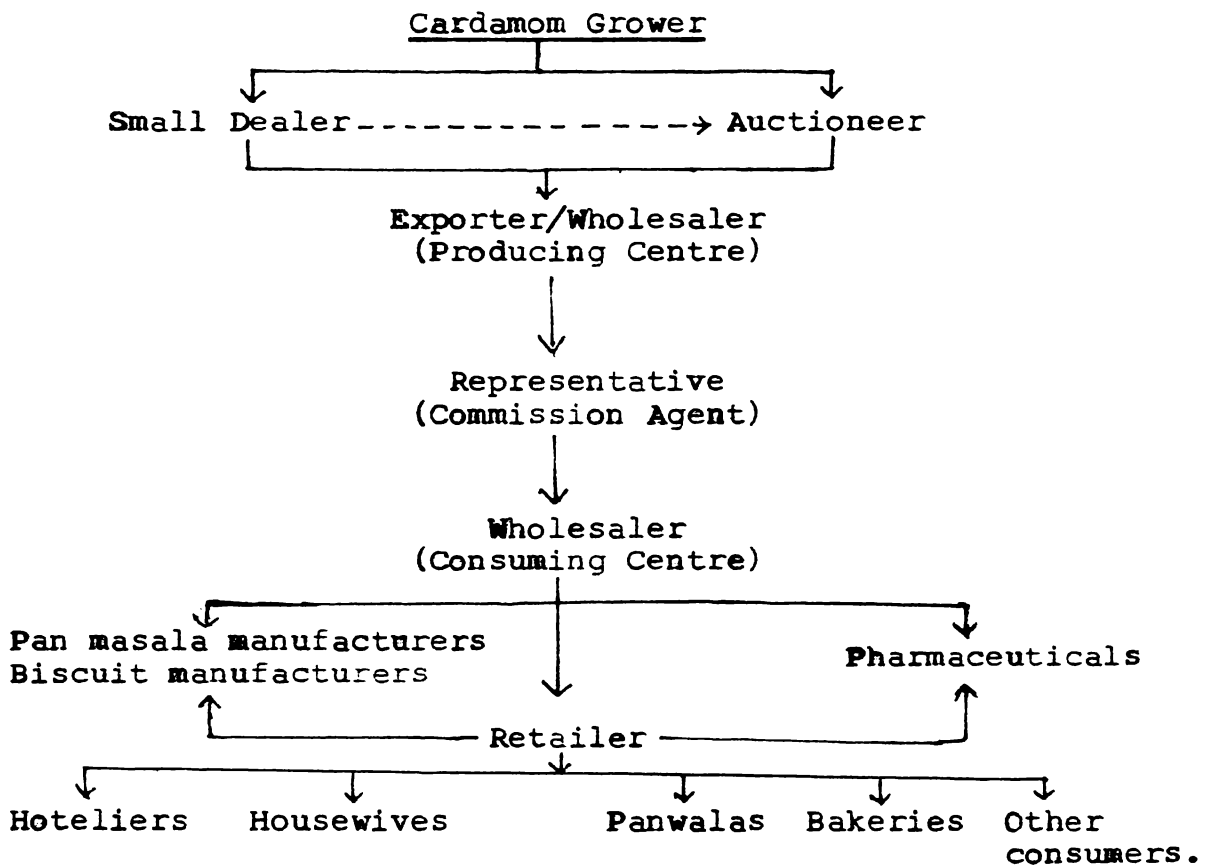
⁶Ibid., p.170

Field studies undertaken by the researcher on packaging have indicated that, whereas the exporters are aware that changes in packing are taking place in Guatemala and other places of the world, they are hesitant to switch over to the new packaging systems, and the conventional system of 'mooda' packing is still being continued. Their main reasoning is that the traditional 'mooda' packing is age old and has helped to establish the stamp of superior quality of the Indian cardamom in the foreign market, especially in the core market of the Middle East. Enquiries by the researcher definitely proved that this argument is echoed by the importers also in the Middle East.

Channels of distribution

As regards sources of supply, packaging, mode of transport, peak season of consumption, etc. a great degree of similarity is observed in the individual markets all over India. Cardamom moves from producers to despatching centres, which are the first wholesale centres, either through cardamom auctions or through the small dealers who collect cardamom from the small producers. The main despatching centres for Alleppey Green cardamoms are Bodinayakanur and Virudhnagar in Tamilnadu and, Cochin and Bombay. The main despatching centres of Coorg Green and of the bleached/bleachable

white cardamoms are Mangalore, Saklespur, Mercara and Sirsi in Karnataka and, Bombay. Cardamom is then made available to the representatives or to the wholesalers in upcountry marketing centres. From these second level wholesalers, it is channelled to the retailers who sell it to the panwalas, the housewives etc. The large users like the confectioners, panmasala manufacturers, tobacco paste producers, etc. get their supply from the second level wholesalers directly. The following chart indicates the flow of cardamom from the producer to the actual users or consumers in India.



From the above chart, it is quite clear that there are five intermediaries between the grower and the actual user or consumer. In the case of the sales or distribution of branded, cardamom flavoured, manufactured items like 'True' biscuits, 'Complan', 'Horlicks', etc., other intermediaries also come in. Cardamom is also subjected to a number of taxes and levies. It also incurs other expenses at different stages, like state sales taxes, central sales tax, octroi, loading and unloading charges, packing and repacking expenses, transportation costs, etc., in addition to the profit margins of at least five major intermediaries. This is the reason why, when the cardamom producer gets only Rs.150/- per kilogram, the actual user has to pay Rs.450/- to Rs.500/- per kilogram in terminal markets in upcountry stations. The difference in price is largely accounted for by these expenses as well as the profit margins of the intermediaries.

Cardamom is transported from the producing or procurement centres to consuming centres in India by road, always under insurance cover. Rail transport is not usually utilized by the traders, primarily because of the delay, and secondarily because of the fear of pilferage. Moreover, cardamom being a low volume

high price item, the cost of lorry transport is not high, compared to railway transport charges. Moreover, the season for peak despatch of cardamom to upcountry markets from south India is October to December, as most of the festivals like Deepavali, Durga Puja, Christmas, etc. fall during this period. The peak period of despatch is, thus, not in the rainy season, which also makes road transport more handy and convenient. Consignments by air are not in vogue in the internal transportation of cardamom.

As regards exports of cardamom, as stated earlier, the bulk of the commodity goes by sea to foreign countries. Port-wise exports of cardamom from India from 1970-71 to 1984-85 are given in Table 6.1.

From Table 6.1 it is clear that on an average 68 per cent of cardamom is shipped through Bombay port, 28 per cent through Cochin and the rest through Mangalore, Tuticorin and Madras. Calcutta port and dry ports like Delhi, Hyderabad and Bangalore do not figure in the export transportation of cardamom. As mentioned earlier, Bodinayakanur in Tamilnadu is the trade capital of cardamom in the country. Though there are many exporters of cardamom with head office in Bombay, all of them have procuring and despatching offices in

Table 6.1

Port-wise export of Cardamom: 1970-71 to 1984-85

(Quantity in M.T., Value in Rupees/Crores; Figures in brackets are percentages)

Year	Bombay		Cochin		Mangalore		Tuticorin		Madras		Others		Total	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
1970-71	1020(64)	6.38	544 (34)	3.67	21 (2)	0.12	4 (2)	0.01	-	-	-	-	1569 (100)	10.19
1971-72	1577(72)	6.07	596 (27)	2.06	13 (1)	0.05	9 (2)	0.02	6 (2)	0.04	-	-	2201 (100)	8.24
1972-73	1051(71)	5.26	409 (28)	1.96	16 (1)	0.06	6 (2)	0.01	2 (2)	0.02	-	-	1482 (100)	7.29
1973-74	1289(76)	8.26	408 (24)	2.40	4 (2)	0.03	5 (2)	0.01	5 (2)	0.02	-	-	1711 (100)	10.72
1974-75	821(53)	7.07	636 (41)	5.05	25 (2)	0.23	1 (2)	0.01	67 (4)	0.43	-	-	1550 (100)	12.78
1975-76	1450(75)	14.98	430 (23)	4.03	16 (1)	0.13	11 (1)	0.04	3 (2)	0.04	-	-	1910 (100)	19.23
1976-77	605(70)	9.80	243 (26)	3.67	29 (3)	0.43	10 (1)	0.09	6 (2)	0.03	-	-	893 (100)	14.03
1977-78	2473(89)	44.03	237 (9)	3.76	43 (2)	0.51	4 (2)	0.02	6 (2)	0.11	-	-	2763 (100)	48.44
1978-79	2476(86)	52.07	364 (13)	5.80	24 (1)	0.33	2 (2)	0.02	10 (2)	0.14	-	-	2876 (100)	58.35
1979-80	2107(80)	40.17	438 (17)	7.11	77 (3)	1.09	-	-	14 (2)	0.20	-	-	2636 (100)	48.56
1980-81	1786(76)	27.41	523 (22)	7.01	16 (1)	0.14	20 (1)	0.19	2 (2)	0.02	-	-	2345 (100)	34.75
1981-82	1587(68)	21.99	657 (28)	7.32	95 (4)	0.82	1 (2)	0.05	2 (2)	0.02	-	-	2325 (100)	30.20
1982-83	608(59)	10.32	391 (38)	5.44	33 (3)	0.61	-	-	2 (2)	0.02	-	-	1032 (100)	16.37
1983-84	64(25)	1.42	165 (64)	3.33	29 (11)	0.69	-	-	2 (2)	0.02	-	-	258 (100)	5.44
1984-85	1425(60)	37.90	583 (24)	16.39	67 (3)	1.96	-	-	142 (6)	4.74	166(7)	3.80	2383 (100)	64.81
Average	(68)		(28)		(3)		(2)		(2)		(2)		(100)	

Note: @ : Negligible.

Source : 1.D.G.C. I & S, Calcutta.
2.Cardamom Board, Cochin.

Bodinayakanur. Cardamoms meant for export are graded, agmarked and packed in Bodinayakanur and sent to Bombay, Cochin, Madras and Trivandrum ports/air ports ready for export. Many exporters based in Bodinayakanur do not even have warehousing facilities in these places. The predominance of Bombay in the shipping of cardamom is mainly due to the better availability of cargo space from Bombay to the Middle East ports. However, cargo to Europe, U.S.S.R and Japan usually originate from Cochin, Tuticorin and Madras mainly due to the associated trade in pepper, curry powder and other spices, and the availability of shipping space and voyages from these places.

Of late, due to stiff competition from Guatemala and the late availability of Guatemalan crop in the market, Indian exporters are resorting to air freighting of cardamom so as to take the commodity as early as possible to the core markets of the Middle East. The low volume, high price nature of the commodity, the need for preservation of quality in transportation, the relatively easy availability of cargo space in the passenger flights of Air India from Bombay and Trivandrum to the Middle East destinations, the mandatory rates of air freight for cardamom, etc. are the major contributing factors for increased exports by air to the Middle East countries.

Details of air exports of cardamom from 1982-83 to 1984-85 are given in Table 6.2. It can be noted from the table that during 1982-83 only 8 per cent of the total cardamom exported from India went by air from Bombay, whereas in 1983-84 air exports were negligible. In 1984-85, the share of air exports showed a phenomenal increase, accounting for 33 per cent of total exports. Bombay alone accounted for over 27 per cent and Trivandrum over 6 per cent of the total exports. The reasons for this phenomenon were explained earlier.

Intermediaries of cardamom trade abroad, including those in Middle East countries, are minimum compared to those in India. The cardamom importers mostly act as the wholesalers, and the commodity directly moves from them to the retailers, departmental stores and manufacturers of food products. In some cases, the chain departmental stores and manufacturers of food products directly import cardamom from India and make their own consumer packs for sales to actual users and consumers. The channel of distribution of exported cardamom can be summarised

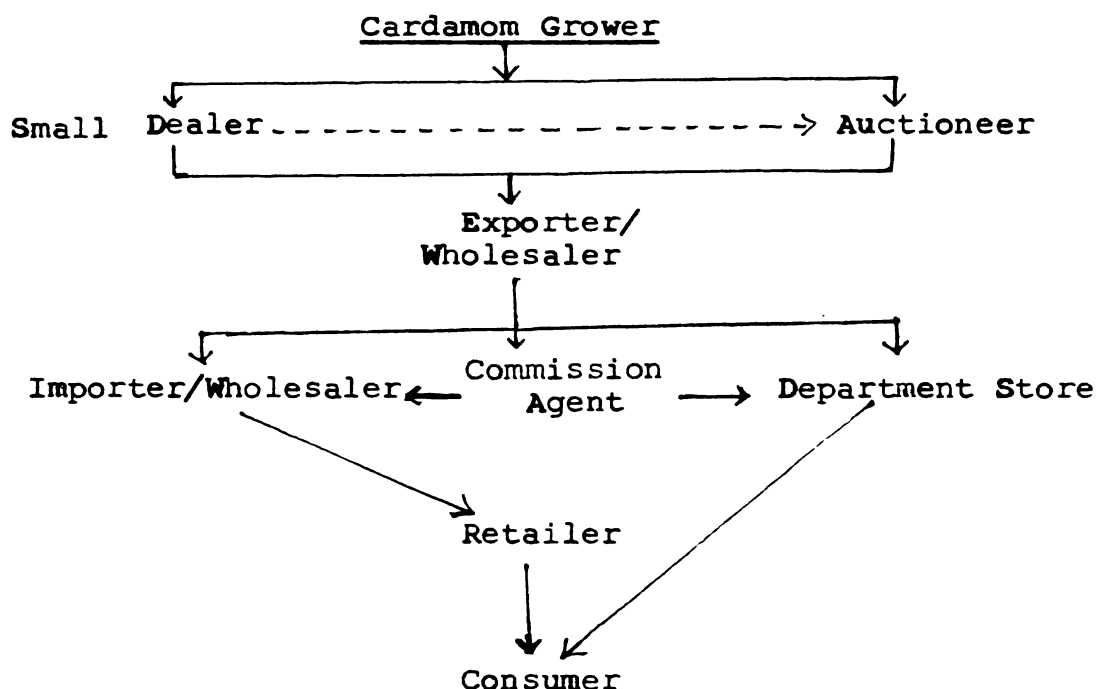
Table 6.2

Export of Cardamom by Air from India:
1982-83 to 1984-85

<u>Airport</u>	<u>Quantity (Kgs.)</u>	<u>Percentage in total quantity exported from India.</u>	<u>Value (Rupees)</u>	<u>Unit price (Rs./kg.)</u>
<u>1982-83</u>				
Bombay	82,601	8.00	1,14,51,110	174.95
Trivandrum	-	-	-	-
Others	-	-	-	-
Total	82,601	8.00	1,14,51,110	174.95
<u>1983-84</u>				
Bombay	115	Negli- gible	30,944	269.08
Trivandrum	-	-	-	-
Others	-	-	-	-
Total	115	-	30,944	269.08
<u>1984-85</u>				
Bombay	6,53,474	27.42	18,27,34,539	279.64
Trivandrum	1,44,500	6.06	3,34,63,600	231.58
Others	-	-	-	-
Total	7,97,974	33.48	21,61,98,139	270.93

Source: Cardamom Board, Cochin.

as follows:



Commission agents in between exporters and importers in India and abroad are also in existence, but not on a large scale. The majority of the commission agents are buying agents for importers in foreign countries. These foreign agents generally get 0.5 to two per cent commission on the C & F value of the commodity imported. The maximum agency commission allowed for cardamom trade in foreign exchange is three per cent, as per the existing instructions (January, 1985) of the Reserve Bank of India.

Field studies, investigations and analysis of available data reveal that attractive consumer packs of cardamom have not been either developed or employed for

retail sales of cardamom in the major markets of Middle East countries or in the domestic market of India. Certain department stores in European countries have developed attractive consumer packs for cardamom in line with consumer packs of other spices. But this has got a limited scope for expansion in those countries because of the usage pattern of cardamom there viz. that of using the commodity as a flavouring agent in manufactured food products and beverages. Indian curry powder is widely available in European countries in consumer packs, but the percentage of cardamom going into the curry powder industry is negligible. There is immense scope for introducing attractive consumer packs of cardamom, both in the Middle East and in India. This can be taken up by the exporters and wholesalers at the procurement centres so that they can ensure higher margins of profit by cutting down the number of intermediaries in the trade, as has been done in the case of branded products of coffee and tea in India and abroad.

Field investigations have revealed that leaders of consumer products like 'Brooke Bond', 'Lipton', 'Dunken', 'Nestle', etc. who are successfully handling tea, coffee, etc. in consumer packs, have not come to the cardamom trade or export so far. In the discussions held by the researcher

with senior managers of these reputed companies, it was pointed out that violent fluctuations of price in cardamom from season to season and year to year and the deterioration in quality over a short period of time were the factors which prevented their entry into cardamom trade. They expressed confidence about protecting the quality factor, but not of the price factor. This points out to the fact that stabilization of the price of cardamom will emerge as a matter of great importance in the marketing of cardamom in future.

As has been stated elsewhere, the Guatemalan cardamom comes to the world market only after December because of the late cropping pattern prevalent there. The distance from Guatemala to the Middle East countries is almost double the distance from India. These two advantages, alongwith the age old reputation of Indian cardamom could be better encashed in the Middle East by resorting to the air freighting of the maximum quantity before December to Middle East in attractive consumer packs.

A factor of great importance favouring this is the fact that the peak consumption period in the Middle East is October to December, coinciding with winter and Ramzan periods. Even if Guatemala can come with good

quality cardamom at a cheaper price from January-February onwards, the peak consumption period in Middle East would be over by that time. The storing of Guatemalan cardamom for consumption in the ensuing October-December consumption season, can be ruled out because of storage costs, and as there would be deterioration in quality in storage for such a long period. From Table 6.2 it can be observed that India adopted the above marketing strategy during the year 1984-85, by exporting 33 per cent of her total exports by air to Middle East countries during that period. The Middle East buyers are also generally prepared to pay a premium price of Rs.25/ to Rs.50/- per kg. for Indian cardamom above the price of Guatemalan cardamom. At the same time, it is important to note that domestic consumption of cardamom in Guatemala is almost nil. Therefore, it is a question of the life and death for the cardamom industry in Guatemala to be able to sell the produce anywhere in the world, at whatever price it might fetch, Guatemala can also afford to undersell Indian cardamom, as their productivity is more than five times than that of India.

The real problem faced by Indian cardamom is that of the unsold stock of Guatemalan cardamom dumped in the Middle East market during the off season. This

depresses the price of fresh Indian cardamom during the October-December period. To get out of this situation, an understanding between the producing countries, especially between India and Guatemala, is necessary as was discussed earlier in Chapter III.

CHAPTER VII

DOMESTIC AND EXPORT PRICES

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CHAPTER VII

DOMESTIC AND EXPORT PRICES

Fairly reliable data on the auction and export prices of Indian cardamom are available from the year 1970-71 onwards. The system of auctioning for primary sale of the commodity and the licensing of auctioneers and exporters of cardamom by the Cardamom Board have been mostly responsible for this availability of data. On the basis of such available data, efforts are made in the following pages to arrive at certain general conclusions and broad trends regarding cardamom prices. Analysis of price fluctuations over a period of time is used to determine the trends over a period of time or the variations during the different seasons of the year.

Auction Sales and Prices

The monthly data on domestic sales of cardamom in the auctions of Kerala, Karnataka and Tamilnadu from 1970-71 to 1984-85 are given in Tables 7.1, 7.2 and 7.3. The indices of seasonal variations in the arrivals of cardamom given in these tables clearly indicate that the sale of cardamom was highest in the month of November in Kerala.¹

¹Index Number of seasonal variations are calculated as follows: The data is first arranged season-wise for each year. The

Table 7.1

Month-wise auction sales of cardamom in Kerala: 1970-71 to 1984-85
(Crop year, Quantity in M.T.)

Crop-year	August	Sept- ember	October	November	December	January	February	March	April	May	June	July
1970-71	N.A	N.A	N.A	N.A	N.A	N.A	N.A	N.A	N.A	N.A	N.A	N.A.
1971-72	74	344	418	358	40	330	249	189	91	21	-	-
1972-73	3	76	213	262	268	155	96	87	26	157	-	-
1973-74	26	7	269	79	206	188	151	136	34	-	-	-
1974-75	21	113	340	397	84	183	243	89	-	-	-	-
1975-76	10	49	290	387	366	191	141	98	1	-	-	-
1976-77	6	77	195	257	131	57	-	10	10	42	16	-
1977-78	69	358	607	475	378	103	48	232	31	-	-	-
1978-79	54	307	622	483	358	336	129	124	3	-	-	-
1979-80	36	178	496	286	457	346	140	120	130	36	-	-
1980-81	9	200	498	591	431	221	202	137	2	2	-	-
1981-82	14	177	480	678	460	221	110	43	3	-	-	-
1982-83	-	120	287	371	187	122	78	43	-	-	-	-
1983-84	-	40	183	163	95	8	35	57	23	-	-	-
1984-85	-	17	120	276	384	323	140	262	78	71	3	1
Total	322	2063	5018	5063	3845	2784	1762	1627	432	329	20	1
Average	23.00	147.35	358.43	361.64	274.64	198.86	125.86	116.21	30.86	23.50	1.43	0.07
Index No. of seasonal variation	16.61	106.40	258.81	261.13	198.31	143.51	90.88	83.91	22.28	16.97	1.03	0.07

Note: N.A. : Not available; ● : Negligible
Source: Cardamom Board, Cochin.

Table 7.2
Month-wise auction sales of cardamom in Karnataka, 1970-71 to 1984-85
 (Crop year; Quantity in M.T.)

Crop year	August	Sept- ember	October	November	December	January	February	March	April	May	June	July
1970-71	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
1971-72	27	38	47	56	94	37	50	67	54	36	37	5
1972-73	3	37	66	125	99	58	35	19	9	22	8	8
1973-74	5	20	61	56	47	104	65	61	26	25	18	10
1974-75	3	10	48	66	62	26	20	22	21	26	27	10
1975-76	14	25	75	83	70	86	48	41	45	7	1	1
1976-77	2	22	89	80	64	21	20	25	24	9	6	17
1977-78	26	59	81	87	125	59	26	36	25	13	4	●
1978-79	62	362	761	619	449	454	200	223	104	61	35	23
1979-80	48	234	596	392	573	477	215	202	200	100	48	38
1980-81	21	68	116	107	137	158	65	66	45	68	45	24
1981-82	14	69	121	170	154	118	53	53	25	20	6	11
1982-83	10	47	111	120	165	81	54	57	52	26	14	3
1983-84	8	17	39	58	44	35	16	15	21	24	23	15
1984-85	31	59	73	55	54	69	27	26	39	45	18	36
Total	274	1067	2284	2074	2137	1783	894	913	690	482	290	201
Average	19.57	76.21	163.14	148.14	152.64	127.35	63.86	65.21	49.29	34.43	20.71	14.35
Index No. of seasonal variation	25.12	97.82	209.40	190.14	195.92	163.46	81.97	83.70	63.27	44.19	26.58	18.42

Note: N.A. : Not available.
 Source : Cardamom Board, Cochin.

Table 7.3.

Month-wise auction sales of Cardamom in Tamilnadu: 1970-71 to 1984-85

(Crop year; Quantity in M.T.)

Crop Year	August	September	October	November	December	January	February	March	April	May	June	July
1970-71	N.A	N.A.	N.A	N.A	N.A	N.A	N.A	N.A	N.A	N.A	N.A	N.A
1971-72	11	14	29	34	35	64	37	32	46	24	20	16
1972-73	7	11	18	18	30	18	15	16	25	30	17	11
1973-74	5	14	15	13	22	17	14	10	13	6	3	2
1974-75	3	6	16	17	15	11	11	14	1	-	-	-
1975-76	55	10	16	18	17	24	19	14	12	8	1	1
1976-77	3	5	13	18	16	7	3	12	15	11	6	4
1977-78	5	15	21	18	21	18	13	12	14	21	3	4
1978-79	5	12	22	23	28	18	19	21	28	21	15	4
1979-80	4	13	13	16	49	37	39	36	31	24	6	3
1980-81	2	11	15	20	23	23	15	13	9	8	3	2
1981-82	3	9	13	21	17	20	8	9	9	5	2	1
1982-83	2	7	13	12	10	10	6	3	5	1	2	1
1983-84	2	1	4	6	3	3	7	6	10	2	1	-
1984-85	1	3	6	10	13	10	8	15	12	9	3	3
Total	58	131	214	244	302	280	214	213	230	170	82	52
Average	4.14	9.35	15.29	17.43	21.57	20.00	15.29	15.21	16.42	12.14	5.86	3.71
Index No. of seasonal variation	31.77	7.76	117.34	133.77	165.54	153.49	117.34	116.73	126.02	93.17	44.97	28.47

Note: N.A. : Not available.
Source: Cardamom Board, Cochin.

It was similarly highest in October in Karnataka and in December in Tamilnadu. In Kerala, the November sale was higher by 161.13 per cent than the annual average. In Karnataka, the peak sale in October was 109.40 per cent higher, and in Tamilnadu the December sale was 65.54 per cent higher than the annual averages. In Kerala, the two peak months were October and November, the indices of seasonal variations being 258.81 and 261.13 respectively. In Karnataka, the two peak months were October and December, the seasonal indices being 209.40 and 195.92 respectively. In Tamilnadu, the two peak months were December and January, with indices of seasonal variations at 165.54 and 153.49 respectively.

From Tables 7.1 and 7.2 it can also be noticed that in all the three states the peak arrivals and sales were during the four months of October, November, December and January. Further, in Kerala, which accounts for the largest volume of production of cardamom in the country, auction sales were extremely low from the month of April to August. In Karnataka, and Tamilnadu, sales were low, but evenly distributed during the same period.

average is calculated for each season, and then the average of averages is taken. The index numbers of seasonal variations are calculated using the formula -

$$\frac{\text{Average of any season} \times 100}{\text{Average of Averages}}$$

It is against this background that the seasonal behaviour of auction or domestic prices in the States of Kerala, Karnataka and Tamilnadu is to be examined. The movement of auction prices is given in Tables 7.4, 7.5 and 7.6. From these Tables it can be seen that in Kerala, the domestic price of cardamom was 33 to 43 per cent higher in the months of October to January, the months in which the market arrivals or the sales were heavy. But, in Karnataka, the seasonal fluctuations in price were not of the same magnitude as were found in Kerala. In Karnataka, the index of seasonability of price was highest in the month of January (index number 109.38). In Tamilnadu, as in the case of Karnataka, there were not much seasonal variations in prices. The index number of seasonal variations was highest in January (115.95) and lowest in July (78.00). From Table 7.4 it can be seen that the index numbers of seasonal variations in the auction prices of cardamom in Kerala exhibited very wide fluctuations, ranging from 138.75 in December to 9.82 in July. In Karnataka and Tamilnadu, the fluctuations in prices were not of the same order. In other words, the market arrivals and prices were more uniformly distributed in Karnataka and Tamilnadu than in Kerala. Consequently, the magnitude of the fluctuations in arrivals and prices were much higher in Kerala than that in Karnataka and Tamilnadu.

Table 7.4.

Month-wise weighted average prices of cardamom at auctions in Kerala:
1970-71 to 1984-85

(Crop year; Unit prices in Rs./kg.)

Crop year	August	September	October	November	December	January	February	March	April	May	June	July
1970-71	77.89	68.32	58.14	50.34	39.24	44.64	42.07	40.02	40.41	34.53	33.22	-
1971-72	34.99	38.85	32.71	25.55	27.35	27.64	25.28	24.38	34.23	39.04	-	-
1972-73	39.86	43.47	43.33	55.82	67.38	61.57	56.16	53.04	48.77	50.85	-	-
1973-74	51.68	55.58	52.07	54.11	58.08	60.05	66.94	74.31	84.28	-	-	-
1974-75	75.81	70.24	71.10	77.27	78.04	78.97	85.46	77.49	-	-	-	-
1975-76	72.24	79.23	87.04	87.80	90.05	94.63	93.96	91.47	94.88	111.27	-	-
1976-77	131.77	130.96	154.78	183.42	177.10	184.38	-	138.26	125.11	115.65	131.26	-
1977-78	132.39	127.66	139.75	147.86	156.23	145.08	124.79	144.60	147.39	-	-	-
1978-79	161.94	187.97	193.36	179.52	175.33	171.17	152.12	142.30	137.98	-	-	-
1979-80	155.69	169.29	170.09	143.00	126.94	137.65	120.11	105.29	118.61	123.40	-	-
1980-81	100.83	107.94	108.77	114.91	109.97	106.98	98.94	93.53	95.84	87.88	-	-
1981-82	97.30	117.44	126.09	121.69	114.37	127.41	123.67	125.42	125.21	N.A.	128.97	N.A.
1982-83	-	143.44	144.78	149.95	163.61	191.93	184.67	194.98	-	-	-	-
1983-84	-	25.84	312.83	428.09	463.45	465.74	443.16	358.78	351.63	-	-	-
1984-85	-	258.68	267.89	226.27	207.85	209.21	185.61	164.67	163.44	152.93	129.71	145.55
Total	1132.39	1624.89	1962.73	2046.51	2055.07	2107.08	1805.94	1828.54	1567.68	715.55	423.16	145.55
Average	75.49	123.66	130.85	136.43	137.00	140.47	128.99	121.90	104.51	47.70	28.21	9.70
Index No. of seasonal variation	76.45	125.24	132.52	138.17	138.75	142.26	130.64	123.46	105.84	48.31	28.57	9.82

Note: N.A. : Not available.
Source: Cardamom Board, Cochin.

Table 7.5
Month-wise weighted average prices of cardamom at auctions in Karnataka: 1970-71 to 1984-85
 (Crop year; Unit prices in Rs./kg.)

Crop Year	August	September	October	November	December	January	February	March	April	May	June	July
1970-71	30.16	54.13	51.65	46.40	41.73	40.72	33.34	33.38	29.23	29.73	30.44	32.13
1971-72	22.05	29.24	29.27	24.72	26.11	30.11	26.44	23.63	25.99	24.98	22.12	26.14
1972-73	44.88	29.64	30.21	33.38	45.04	42.14	40.60	44.15	43.97	43.76	43.97	-
1973-74	75.28	46.34	57.48	54.79	53.08	57.19	58.22	65.42	70.14	71.05	80.43	80.15
1974-75	75.28	71.74	66.01	72.78	81.29	80.33	77.65	75.06	79.95	75.19	75.53	67.60
1975-76	68.65	75.67	73.18	74.94	80.22	80.13	76.22	80.02	90.85	104.73	106.17	106.21
1976-77	147.88	127.87	140.81	157.21	154.39	158.04	145.03	146.09	135.78	136.84	112.48	108.66
1977-78	99.26	97.98	91.01	94.27	109.58	115.88	108.73	116.18	123.91	127.79	129.60	135.41
1978-79	148.15	149.15	144.19	137.26	120.68	130.04	123.43	126.70	134.62	131.32	135.81	143.11
1979-80	136.11	145.12	140.80	120.71	113.21	122.36	110.45	112.16	114.21	103.89	95.88	93.26
1980-81	92.47	84.04	77.48	78.22	72.61	76.70	77.61	74.30	79.91	84.49	91.27	89.42
1981-82	85.06	92.48	92.08	94.22	94.85	119.55	115.65	135.20	133.77	135.63	153.00	151.79
1982-83	147.01	141.58	139.75	138.69	169.93	172.61	181.09	186.91	196.33	245.03	275.72	274.64
1983-84	269.45	266.74	303.07	380.12	430.91	471.55	429.31	397.39	367.34	281.79	259.70	199.55
1984-85	221.12	226.36	245.33	209.72	204.33	207.76	183.04	185.84	185.09	187.95	144.99	125.27
Total	1662.81	1598.08	1682.22	1717.43	1789.96	1905.11	1785.81	1802.43	1811.09	1754.17	1757.11	1633.34
Average	110.85	106.54	112.15	114.50	119.33	127.00	119.12	120.16	120.74	116.94	117.14	108.89
Index No. of seasonal variation	95.47	91.76	96.59	98.61	102.77	109.38	102.59	103.49	103.99	100.72	100.89	93.78

Source: Cardamom Board, Cochin.

Table 7.6

Month-wise weighted average prices of cardamom at auctions in Tamilnadu: 1970-71 to 1984-85
(Crop year; Unit prices in Rs./kg.)

Crop year	August	September	October	November	December	January	February	March	April	May	June	July
1970-71	29.30	57.46	47.47	43.77	38.27	40.73	30.96	32.98	36.03	32.20	27.32	25.08
1971-72	31.50	31.47	27.15	20.92	24.14	25.14	21.05	22.26	28.77	29.73	36.80	30.05
1972-73	44.95	34.66	34.10	42.55	55.14	54.24	50.35	48.22	46.50	38.82	42.70	39.39
1973-74	80.38	51.00	49.16	53.58	51.56	55.38	57.62	59.96	70.56	76.26	77.33	95.28
1974-75	80.38	68.88	67.19	68.37	72.28	74.25	71.15	65.16	65.32	-	-	-
1975-76	71.18	72.85	76.12	77.17	76.27	87.95	80.40	80.56	93.05	90.70	99.28	85.00
1976-77	125.63	114.10	147.92	168.90	165.60	174.01	155.03	158.08	120.81	103.61	105.50	101.28
1977-78	114.85	100.59	105.60	107.03	129.66	125.01	110.50	115.70	131.74	124.67	86.89	138.34
1978-79	144.77	161.17	157.00	153.48	146.54	137.00	127.22	116.73	126.12	125.91	124.29	129.79
1979-80	133.88	135.61	140.15	130.61	127.87	129.86	114.89	97.38	92.10	86.53	64.56	66.62
1980-81	72.36	83.89	80.19	85.77	79.51	71.46	65.73	63.57	68.30	75.49	65.79	63.02
1981-82	78.22	94.66	96.64	94.00	89.95	103.20	99.72	98.17	94.20	108.02	140.63	154.50
1982-83	145.74	136.35	130.95	138.04	154.57	176.48	170.43	176.52	179.58	220.48	238.41	252.62
1983-84	250.28	250.83	283.10	369.24	443.20	438.12	420.11	283.89	330.49	213.69	247.97	-
1984-85	209.97	244.27	231.81	177.80	164.71	178.67	158.75	114.81	119.11	107.90	89.42	78.06
Total:	1613.39	1637.79	1674.55	1731.23	1819.26	1871.50	1739.91	1539.69	1602.68	1434.01	1446.89	1259.03
Average	107.56	109.19	111.64	115.42	121.28	124.77	115.99	102.65	106.85	95.60	96.46	83.94
Index No. of seasonal variation	99.95	101.47	103.75	107.26	112.70	115.95	107.78	95.39	99.29	88.84	89.64	78.00

Source: Cardamom Board, Cochin.

One peculiarity in the movement of auction prices was that the prices were higher when the supplies were also higher. In other words, the prices were higher during the peak months of arrival than in the lean months, especially in Kerala. This behaviour of auction prices moving together with higher market arrivals and sales is, theoretically speaking, different from the general price behaviour of agricultural commodities. The reason for this unusual behaviour becomes evident when the export demand pattern is analysed alongwith prices.

The auction prices of cardamom are actually determined by the export prices and not by the demand and supply relationship in the domestic market. This is because more than half of the cardamom produced in the country are exported. The demand in the foreign countries, especially in the Middle East, is higher during the period October to January. This is on account of the onset of winter and the Ramzan festival, when consumption of cardamom coffee is higher.

Another reason which can be attributed to the prevalence of lower prices during the first and last few months of the crop season is that the quality of cardamom arriving at the auctions during that period is

inferior to the cardamom arriving in the peak season of October to January.

A further reason for this kind of price behaviour is that the cardamom produced in Karnataka and Tamilnadu mainly go into the domestic upcountry markets more or less in a phased manner. The lower grades of the Alleppey Green variety cardamom produced in Kerala after meeting the export commitments also go into the upcountry domestic markets, which happens during the April-August period. The domestic upcountry demands are also slightly higher during the October-January period compared to other months. This also makes the auction prices higher during the October-January period, along with the higher arrivals at auctions during the same period.

Export Sales and Prices

The monthly data on export sales and prices of cardamom from 1971-71 to 1984-85 are given in Tables 7.7 and 7.8.

The nature of seasonal fluctuations in the quantity of cardamom export is more or less similar to that of market arrivals or sales. But the magnitude of fluctuations in export as shown in Table 7.7 is much less than in the case of market arrivals. The exports were highest in December (index number: 188.29) and lowest in

Table 7.7

Month-wise Quantity of Export of Cardamom from India : 1970-71 to 1984-85
(Financial year; Quantity in M.T.)

Financial Year	April*	May*	June*	July*	August	September	October	November	December	January	February	March
1970-71	61	46	58	54	40	77	167	305	137	315	203	242
1971-72	172	117	95	101	45	81	222	311	222	318	255	214
1972-73	187	174	175	45	42	35	-	396**	-	-	352**	-
1973-74	55	150	139	117	93	218	40	106	87	145	352	311
1974-75	122	116	130	32	87	23	14	205	276	97	262	262
1975-76	63	109	96	49	18	47	93	202	281	475	195	313
1976-77	152	66	66	39	19	19	14	56	132	138	-	192
1977-78	104	199	159	76	90	87	388	428	546	266	210	210
1978-79	230	177	104	78	39	64	252	273	624	356	384	295
1979-80	215	141	168	76	62	37	174	330	413	413	335	282
1980-81	227	178	89	187	66	65	134	363	463	236	160	177
1981-82	278	98	123	112	79	117	132	470	355	334	117	110
1982-83	27	90	21	37	78	20	63	176	238	70	113	99
1983-84	88	38	15	6	7	8	11	27	26	18	4	16
1984-85	84	170	49	67	47	157	232	255	444	287	242	349
Total	2065	1869	1487	1070	812	1055	2015	3650	4418	3598	2938	3178
Average	137.66	124.60	99.13	71.33	54.13	70.33	134.33	243.33	294.33	239.87	195.87	211.87
Index number of seasonal variation	88.00*	79.66*	63.37*	45.60*	34.61	44.96	85.88	155.56	188.29	153.35	125.22	135.45

Note: * relates to previous crop year

** month-wise figures are not available. So the month-wise distribution is done by proportionality basis.

Source: 1. 1970-71 to 1975-76: D.G.C. I & S, Calcutta.
2. 1976-77 to 1984-85: Cardamom Board, Cochin.

Table 7.8

Month-wise, weighted average prices of cardamom exported from India:

1970-71 to 1984-85

(Financial year; Unit prices in Rs./kg.)

Financial year	April*	May*	June*	July*	August	Sept.	Oct.	Nov.	Dec.	January	February	March
1970-71	89.22	89.72	89.36	85.54	80.73	79.42	78.16	65.41	58.31	57.11	53.75	55.95
1971-72	46.11	47.30	40.75	42.39	34.23	42.12	41.86	38.55	30.56	34.07	30.96	32.34
1972-73	32.84	40.89	47.79	39.49	39.01	38.86	17.47	17.47	17.47	21.08	21.08	21.08
1973-74	55.41	63.18	61.51	59.61	61.74	58.97	55.53	60.43	61.15	62.67	67.57	70.88
1974-75	67.81	76.89	81.94	79.50	89.15	86.27	86.78	83.57	83.36	77.03	78.16	90.45
1975-76	99.12	93.94	98.20	93.00	89.23	94.84	90.48	100.62	100.66	102.89	108.40	97.32
1976-77	112.61	108.50	108.88	114.54	134.95	135.28	121.79	145.44	184.23	202.75	-	193.17
1977-78	198.20	186.50	176.96	168.85	176.20	162.28	164.66	169.54	178.98	180.96	173.78	174.65
1978-79	171.08	167.73	171.43	196.81	184.01	190.60	215.56	218.54	209.07	219.45	212.98	195.36
1979-80	187.82	191.08	177.46	176.51	173.27	178.37	206.29	203.50	186.52	179.03	169.67	172.40
1980-81	115.67	110.49	111.87	130.57	127.61	127.24	131.95	139.44	134.92	137.03	126.12	129.50
1981-82	149.87	160.32	162.23	157.99	148.90	142.37	151.49	140.06	146.68	147.00	149.38	136.83
1982-83	124.90	151.75	133.79	145.00	129.50	183.55	151.88	165.62	154.13	163.95	183.96	171.94
1983-84	185.15	174.58	150.15	406.65	163.78	245.39	214.37	253.90	214.81	313.89	350.99	267.00
1984-85	455.79	372.25	335.95	279.31	273.84	300.17	285.74	280.01	255.28	239.89	235.41	212.89
Total	2089.60	2035.12	1948.27	2175.76	1906.15	2065.73	2014.01	2082.10	2016.69	2138.80	1962.21	2021.76
Average	139.30	135.67	129.88	145.05	127.08	137.72	134.26	138.81	134.45	142.59	130.81	134.78
Index Number of seasonal variation	102.52*	99.85*	95.59*	106.76*	93.53	101.36	98.82	102.16	98.95	104.95	96.28	99.20

Note: * relates to previous crop year.

Source: 1. 1970-71 to 1975-76: C.G.C. I & S., Calcutta.
2. 1976-77 to 1984-85: Cardamom Board, Cochin.

August (index number : 34.61). Interestingly, the arrivals were also highest in December (index number: 198.31) and lowest in July (index number: negligible) in Kerala. Further, the index number of seasonal variations in exports in September, October, February and March were 44.96, 85.88, 125.22 and 135.45 respectively as against index numbers of variations in arrivals in Kerala during these months at 106.40, 258.81, 90.88 and 83.91 respectively. This variation in auction sales and export is due to the fact that export is made against prior order from abroad and is executed in a little more staggered manner than that of the purchase from the market.

The export prices have also shown slight seasonal fluctuations, but not of the levels of variations in auction prices. During the August-March period of the same crop season, the export prices were highest in January (index number of variation: 104.95) and lowest in August (index number: 93.53). The index number of variation of export prices ranged from 96.28 to 104.95 during the period of September-March, whereas the index number of variation in auction prices in Kerala during the same period ranged from 123.46 to 142.26. The drastic variations in auction prices in Kerala and export prices are due to the fact that auction arrivals in Kerala are in

bulk, comprising the highest to the lowest grades, whereas the exports are generally of uniform pattern of higher grades of Alleppey Green cardamom. It emerges from the above that the nature of seasonal fluctuations in export and export prices are more or less similar to that of market arrivals and auction prices.

The entire cardamom trade of India, both domestic and export, is dominated by the exporters. There are very few dealers in the cardamom producing centres who undertake domestic trade exclusively. This is indicative of the export orientation of cardamom trade as a whole. The cardamom exporters make a forecast of the expected production of cardamom in the country at the beginning of the harvest season, mainly on the basis of the climatic conditions prevailing in the cardamom growing tracts. These exporters also gather some information about the probable crop of Guatemala during the season through the trade channels of the consuming countries in the Middle East. On the basis of this estimate of global production, the domestic exporters arrive at some agreement on prices with the foreign importers and set a price in the domestic market at the beginning of the season. The domestic price is thus related to the demand forthcoming from the Middle East market.

If the production of cardamom is actually lower than the early forecast, the prices will go up gradually. Otherwise, it declines. In any case, it is the price in the foreign market, agreed upon between the exporters and importers that sets the price trend in the beginning of the season. In other words, the auction or domestic price in India for cardamom is set by the importers in the Middle East. From this, it is evident that there is a close relationship between auction or domestic price and export price.

The yearly data from 1970-71 to 1984-85 on auction prices in Kerala, Karnataka and Tamilnadu are given in Table 7.9. It can be noted from this Table that the auction prices in Kerala were the highest, followed by Karnataka and Tamilnadu in that order. But it should also be noted that the prices received by the Kerala growers were inclusive of the five per cent sales tax paid by them. At the same time, the prices received by Karnataka and Tamilnadu growers were exclusive of the four per cent purchase tax paid by the traders and exporters. When this tax element is also taken into consideration, it can be seen that the auction prices of Kerala and Karnataka were more or less same in all the years, whereas the prices of Tamilnadu cardamoms were a little lower than those of the Kerala and Karnataka cardamoms.

Table 7.9

Auction prices of cardamom and Export prices: 1970-71 to 1984-85

(Crop year; Unit prices in Rs./kg.)

Crop year	Kerala Auction price	Karnataka Auction price	Tamil-nadu Auction price	India Auction price	India Export price	Increase in Export price	Percentage of increase in Export price over Auction price.
1970-71	53.23	45.27	40.76	50.76	57.04	6.28	12.37
1971-72	30.33	26.33	25.80	29.08	36.71	7.63	26.24
1972-73	54.93	38.14	43.30	49.69	58.46	8.77	17.65
1973-74	60.54	59.83	26.80	60.05	68.66	8.61	14.34
1974-75	76.93	75.06	70.06	76.24	86.08	9.84	12.91
1975-76	89.47	78.67	81.23	86.45	102.63	16.18	18.72
1976-77	164.20	145.04	143.09	156.75	183.57	26.82	17.11
1977-78	142.25	104.93	116.61	134.41	173.40	38.99	29.00
1978-79	178.71	133.98	136.86	166.42	205.00	38.58	23.18
1979-80	141.98	118.93	113.55	134.88	176.78	41.90	31.06
1980-81	108.51	78.66	75.46	98.91	136.66	37.75	38.17
1981-82	121.37	104.90	96.34	116.02	135.46	19.44	16.76
1982-83	158.29	165.93	158.12	161.08	166.96	5.88	3.65
1983-84	379.42	356.63	348.92	370.49	337.14	-33.35	- 9.00
1984-85	202.79	199.64	149.51	199.91	235.86	35.95	17.98
Average	-	-	-	-	-	-	18.01
Average except 1983-84	-	-	-	-	-	-	19.93

Note: The unit price of export for a particular crop year includes the unit price of export of cardamom during April-July period of previous crop year.

Source: Auction prices: Cardamom Board, Cochin.

Export prices :1. 1970-71 to 1975-76: D.G.C. I & S., Calcutta.
2. 1976-77 to 1984-85: Cardamom Board, Cochin.

The yearly data on auction prices in India and the export prices are given in Table 7.9. Kerala auction prices and 'AlleppeyGreen' export prices are given in Table 7.10.

From Table 7.9 it can be seen that the percentage of increase in export price over auction price ranges between (-)9.00 per cent² to 38.17 per cent with an average of 18.01 per cent in the period 1970-71 to 1984-85. If we do not consider the drought year 1983-84, the average increase in export price over auction price was 19.93 per cent.

As more than 90 per cent of the exports from India are of the AlleppeyGreen varieties, it would give a clearer picture of the differences between the export prices and auction prices, if one examines the export prices of the AlleppeyGreen varieties. This may be seen from Table 7.10. The export price was higher than the auction price within a range of (-)9.71 per cent and 26.29 per cent. The average mark up of the export price was 15.43 per cent over the Kerala auction prices.

²See, Table 7.7 and 7.8. It may be seen that 141 M.T. of cardamom of previous crop year were exported at prices ranging between Rs.150.15 per kg. and Rs.185.15 per kg. during April-June 1983.

Table 7.10

Kerala Auction prices vis-a-vis Alleppey Green
Export prices of cardamom: 1970-71 to 1984-85

(Crop year; Unit prices in Rs./ kg.)

Crop year	Kerala Auction price	Alleppey Green Export price	Increase in Export price	Percentage of increase in Export price over auction price
1970-71	53.23	66.56	13.33	25.04
1971-72	30.33	37.41	7.08	23.34
1972-73	54.93	59.74	4.81	8.76
1973-74	60.54	69.22	8.68	14.34
1974-75	76.93	86.96	10.03	13.04
1975-76	89.47	104.01	14.54	16.25
1976-77	164.20	186.01	21.81	13.28
1977-78	142.55	176.27	33.72	23.65
1978-79	178.71	207.09	28.38	15.88
1979-80	141.98	179.31	37.33	26.29
1980-81	108.51	131.81	23.30	21.47
1981-82	120.76	139.11	18.35	15.20
1982-83	158.29	170.49	12.20	7.71
1983-84	379.42	342.56	-36.86	- 9.71
1984-85	202.79	237.12	34.33	16.93
Average	-	-	-	15.43
Average except 1983-84	-	-	-	17.23

Note: The unit price of exports for a particular crop year included the unit price of export of cardamom during April-July period of previous crop year.

Source: Auction price: Cardamom Board, Cochin.

Export price: 1. 1970-71 to 1975-76: D.G.C. I & S, Calcutta.
 2. 1976-77 to 1984-85: Cardamom Board, Cochin.

If the drought year of 1983-84 is not taken into consideration the average mark up was 17.23 per cent.

The movements of Indian auction prices and export prices are shown in Graph 7.1. The movement of Kerala auction prices and Alleppey Green export prices may be seen in Graph 7.2.

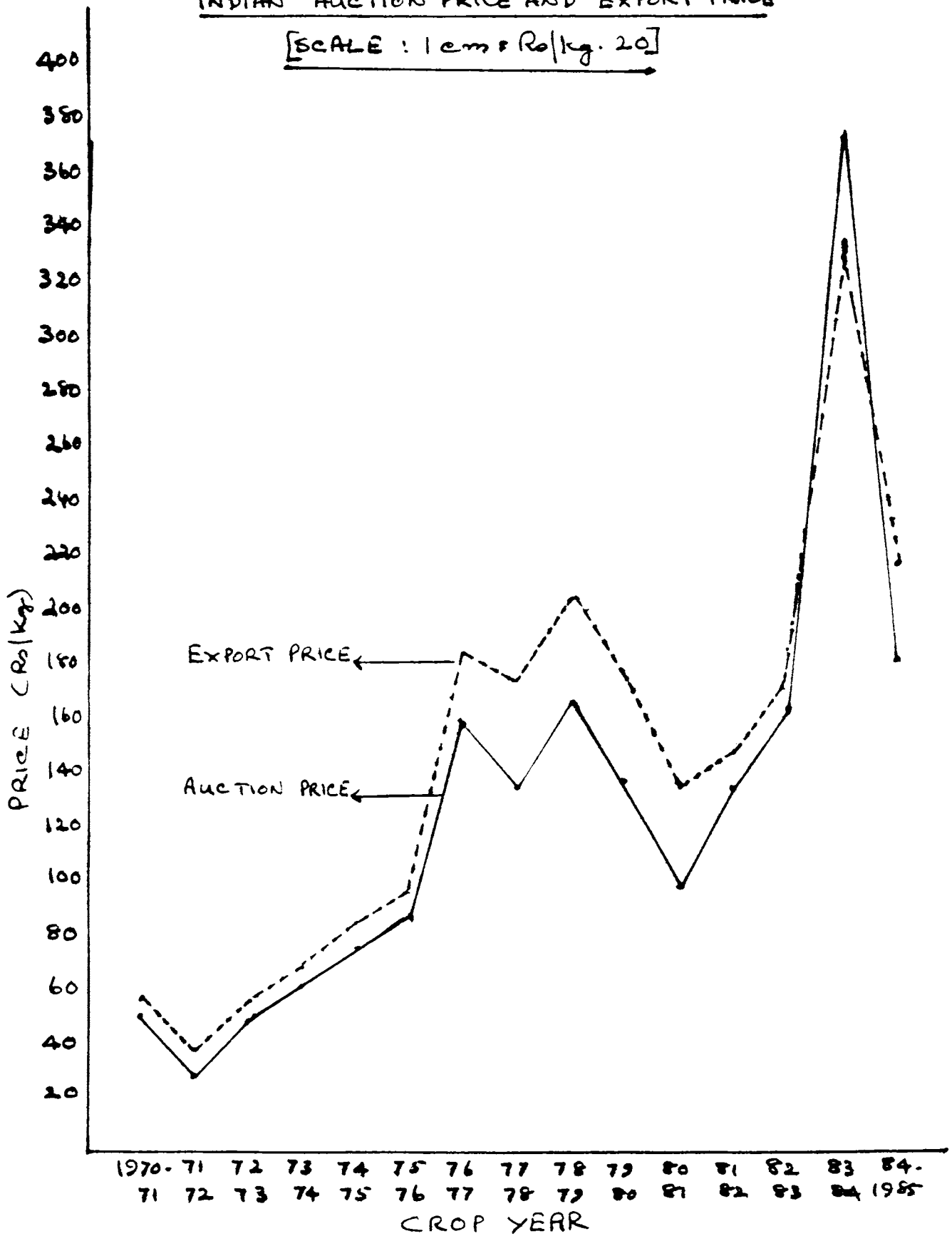
Zone-wise export prices of cardamom from 1970-71 to 1984-85 are given in Table 7.11. In 1970-71 while the price of Indian cardamom per kilogram was Rs.67.84 in the Middle East, it was Rs.58.80 in the European zone, Rs.42.73 in the East Asian zone, Rs.58.50 in the African zone, Rs.53.41 in the American zone and Rs.67.33 in the Australian zone. It may be noted that all through the years until 1982-83, the export price of Indian cardamom was highest in the Middle East zone. The export prices to the East Asian, African, American and Australian zones show a higher price realization in certain years, but they are not particularly significant as the quantities exported to those areas are rather negligible when compared with exports to the Middle East and European zones.

From Table 7.11 it might appear that in the international market, India has been practising a discriminating price policy in the sale of cardamom. This is

GRAPH - 7.1.

INDIAN AUCTION PRICE AND EXPORT PRICE

[SCALE : 1 cm = Rs/kg. 20]



GRAPH 7.2.

KERALA AUCTION PRICES AND ALLEPPEY GREEN EXPORT PRICES

[SCALE: 1cm: Rs/Kg-20]

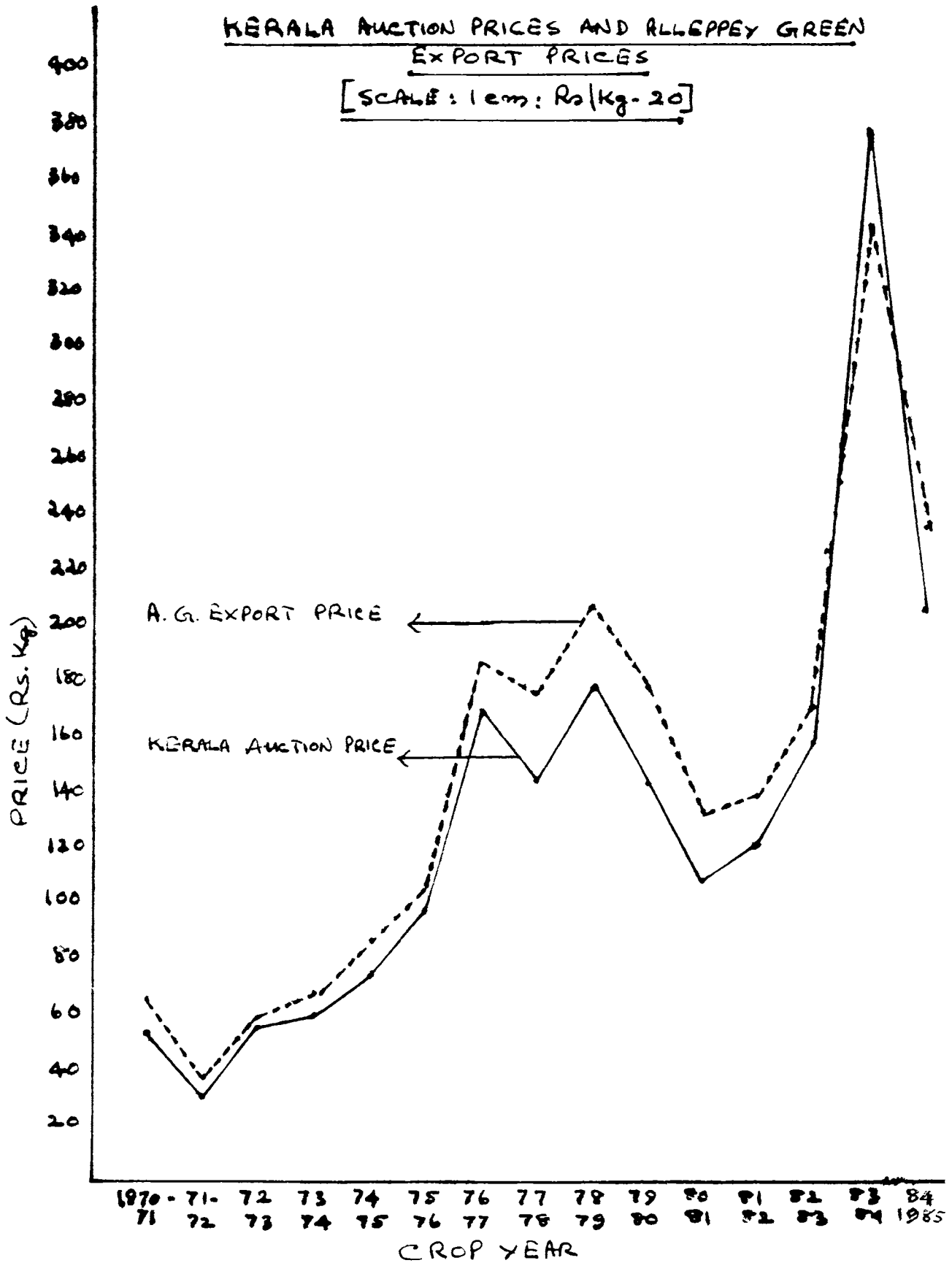


Table 7.11

Zone-wise Export Prices of Indian Cardamom: 1970-71 to 1984-85
(Unit prices Rs./kg.)

Year	Middle East Zone	European Zone	East Asian Zone	African Zone	American Zone	Australian Zone	Total
1970-71	67.84	58.80	42.73	58.50	53.41	63.33	65.78
1971-72	39.52	28.53	29.36	39.14	38.58	35.33	37.40
1972-73	52.98	42.16	30.91	45.33	46.07	69.00	49.46
1973-74	66.48	54.11	43.80	57.75	65.16	65.00	63.72
1974-75	88.83	70.33	67.81	96.37	95.66	52.00	81.94
1975-76	104.32	78.49	73.96	103.50	116.30	60.00	99.86
1976-77	162.95	150.70	133.75	80.00	158.33	85.00	157.13
1977-78	179.74	130.52	132.88	N.A	186.92	119.00	175.30
1978-79	213.23	131.78	146.58	159.00	190.00	@	202.89
1979-80	192.43	140.82	146.58	214.00	187.40	126.00	184.21
1980-81	155.51	111.52	98.83	117.07	279.25	@	148.10
1981-82	142.09	85.77	94.76	132.33	141.42	@	129.87
1982-83	170.60	136.52	135.05	193.50	157.00	@	158.60
1983-84	216.75	141.85	253.18	263.00	308.00	@	210.90
1984-85	270.17	197.95	197.26	254.00	335.00	@	271.92

Note: @ : Negligible
Source: Cardamom Board, Cochin.

not true, as is evident from the grade-wise exports of Indian cardamom to different countries.³ The Middle East countries invariably buy the higher grades of cardamom, whereas European countries, U.S.S.R., Japan, etc. buy only the lower grades. This accounts for the difference in the price structure.

The export prices of cardamom of different countries from 1970-71 to 1984-85 are given in Table 7.12.

The average export price of Indian cardamom was Rs.65.78 per kilogram in 1970-71 as against Rs.36.07 per kilogram for Guatemalan produce. The export price of Indian cardamom declined in the next three years, but picked up in 1974-75. It stood at Rs.99.88 per kilogram in 1975-76. These changes in prices were noticed about the Guatemalan, Sri Lankan and Tanzanian cardamoms also, but not to the same extent as in the prices of Indian cardamom. During the period 1976-77 to 1980-81, there were sharp increases every year in the export prices of cardamoms of India, Guatemala and Sri Lanka. The Indian export fetched a unit price of Rs.175.28 per kilogram in 1977-78 and Rs.202.92 per kg. in 1978-79, as against Rs.106.38 per kg. and Rs.115.73 per kg. respectively for Guatemalan export. The Sri Lankan cardamom fetched

³See Chapter IX, Table 9.5 and 9.6.

Table 7.12
Export prices of cardamom of different countries:
1970-71 to 1984-85

(Unit prices in Indian Rupees per kg.)

Financial year	India	Guatemala*	Sri Lanka*	Tanzania*
1970-71	65.78	36.07	NA	NA
1971-72	37.41	42.15	43.49	NA
1972-73	49.45	31.16	37.21	19.96
1973-74	63.71	34.24	63.13	22.08
1974-75	81.92	46.89	61.00	24.75
1975-76	99.88	52.65	53.01	23.38
1976-77	157.17	72.84	104.86	35.41
1977-78	175.28	106.38	188.83	61.94
1978-79	202.92	115.73	143.68	75.87
1979-80	184.23	126.99	163.03	55.25
1980-81	148.18	98.71	136.91	22.99
1981-82	129.87	67.66	127.55	NA
1982-83	158.60	NA	NA	NA
1983-84	210.92	NA	NA	NA
1984-85	271.92	NA	NA	NA

Note: NA : Not available

* : Calendar year figures from 1970 to 1981;
 Financial year figures of these countries
 are not available.

- Source:
1. Cardamom Board, Cochin.
 2. F.A.O., Rome.
 3. International Trade Centre (UNCTAD/GATT), Geneva.
 4. Commonwealth Secretariate, London.
 5. High Commission of India, Colombo.

Rs.188.83 per kilogram in 1977-78 and Rs.143.68 per kg. in 1978-79. There were also significant increases in the prices of Tanzanian cardamom during the period. However, from the beginning of the eighties, prices started declining. This was mainly due to the recession in the economy of the Arab nations and the increases in the supply of cardamom from Guatemala and India. The price of Indian cardamom in the export market came down to Rs.129.87 per kilogram in 1981-82 and that of Guatemalan cardamom to Rs.67.66 per kilogram in that year. Due to drought in India and subsequent reduced supply to the world market, the prices picked up in subsequent years. There was a drastic cut in supply of cardamom in the world markets during 1982-83 and 1983-84 because of the failure of the crop in India. Prices were pushed up to a record level of Rs.271.92 per kilogram in 1984-85.

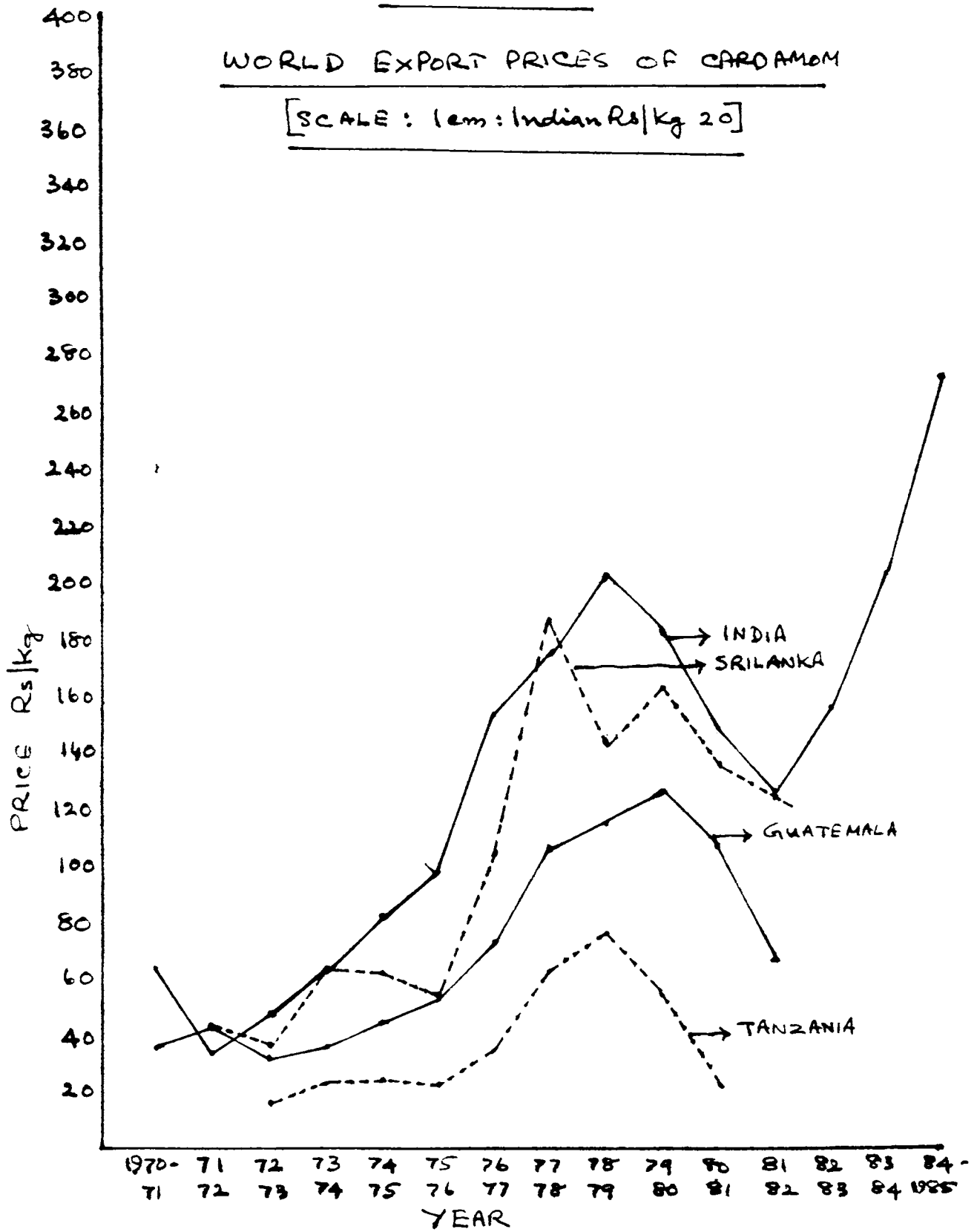
The export prices of Sri Lankan cardamom were mostly in between the prices of Indian and Guatemalan cardamoms. The prices of Tanzanian cardamom was always lower than that of cardamom from the other three countries. Sri Lankan cardamom, though smaller in quantity and lower in quality when compared to the Indian and Guatemalan cardamoms, fetched an intermediate price in the export market. This has been mainly because of its earlier availability, i.e., before January, every year

in the Middle East market along with the arrival of Indian cardamom. The Tanzanian cardamoms are considered poorest in quality, and, therefore, fetched the lowest prices in the export market.

The movements of the export prices of cardamom of all the major cardamom exporting countries may be seen charted in Graph 7.3.

The growers' response to price advantages, has always been to increase production. The view that the price incentive is the best incentive to increase farm production has been proved correct to a large extent in the case of cardamom production in India. Since the cardamom plant has two to three years of gestation period after planting, depending upon the planting with rhizomes or seedlings, the prices of cardamom in the previous two or three years have more importance than those of the current year in increasing production. Growers generally respond very positively to good price, not only by adequate use of inputs to get higher productivity, but also by resorting to gap filling and bringing additional area available within the estates under cultivation by using rhizomes for new planting.

Discussions with exporters and traders of cardamom reveal that they are not usually directly concerned

GRAPH-7.3.WORLD EXPORT PRICES OF CARDAMOM[SCALE : 1cm : Indian Rs/kg 20]

with the problem of prices. The exporters and traders are satisfied so long as they are able to get a fairly good return on investment.

Expenditure on exports

The cardamom exporters incur certain operating expenses for export. It was seen from Table 7.10 that the average mark up in export prices from Kerala auction prices ranged between 7.71 per cent to 26.29 per cent. During the 1984-85 season, the average auction price in Kerala for the Alleppey Green variety was Rs.202.79 per kg. and its export price was 271.92 per kilogram. This was a mark up of 34.09 per cent in export price over the auction price.

Table 7.13 gives an estimate of export expenses incurred by the exporters in the 1984-85 season. From this Table it is seen that during the 1984-85 season, the export expenses came to Rs.34.31 per kilogram. If the consignment is sent by air, the freight expenses would be more, but this is normally compensated by the importer. Thus in the 1984-85 season, on an auction price of Rs.202.79 per kilogram the gross cost was Rs.237.10 per kilogram to the exporter. He thus got a net profit of Rs.34.82, when the export price was Rs.271.92 per kilogram. This works

Table 7.13

Estimated Export Expenses for Cardamom: 1984-85 season

No.	Particulars	Expenditure/kg. Rs.
1.	Transportation charges	0.55
2.	Lorry insurance	0.30
3.	Loading and unloading charges	0.15
4.	Cleaning and grading charges	1.50
5.	Agmark charges	0.20
6.	Packing material cost	2.00
7.	Packing charges	0.50
8.	Loading charges at the dock	0.10
9.	Godown rent	0.10
10.	Shipping agent handling charges	0.45
11.	Commission for agents	2.00
12.	Freight	4.00
13.	Establishment expenses	4.48
14.	Packing credit for 3 months (@ 12% p.a.)	8.19
15.	Export cess (@ 3%)	8.19
16.	Agriculture produce cess (@ 1/2% on tariff value of Rs.130/- per kg.)	0.65
17.	Palletisation charges	0.15
18.	Phytosanitary charges	0.60
19.	Examination/opening/repacking by customs	0.20
	Total	34.31

Note: A unit price of Rs.273/- per kg. is assumed,
wherever applicable.

Source: Discussions with exporters.

out to 14.69 per cent as net profit to the exporter. In August 1984, the Government of India introduced a cash compensatory support (CCS) of 10 per cent for export of cardamom in consumer packs of 2 kgs. and less. If the exporter had managed to send all his exports in consumer packs, he would have got an additional income of Rs.26.30 per kg.⁴ This increased his net profit to Rs.61.12 per kilogram. This is a net income of 25.67 per cent on his gross expenditure of Rs.238.10 per kilogram.

As mentioned elsewhere, one important point to be noted here is that only 60 to 70 per cent of the bulk bought at the auction could be exported. This 60 to 70 per cent constituted the higher grades. Only these higher grades fetch an export price of Rs.271.92 per kg. In other words, 30 to 40 per cent of the lower grades available in the bulk had to be sold at a much cheaper price in the internal market. Thus the margin of net profit of the exporter comes down drastically from the above computed percentages. In the absence of reliable data on the prices of lower grades of cardamom sold by the exporters in the internal market, the computation of the actual net profit enjoyed by the exporter becomes difficult. More over, it is needless to say that profit

⁴CCS: Rs.27.30 per kg; cost of consumer packing: Re.1; net additional income: Rs.26.30 per kg.

varies from exporter to exporter, depending upon his expertise in buying bulk or ungraded cardamom in the auctions, establishment charges, visits to foreign markets, percentage of commission offered to importers' agents etc.

Enquiries reveal that the margin of net profit realised by the exporters is about 10 per cent on an average. The profit margin in the sale of lower grades to the domestic market also fetches about 10 per cent profit as understood from them.

In spite of the long term upward trend in the export and auction prices, the wide fluctuations in prices in the world market and in the auctions are really causing serious concern to the cardamom growers in India. The average auction price of cardamom which was only Rs.50.76 per kg. in 1970-71, increased to Rs.199.91 in 1984-85, an increase of about four times. However, there were violent fluctuations in prices from year to year. The prices have shown sudden drops such as from Rs.50.76 per kg. in 1970-71 to Rs.29.08 in 1971-72; from Rs.156.75 per kg. in 1976-77 to Rs.134.41 in 1977-78; from 166.42 per kg. in 1978-79 to Rs.134.88 in 1979-80 and Rs.98.91 per kg. in 1980-81; and from Rs.370.49 per kg. in 1983-84 to Rs.199.91 in 1984-85 and sudden increases such

as from Rs.86.45 per kg. in 1975-76 to Rs.156.75 per kg. in 1976-77 and from 158.12 per kg. in 1982-83 to Rs.370.49 per kg in 1983-84. The growers concern on violent fluctuations in prices from year to year is all the more aggravated by the ups and downs in productivity coupled with sharp increases in cost of production. This has resulted in a good reduction in the margin profit of the growers and a feeling of uncertainty of income over the future years. It has been seen that in the late sixties and in 1972-73, 1973-74, 1976-77, 1982-83 and 1983-84, the productivity ranged from 23 kgs. per hectare to 41 kgs. per hectare. The drastic decline in productivity in 1982-83 and 1983-84 could be attributed to unprecedented drought or natural calamity. But, at the same time, it is true that the cost of production was on the increase as a result of the increase in the wage rates and the increases in the cost of material inputs during these years. The overall increase of four fold in prices in fifteen years from 1970-71 to 1984-85 is no way compensatory, when we consider inflation rate alone in the last fifteen years. Cardamom industry is thus facing a very serious crisis on the profitability front of the farmers, caused perhaps by the policy failures in prices. This calls for a review of the situation and swift remedial steps, particularly with regard

to exports, by the Cardamom Board and the Government of India. Unless some drastic corrective measures are taken in the marketing front to stabilize the prices of cardamom at remunerative levels to the growers, it is quite likely that in the next ten or fifteen years, the cardamom industry of India may get out of the world cardamom map.

CHAPTER VIII

DOMESTIC MARKETING OF CARDAMOM

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CHAPTER VIII

DOMESTIC MARKETING OF CARDAMOM

The marketing of cardamom in India is controlled and regulated by the Cardamom Board from 1977 onwards as per the Cardamom (Licencing and Marketing) Rules, 1977. These rules came into effect on 14th October 1977. As per these rules three market functionaries, viz., the auctioneers, the dealers who buy cardamom from the growers or in the auction, and the exporters have to obtain appropriate licences for undertaking business in cardamom. The second level dealers, who buy cardamom from licenced primary dealers need not take the licence for trading in cardamom.

The Auction system

It was seen that Idukki district in Kerala, Coorg district in Karnataka and Madurai district in Tamilnadu are the main cardamom producing areas in the country. The first sale of the commodity is largely effected through the cardamom auction centres located in the main plantation areas. There were 14 auctioneers in India during the year 1984-85, all licenced by the Cardamom Board. Vandanmedu, Santhanpara, Kumili and Cochin in Kerala;

Mercara, Saklespur and Mangalore in Karnataka and Pattiveeranpatti and Bodinayakanur in Tamilnadu are the major cardamom auction centres. Of the fourteen auctioneers, one auctioneer, viz., The Cardamom Marketing Corporation, Vandanmedu, a partnership firm of large growers, handles the bulk of the cardamom produced in Kerala and the country. Cardamom Board has estimated that about 60 to 70 per cent of the cardamom produced in the country is first sold through the auctions. The rest is sold directly to the dealers and exporters by the growers.

The system of auctioning in cardamom is unique, and it has been in existence for the last several years, even before the introduction of licencing and control by the Cardamom Board in 1977. The process of open auction in a auction centre is worth mentioning. Each auctioneer conducts the auction once in a week. The growers bring their weekly harvest of cured cardamom to the nearby auction centre and register the lots i.e., bags of cardamom. They generally deposit the cardamom for auction in two or three lots after making a simple sorting at their estates, according to size and colour. The auctioneer arranges the auction on a pre-fixed day by inviting exporters and wholesale dealers from important marketing centres. The exporters and wholesale dealers licenced by the Cardamom Board, attend the auction

PLATE 8.1



A SCENE FROM CARDAMOM AUCTION

for bidding. The growers who deposit their cardamoms at the auction centre may or may not be present to witness the auction. The auctioneer announces the number and the quantity of cardamom of each lot and puts it for auction. Samples of cardamom in each lot are distributed among the bidders. The exporters and traders bid and the lot is sold to the particular exporter or trader who bids the highest price. One per cent commission on the value of cardamom sold in the auction goes to the auctioneer for the services rendered in this connection. This is paid by the grower.

The bidding in the auction is supposed to be highly competitive. The expectation is that the auction enables to fetch the highest possible price for the produce at that point of time. But a close study of the auction that takes place in an auction centre, where a large number of exporters and traders take part, gives some evidence to suspect whether all the growers are getting a reasonable price for their produce through the auction system or not. This suspicion is based on the fact that "normally lots of bigger size fetch higher prices than the lots of smaller sizes".¹ One reason for this might be that lots of bigger sizes come from

¹Joseph, K.J., An analysis of the marketing and price formation of cardamom in Kerala, (Centre for Development Studies, Trivandrum, 1985) (unpublished M.Phil Thesis) p.127.

large growers, the quality of which might be better. Also the bidders are usually interested in getting bigger lots so that they can get the required quantum of the commodity in a lesser number of biddings. In most cases, the exporters and traders bid in the auction after having entered into contracts with overseas and upcountry buyers. They are keen to buy the required quantity as early as possible. However, it is also suspected that the large growers, who bring their produce for auction, are either traders or exporters themselves, or have close business relationships with exporters and traders who come for bidding. This enables the large growers to influence the exporters and traders to bid their produce at a higher price, probably at the cost of small lots of small growers. It is, however, often argued that this private arrangement between large growers and exporters is not very practicable because the identification of the lot, when it is put to auction is not disclosed. There are, however, major difficulties to fully agree with this argument, because most of the auctioneers, who practically control the auction, are themselves large growers, and they look after the interests of the large growers at the cost of the small growers. So, one who observes the auction in

any big auction centre is inclined to believe that most of the small growers who bring small lots to the auction are not perhaps getting a reasonable price for their produce.

The indirect credit extended by the growers also plays an important role in this context. The auctioneers give 14 days' credit to the exporters and traders who buy cardamom in the auction. Normally the traders and exporters give 14 days' post-dated cheques and take delivery of the produce. The auctioneer will pay the grower on or before the 20th day of auction, even if the cheque of the bidder is not realised on the 14th day. In view of this 'understanding' among the big exporters, the traders, the auctioneers and the growers the deal is effected even if the exporters or traders or auctioneers delay the payment. The large growers are in a position to bear with such delays, whereas the small grower cannot afford to wait for payment for more than 20 days or one month. In many cases, the smaller growers are paid by the auctioneer immediately after the sale of their produce in the auction. Ultimately, this also depresses the price of the produce of the small growers. A study undertaken recently confirms that "the auction price varies with lot size and quality in favour of big growers".²

²Ibid., p.128

Probably the controlled marketing system introduced by the Cardamom Board at the primary level has not fully served the purpose for which it was intended. This is because, the auction is organised and controlled by private auctioneers. The Cardamom Board officers only supervise the auction. It may be noted in this context that there are some people in the cardamom industry who are growers-cum-auctioneers-cum-traders-cum-exporters. Such people are in a position to function as the actual price setters in this industry in a limited way, even though the base prices are set on the export demand of the commodity. This situation will have to be changed if the small growers are to be assured of reasonable and remunerative prices. The strategy for cardamom marketing should be such as to avoid the kind of private control in setting the prices, both in internal and external markets.

The auctioneers collect the sales or purchase tax at the auction and remit it to the State governments in lumpsum. In Kerala, there is a single point sales tax at the rate of five per cent, which is levied at the first point of sale and is paid by the growers. In Karnataka and Tamilnadu, it is a single point purchase tax at the rate of four per cent which is also levied

at the first point of sale, but is paid by the trader or exporter.

Sales outside Auctions

Though the auctioneers handle a sizable quantity of cardamom produced in the country, the direct sales effected by the grower to the dealers and exporters also constitute a fairly large quantity. Direct sales come from two categories of growers. One is the small grower, who does not have a significant quantity to offer for sale at the weekly auctions, and cannot afford to wait for longer period to accumulate large quantities for sale at the auctions. This group, it was noted earlier, owns less than two hectares of cardamom land. They account for 69 per cent of the holdings and 22 per cent of the total area under cardamom in the country.³ Such growers mostly sell their cardamom to small traders outside the auction. The latter may directly sell the commodity to either the large traders or the exporters. Often, these small traders act as agents for large traders and exporters and advance money to small growers even before the crop season. The small traders generally do not put their cardamom purchases in auction which might help them to get a higher price realisation. This is partly because the sales tax of five per cent in Kerala is to be paid by those who sell

³See Chapter IV, Table 4.6.

cardamom in the auctions. In Karnataka and Tamilnadu, the purchase tax of four per cent is to be paid by the buyer who is usually the large trader or exporter. It is reported that large interstate movements of cardamom take place from Kerala to Tamilnadu through sales or just by smuggling them across the border to Bodinayakanur in Tamilnadu, which is the largest centre for cardamom trade in India. The other group of planters who sell cardamom directly to the large traders and exporters are the large growers in Kerala, who have good productivity and production.⁴ By direct sale of a certain portion of their production they derive two advantages. They save on the five per cent sales tax which they would have to pay otherwise. Also with such unaccounted sales, they are able to save on the agricultural income tax levied by the Government of Kerala.⁵ There are also instances in which the large growers of Kerala put up cardamom for sale in auctions in the name of small growers without their knowledge. This has led to situations where the small growers were assessed high agricultural income tax leading to tax litigations. This was referred to by the small growers themselves in the Memorandum submitted by the Small Growers' Association to the

⁴Reference is made to this in Chapter IV

⁵For details on taxes, See, Appendix III.

Cardamom Board in 1985. In this Memorandum, the small growers had pressed for the introduction of a Pass Book system for the sale of cardamom in auctions.⁶

It is difficult to get accurate statistics on the volume of direct sales in cardamom. The data on auction sales can be relied upon as they are based on the records kept by the auctioneers, the Cardamom Board and the State Governments. But, the same cannot be said about the estimates of production which are yet to acquire the required sophistication in techniques. The least reliable are the estimates of direct sales, which are obtained by the simple method of deducting the volume of auction sales from the estimates of production. As was noted above, direct sales are effected with the direct purpose of evasion of taxes. The result is that they are shrouded in complete secrecy.

The difficulty in depending upon the official statistics relating to direct sales was brought home to the Researcher during the course of an investigation conducted by him for this study. The Researcher came across a large grower, who is also one of the major exporters of cardamom from this country. He had exported 300 M.T.

⁶Memorandum submitted by the Cardamom Small Growers' Association of Kerala to Cardamom Board on 16th November, 1985.

of cardamom to the Middle East during the year 1984-85. He revealed that his own production during the year was 200 M.T. It can be assumed that of these 200 M.T. of production, 60 to 70 per cent or 120 to 140 M.T. was of exportable quality. Therefore, he might have purchased the balance quantity of cardamom required for export from the open market. Since cardamom is available only in bulk and export quality cardamom per se is not available in the market, this grower-exporter must have obtained 230 to 300 M.T. of bulk cardamom from the open market. Thus including his own production of 200 M.T. he must have had in hand 430 to 500 M.T. of bulk cardamom to make an export of 300 M.T. of cardamom. But, the fact is that there are no records at the auction centres that this particular grower-exporter had made any transaction through auction centres. His exports must have therefore been effected from direct sales and own production. It was revealing that transactions of this magnitude are effected through direct sales.

Official estimates of the total production, auction sales and direct sales are reproduced in Table 8.1. According to these estimates for 15 years from 1970-71 to 1984-85, it can be seen that auction sales are, on the average, 71 per cent of the total production. Twenty-nine per cent are thus credited to direct sales.

Table 8.1

Production, Auction Sales and Direct Sales of cardamom in India:

1970-71 to 1984-85

(Quantity in M.T.; Figures in brackets are percentages in total estimates of production)

Crop Year	Production (estimates)	Auction sales	Direct sales (estimates)	Average Auction price (Rs./kg.)
1970-71	3170	2608 (82)	562 (18)	58.76
1971-72	3785	3024 (80)	761 (20)	29.08
1972-73	2670	2048 (77)	622 (23)	49.70
1973-74	2780	1728 (62)	1052 (38)	60.05
1974-75	2900	1910 (66)	990 (34)	96.24
1975-76	3000	2174 (73)	826 (27)	86.45
1976-77	2400	1291 (54)	1109 (46)	156.75
1977-78	3900	2997 (77)	903 (23)	134.41
1978-79	4000	3353 (84)	647 (16)	166.42
1979-80	4500	3123 (69)	1377 (31)	134.88
1980-81	4400	3357 (76)	1043 (24)	98.91
1981-82	4100	3118 (76)	982 (24)	116.02
1982-83	2900	2020 (70)	880 (30)	161.08
1983-84	1600	967 (60)	633 (40)	370.49
1984-85	3900	2300 (59)	1600 (41)	199.91
Average		(71)	(29)	127.81

Source: Cardamom Board, Cochin.

It may further be noted from Table 8.1 that the volume of direct sales have steadily been on the increase in recent years.

It is also seen from these statistics that the volume of direct sales was higher when the price of cardamom was also higher. This could be on account of the fact that the five per cent sales tax would be in absolute terms quite considerable when the unit sales price is high. The agricultural income tax would also be proportionately higher when the sales price is higher. The urge to evade tax by effecting direct sales would then be stronger when the sales price is high. In addition, in direct sales, growers also save themselves of the one per cent commission which they would have to pay to the auctioneers in auction sales.

Based on personal investigations and the above logic of the system, it is only fair to assume that direct sales are much more than what is reported. It is likely to be far higher than what is shown in Table 8.1.

Discussions with sales tax authorities in Idukki district also confirmed that large quantities of unaccounted cardamom⁷ were taken to Bodinayakanur in

⁷For long, there have been allegations of large scale evasion of sales tax by the cardamom growers. This was particularly alleged against the large growers. A

Tamilnadu from Kerala through the lonely foot-paths in the thick tropical forests between the two States. This is reportedly considerably higher during years when higher prices prevailed for cardamom. It is needless to say that all these indicate that large quantities of cardamom were sold outside the cardamom auctions.

From the facts mentioned above, and from the field studies conducted by the Researcher it can be concluded that direct sales by the growers are atleast 30 per cent more than what was estimated in Table 8.1. This is further established from the investigations conducted regarding the internal movement of cardamom from Bodinayakanur and Virudhunagar.

The despatches of cardamom from Bodinayakanur and Virudhunagar to upcountry places from 1970-71 to 1984-85 are given in Table 8.2. It may be noted from this Table that during 1974-75, and 1984-85, despatches of cardamom from Bodinayakanur and Virudhunagar exceeded the total production of cardamom in Kerala and Tamilnadu. The possibility of the despatches of the carryover stock of the previous year has to be ruled out in the cases of

specific case of this kind came up in December 1986 when a sales tax party raided a large cardamom estate and seized some records. For details, see the Indian Express (Cochin), 15 December, 1985, p.5.

Table 8.2.

Despatches of cardamom from Bodinayakanur and Virudhunagar: 1970-71 to 1984-85

(Quantity in M.T.)

Crop Year	Bombay	Calcutta	Kanpur	Delhi	Others	Total	Kerala-Tamilnadu production	Difference in production and despatches
1970-71	NA	NA	NA	NA	NA	NA	2365	NA
1971-72	NA	NA	NA	NA	NA	NA	3165	NA
1972-73	1051	72	65	231	149	1568	1970	(+) 402
1973-74	916	84	48	166	299	1513	2180	(+) 667
1974-75	1840	347	117	440	393	3137	2350	(-) 787
1975-76	1515	267	105	308	495	2689	2350	(-) 339
1976-77	636	79	104	193	472	1383	1700	(+) 317
1977-78	2039	142	99	430	262	2972	3200	(+) 228
1978-79	716	253	132	301	1566	2968	3100	(+) 132
1979-80	144	4	8	14	3313	3483	3650	(+) 167
1980-81	161*	52*	51*	205*	554*	2782*	3400	NA
1981-82	NA	1318*	62*	102*	983*	2462*	3100	NA
1982-83	355	32	165	567	415	1534	2100	(+) 566
1983-84	262	19	54	321	183	839	1200	(+) 361
1984-85	2115	76	147	796	510	3644	3050	(-) 604

Note: NA - Not available; * - Incomplete figures.

Source: Director of Statistics, Government of Tamilnadu, Madras.

these three years in view of the fact that the previous years' production and off season (April to July) despatches were low. It is also illogical to assume that the entire production of cardamom in Kerala and Tamilnadu went to Bodinayakanur and Virudhunagar for trading. Kerala has producing areas in Wynad and Palghat districts and an auction centre in Cochin. These places are far away from Bodinayakanur. Therefore, some quantity of cardamom produced in Kerala could not have gone to Bodinayakanur and Virudhunagar for grading or despatches. There is, however, one possibility that some quantities of Coorg Green cardamom might have been brought from Mercara to Bodinayakanur by some traders for mixing with Alleppey Green cardamom for export. But, the prices of good grades of Coorg Green and Alleppey Green cardamoms were more or less equal, and no advantage was derived by mixing them. As far as, internal trade was concerned, there was no point in bringing bulk cardamom from Mercara to Bodinayakanur. This also strengthens the earlier conclusion that direct sales of cardamom outside the auction centres are definitely more than the figures given in Table 8.1.

Bodinayakanur: the nerve centre of cardamom trade

While discussing the marketing of Indian cardamom, whether it is export trade or domestic trade, the importance of Bodinayakanur in Tamilnadu is central.

Bodinayakanur is a small interior town in the Madurai district of Tamilnadu. It has a population of about 75,000. This place is the nerve centre of cardamom trade and export in India and handles about 80 per cent of the cardamom trade in the country every year. The development of this small town as the major commercial and exporting centre of cardamom has its own reasons. Though cardamom cultivation is concentrated in the Idukki district of Kerala, owners of the plantations - both small and big - belong to Bodinayakanur and surrounding places in the Madurai district of Tamilnadu. The reasons for this were traced in Chapter IV. Moreover, the distance from the Cardamom Hills of Idukki district to Bodinayakanur is only less than 40 kilometres. There are two good roads, one from Vandanmedu and another from Santhanpara in Kerala to Bodinayakanur. Vandanmedu and Santhanpara are also connected each other by a good road. If the foot path through the forest is taken, the distance from Cardamom Hills to Bodinayakanur is only five kilometres. Bodinayakanur has a dry climate all through the year which prevents moisture absorption in dried cardamom capsules. Labour cost is also extremely cheap for grading and packing of cardamom in Bodinayakanur. In January 1985, it was only Rs.8 per eight hours per worker.

Skilled casual labourers, especially women, are available in plenty for grading and the cleaning of cardamom.

Banking facilities, pre-shipment inspection for quality control, telex, international subscriber dialling and other facilities are available at Bodinayakanur.

The cardamom produced in Karnataka is mainly handled by traders and exporters in Mangalore, Saklespur and Mercara. There is thus no concentration in one place, of the primary trade of cardamom in Karnataka. This is different from the cardamom trade of Kerala and Tamilnadu.

Internal consumption

The estimates of production, export and internal consumption of cardamom from 1970-71 to 1984-85 are given in Table 8.3 and 8.4. Here, the internal sales of cardamom of a particular year is estimated by the simple method of deducting the export sales of cardamom from the estimates of production. This is because of the absence of any reliable means of collecting data on the internal sales of cardamom in the country. It is overdue that the Cardamom Board should take immediate steps to gather this data on internal marketing, in order that an appropriate, long-term marketing strategy for cardamom can be developed within the country. Such data

Table 8.3

Production, Export and internal consumption of cardamom : 1970 - 71 to 1984 - 85
(Quantity in M.T.; Figures in brackets are percentages in total estimates of production)

Year	Crop year production (estimates)	Crop year export	Crop year internal consumption (estimates)	Financial year export	Financial year internal consumption (estimates)
1970-71	3170 (100)	1977 (62)	1193 (38)	1705 (54)	1465 (46)
1971-72	3785 (100)	2245 (59)	1540 (41)	2147 (57)	1638 (43)
1972-73	2670 (100)	1337 (50)	1333 (50)	1384 (52)	1286 (48)
1973-74	2780 (100)	1747 (63)	1033 (37)	1813 (65)	967 (35)
1974-75	2900 (100)	1473 (51)	1437 (49)	1626 (56)	1274 (44)
1975-76	3000 (100)	1898 (62)	1102 (38)	1941 (65)	1059 (35)
1976-77	2400 (100)	1179 (49)	1221 (51)	893 (37)	1507 (63)
1977-78	3900 (100)	2763 (71)	1137 (29)	2763 (71)	1137 (29)
1978-79	4000 (100)	2691 (73)	1098 (27)	2876 (72)	1024 (28)
1979-80	4500 (100)	2691 (60)	1806 (40)	2636 (59)	1864 (41)
1980-81	4400 (100)	2288 (52)	2112 (48)	2345 (53)	2055 (47)
1981-82	4100 (100)	1883 (46)	2217 (54)	2325 (57)	1775 (43)
1982-83	2900 (100)	927 (32)	1973 (68)	1032 (36)	1788 (64)
1983-84	1600 (100)	527 (33)	1073 (67)	258 (16)	1342 (84)
1984-85	3900 (100)	2569 (66)	1331 (34)	2383 (61)	1519 (39)
Average	(100)	(55)	(45)	(54)	(46)

Note: Estimates of production for financial year are not available.

Source: Cardamom Board, Cochin.

Table 8.4.

State-wise-variety-wise production, export and internal consumption of cardamom: 1970-71 to 1984-85

(Quantity in M.T.)

Year	Kerala-Tamilnadu production (estimates)	Alleppey Green, Mixed & seeds Exports	Karnataka production (estimates)	Coorg Green/bleached/bleachable Exports	Alleppey Green internal consumption (estimates)	Coorg Green/bleached/bleachable internal consumption (estimates)	Total internal consumption (estimates)
1970-71	2365	1554	805	151	811	654	1465
1971-72	3165	1844	620	303	1321	317	1638
1972-73	1970	1175	700	209	795	491	1286
1973-74	2180	1633	600	180	547	420	967
1974-75	2350	1322	550	304	1028	246	1274
1975-76	2350	1839	650	102	511	548	1059
1976-77	1700	819	700	74	881	626	1507
1977-78	3200	2624	700	139	576	561	1137
1978-79	3100	2798	800	78	302	722	1024
1979-80	3650	2529	850	107	1121	743	1864
1980-81	3400	2231	1000	114	1169	886	2055
1981-82	3100	2205	1000	120	895	880	1775
1982-83	2100	1054	800	38	1046	742	1788
1983-84	1200	228	400	30	972	370	1342
1984-85	3050	2325	850	56	725	794	1519

Note: Estimates of production are for Crop Year; Export is for Financial Year.

Source: Cardamom Board, Cochin.

collection should include information on the volume of sales in different parts of the country, the different product uses etc.

From Table 8.3 and 8.4 it can be seen that on an average, the internal consumption of cardamom over a period of 15 years from 1970-71 to 1984-85 was 45 to 46 per cent of the estimated production in the country. Cardamom was not imported into India even when the domestic prices skyrocketed in 1983-84, due to acute shrinkage in Indian production.

From Tables 8.3 and 8.4 it can be seen that the estimated domestic sales or consumption of cardamom ranged between 1033 M.T. in 1973-74 crop year, and 2217 M.T. in the 1981-82 crop year. Export commitments are made during the peak harvest season itself. The balance of the crop after export sales are available for domestic sales or consumption. But even when the domestic availability of cardamom was high, prices were maintained at a high level,⁸ keeping pace with the export prices of cardamom. The price of cardamom in the domestic market is influenced by export price. The price in the domestic market is inelastic with regard to the supply in the

⁸See, Table 8.1 (prices) with Table 8.3¹ (internal sales).

domestic market. Research investigations have shown that cardamom is well known in India, and that people of India use cardamom in one form or other. However, the per capita consumption of cardamom is very low in India compared to that in Saudi Arabia, Kuwait and other Middle East countries.⁹ Thus, the per capita expenditure on cardamom in a particular month or year is negligible in India, even when prices rule high. In other words, there can be no easy co-relation between the prices of cardamom and its consumption within the country as long as the prices stay within a particular range.

The Cardamom Board conducted a market survey on cardamom in India during May-July 1978. The survey team visited 55 towns in India. It estimated that internal consumption of cardamom was over 1400 M.T. during the crop year 1977-78.¹⁰ But as per Table 8.3, the estimate of internal consumption for the same year was only 1137 M.T. As noted earlier, the internal consumption is seen high even in years when price levels remained high. It may be seen from Table 8.3 that in 1981-82, internal consumption of cardamom was of the order of 2217 M.T. against an estimated production of 4100 M.T. In 1984-85, the

⁹See Chapter IX

¹⁰Cardamom Board, Market Survey of cardamom in selected markets in India, (Cochin, 1980), p.21.

estimated internal consumption was 1331 M.T. against the estimated production of 3900 M.T. The internal prices were also comparatively high during the years 1981-82 and 1984-85.

During the year 1976-77, Government of India imposed an export duty at the rate of Rs.50/- per kilogram of cardamom exports. This remained in force from 12.1.1977 to 24.2.1977. Consequently, there was no export of cardamom during February 1977. In the 1976-77 crop year, the export thus came down to 1179 M.T. as against 1898 M.T. in the 1975-76 crop year. Internal sales estimates for 1976-77 was 1221 M.T. as against the sales of 1102 M.T. in 1975-76. The auction price of 1976-77 was Rs.156.75 per kilogram against the auction price of Rs.86.45 in 1975-76, further indicating that there is no co-relation between the price of cardamom and its consumption in India, and that the internal sale and consumption of cardamom in India is more than what is estimated in Table 8.3.

Traditionally consumption of cardamom has been highest in the Middle East countries. The market survey conducted by the Cardamom Board in 1978 revealed that consumption of cardamom is comparatively higher in Hyderabad, Bhopal, Agra and Lucknow. These are areas

of higher concentration of Muslims in the population. India used to export cardamom to Pakistan before the Indo-Pakistan war of 1971. India's trade relations with Pakistan were not as bad as they became subsequently. After the war, trade with Pakistan deteriorated. There is good demand for cardamom in Pakistan. Pakistan imports Indian cardamom from other countries. There is an import duty of 200 per cent on cardamom in Pakistan. In addition, there is a sales tax of six per cent. This has led to large scale smuggling of cardamom into Pakistan from India through land routes via Amritsar in India. The large scale movements of cardamom from Bodinayakanur and Virudhunagar to Delhi¹¹ and Amritsar are likely to be on account of this smuggling. There are also reports of smuggling of cardamom from India to Afghanistan and Bangladesh. Unaccounted sales of cardamom at the producing centres move to the upcountry consuming centres in India and even the neighbouring countries.

While discussing the auction sales and direct sales by the growers, it was mentioned that the direct sales of cardamom are atleast 30 per cent more than what were estimated in Table 8.1.¹² It seems safe to conclude

¹¹See, Table 8.2, p.206 above.

¹²See, Table 8.1 , p.203 above.

that the estimates of internal sales on consumption of cardamom in India are also at least 30 per cent higher than that estimated in Table 8.3.

The channels of distribution of cardamom in the domestic market were discussed in Chapter VI¹³. It was seen that there are at least five intermediaries between the grower and the ultimate user.

Reliable data on wholesale prices and consumer prices of cardamom in the upcountry markets and the main consuming centres are absent. Investigations conducted by the Researcher in New Delhi in April 1985 showed that the wholesalers take a margin of about 15 per cent of their purchase price. Consumers were mostly buying cardamom in quantities of 25 grams and 50 grams. Consumers' price in New Delhi worked out to Rs.400 to Rs.450 per kg. This was when growers received a price averaging Rs.200/- per kilogram. The multiplicity of intermediaries and their margins of profit coupled with handling expenses, octroi, State sales tax, etc. account for this large difference between the original sales price of growers and the ultimate retail price of consumers.

¹³See Chapter VI

Field investigations in New Delhi also revealed that cardamom sales in consumer packs, and as powder, oil, oleoresins, etc. were almost non-existent. Sales promotion activities by Cardamom Board or by any other private agency were also found to be nil. However, the manufacturers of cardamom flavoured-branded products like Complian, Horlicks, True Biscuits, etc. were found to be undertaking some indirect promotional activities for cardamom while trying to promote their own products.

It appears safe to believe that there is a large potential market for cardamom within the country. In the context of the threats to India's export trade in cardamom and the possibility of increasing production through raising productivity, it appears imperative that the industry adopts immediate measures to promote the marketing of cardamom within the country. There is a good deal that the Cardamom Board can do in this respect. Reference was made earlier about the urgent necessity for the adoption of sophisticated and reliable techniques for collecting accurate statistics on the production and consumption of cardamom. The Cardamom Board may similarly undertake comprehensive consumer survey, based on which a scientific marketing strategy can be designed.

The strategy for marketing cardamom in India essentially lies in policies and programmes that will lead to proper control of the entire marketing system, starting from the purchase of cardamom from the grower to the sale of cardamom and cardamom products to the consumer.

The present auction system and the credit extended by the growers to the traders and exporters are beset with several problems. Investigations have shown that the indirect credit extended by the growers sometimes go beyond six months. This aggravates the economic condition of the growers. The exporters and traders are often carrying on their business with little investment by themselves and at the cost of the growers. The growers' co-operatives or government agencies like the Cardamom Trading Corporation or the Cardamom Board would be well advised to take over the function of auctioning, replacing the existing private agencies, so that the interests of the small growers can be protected. The grading of cardamom can be simplified by reducing their number and the growers may be encouraged to bring graded cardamom to the auctions. This will eliminate the errors in the visual assessment of quality by the traders and exporters, and encourage speedy export of cardamom, as exporters need not then spend any time in grading cardamom in their godowns.

The sale of graded cardamoms would also encourage the growers to produce better quality cardamoms as this would enable them to realise that higher grades of cardamom fetch higher prices in the auctions. The Cardamom Board and the Government of India can also consider the fixing of minimum floor prices for different grades of cardamom, so that the growers are assured of a remunerative price for their produce. This would encourage investments for increasing the quality and productivity of cardamom. The present credit system in auctions may be abolished and a 'cash and carry system' may be brought in to safeguard the interests of the growers.

Taxation of cardamom by the State governments needs review at the earliest. The sales tax system in Kerala puts a heavy burden on the growers and encourages unaccounted sales by them. Uniform systems of taxation may be introduced in the producing States of Kerala, Karnataka and Tamilnadu. It may also be considered whether the responsibility for paying the sales tax be shifted to the traders and exporters whose profit margins stay steady irrespective of the prices, whose investments and efforts are less and whose economic condition is better than that of the growers. Exemption of sales tax for the exported quantity of cardamom as provided

under Section 5 (3) of the Central Sales Tax Act may also help to make Indian cardamom more competitive in the international markets. At present the sales tax exemption facility on export is not availed of by the growers or exporters because of the peculiar system of sales tax collection in Kerala.

The Cardamom Board may licence the wholesale dealers in upcountry markets in India to regulate the internal trade of cardamom in India and encourage fair trade practices for protecting the interests of the consumers. This would also help the Board to collect statistics on internal trade of cardamom in India.

Research on consumer products with cardamom flavour may be undertaken or encouraged by the Cardamom Board. The Board may also launch generic promotional activities for cardamom, highlighting its medicinal and other properties. Marketing of cardamom in attractive consumer packs and as powder, cardamom oil, oleoresins, etc. may be encouraged. In short, the cardamom trade in India requires a shift in emphasis from selling to marketing so that the internal consumption of cardamom in the country can be increased.

CHAPTER IX

THE EXPORT TRADE OF CARDAMOM

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CHAPTER IX

THE EXPORT TRADE OF CARDAMOM

This chapter analyses India's export of cardamom for the 20 year period from 1965 to 1985. Though only limited data is available, efforts have also been made to trace cardamom exports from 1900 to 1965.

Cardamom Exports 1900-1965

India exported 86.7 tons of cardamom during 1899-1900. This increased to 137 tons in 1902-03 and 841 tons in 1919-20, after which, exports showed a sharp decline.¹ However, it registered a gradual recovery by reaching 883 tons in 1939-40. There was a set back again during World War II, when the European markets were closed. Exports were resumed from 1945-46 onwards.

The principal importing countries before World War II were Arabia, Sweden, Germany, U.K. and U.S.A. Arabia and Sweden were the principal importers during the period 1945-46 to 1959-60. With the emergence of Guatemala and Tanzania as major exporters of cardamom, the export of cardamom from India to Europe and U.S.A.

¹Council of Scientific and Industrial Research, The Wealth of India, Vol. III (New Delhi, 1952) p.159.

gradually declined. However, cardamom exports from India to the Arab nations remained steady and strong in these years.

The average exports of cardamom for the five year periods from 1930-31 to 1964-65 were as follows.

Table 9.1

Export of cardamom from India: 1930-31 to 1964-65

Period	Quantity (Average) (M.T.)	Value (Averages) (Rs./crores)	Unit price (average) (Rs./kg.)
1930-31 to 1934-35	504	0.17	3.47
1935-36 to 1939-40	642	0.24	3.74
1940-41 to 1944-45	443	0.23	5.19
1945-46 to 1949-50	859	0.70	8.15
1950-51 to 1954-55	842	1.55	18.41
1955-56 to 1959-60	1394	2.85	20.45
1960-61 to 1964-65	1853	3.17	15.40

Source: 1. Marketing Research Corporation of India: Survey of India's Export Potential of Spices (New Delhi, 1968) p.B-36.
2. Cardamom Board, Cardamom Statistics - 1960-61 to 1974-75 (Cochin, 1976) p.6.

From Table 9.1 above, it can be seen that from an average export of 504 M.T. valued at Rs.0.17 crores per year for the period 1930-31 to 1934-35, India's export of cardamom reached an average of 1853 M.T. valued

at Rs.3.17 crores during the period 1960-61 to 1964-65. The Table also shows that but for the periods 1940-41 to 1944-45 and 1950-51 to 1954-55, when exports fell marginally, there has been gradual increase in the quantity and value of cardamom exports.

A study of the export prices of cardamom shows that the export price of cardamom rose after the World War I, reaching a peak in 1925. This was followed by a decline, and the price reached a low level in 1931. It remained so till 1936, when a recovery occurred with the outbreak of World War II. The prices began to soar again, reaching a peak in 1943. "A fair harvest in 1943-44, a bumper harvest in 1944-45 and the promulgation of Spices Control Order by the Government of India on 1st January 1944 prohibiting free exports resulted in a slump. The prices declined to Rs.1.48 from Rs.1.97 per kilogram in all markets during 1944-45 as compared to prices in 1943-44"² During the period from 1944-45 to 1949-50 the prices rose steeply again due to fall in production. During the period 1950-51 to 1959-60, the prices stood more or less steady with a high price realisation. The prices crashed again during the period 1960-61 to 1964-65 due to bumper production of cardamom in the country.

²Ibid., p.160.

The pattern of exports indicated that between 1950-51 to 1954-55 and 1960-61 to 1964-65, there has been a 154 per cent increase in quantity and 106 per cent increase in value of cardamom exports. In the earlier decade of 1940-41 to 1954-55, the increases in quantity and value were 90 per cent and 574 per cent respectively. Thus there was a rising trend for exports of cardamom both in terms of quantity and value till 1964-65.

The export markets for India's cardamom changed basically in the post World War II period from what they were in the 1930s. Europe, the U.K and the U.S.A. accounted for 67 per cent of India's export market for its cardamom in the period 1930-31 to 1934-35, whereas it was only about 22 per cent of the total exports during the period 1960-61 to 1964-65. This shift in the direction of trade took place in the period 1940-41 to 1944-45 when the Middle East countries commenced large imports of Indian cardamom. During this period, about 38 per cent of India's exports went to Kuwait, Saudi Arabia and Bahrain. The Middle East continued to be the major buyers of Indian cardamom during the period 1960-61 to 1964-65. During this period, these three Middle Eastern countries together accounted for about 40 per cent of India's total cardamom exports. The principal reason for this shift from Europe and U.S.A. was the higher price that the

Middle East market was willing to pay for cardamom. This was made possible by the Middle East countries consequent upon the discovery of oil in the area. The supplies from Guatemala, Sri Lanka and Tanzania were also very much limited during these years. The nearness of India to the Middle East compared to Guatemala was another contributing factor for increased exports of cardamom from India to the Middle East. Available statistics indicate that the Middle East nations bought more of the Alleppey Green cardamoms compared to other varieties, even when those countries stepped up the imports of cardamom from India.

On an average, Guatemala was producing about 600 M.T. of cardamom during the period 1960-61 to 1964-65. For various reasons, Guatemala was able to take over the market for cardamom in Europe and U.S.A.

Volume of Exports

The volume of exports of cardamom from India has shown a mixed trend over the last 20 years, from 1965-66 to 1984-85. The mixed trend was mainly on account of the varying trends in the total production of cardamom in India and the increased competition from Guatemala.

Exports of cardamom from India, zone-wise, quantity-wise, value-wise, etc. from 1965-66 to 1984-85 are given in Tables 9.2, 9.3 and 9.4.

Table 9.2

Production and export of cardamom from India: 1965-66 to
1984-85

Year	Production	Auction	E x p o r t s		
	Quantity (M.T.)	unit price (Rs./kg.)	Quantity (M.T.)	Value Rs./Cr.	Unit price (Rs./kg.)
1965-66	2000	43.61	1134	4.23	37.28
1966-67	2700	42.30	1590	7.96	50.04
1967-68	2400	42.46	1451	7.03	48.42
1968-69	2100	50.25	1291	6.74	52.18
1969-70	2300	78.03	1149	8.93	77.70
1970-71	3170	50.77	1705	11.22	65.78
1971-72	3785	29.08	2147	8.03	37.41
1972-73	2670	49.69	1384	6.85	49.45
1973-74	2780	60.05	1813	11.55	63.71
1974-75	2900	76.24	1626	13.32	81.92
1975-76	3000	86.45	1941	19.38	99.88
1976-77	2400	156.75	893	14.03	157.17
1977-78	3900	134.41	2763	48.44	175.28
1978-79	4000	166.42	2876	58.35	202.92
1979-80	4500	134.88	2636	48.56	184.23
1980-81	4400	98.91	2345	34.75	148.18
1981-82	4100	116.02	2325	30.20	129.87
1982-83	2900	161.08	1032	16.37	158.60
1983-84	1600	370.49	258	5.44	210.92
1984-85	3900	199.91	2383	64.81	271.92

Note: Production is for crop year (August to July) and export is for financial year (April to March)

Source: Production: Cardamom Board, Cochin.
Export: 1. 1965-66 to 1975-76: D.G.C. I & S, Calcutta,
2. 1976-77 to 1984-85: Cardamom Board, Cochin.

Table 9.3

Quantity-wise, Zone-wise export of cardamom from India: 1965-66 to 1984-85

(Quantity in M.T., Figures in brackets are percentages in total)

Financial year	Middle East Zone	European Zone	East Asia Zone	African Zone	American Zone	Australia Zone	Total (including Others)
1965-66	730 (64.4)	239 (21.1)	157 (13.5)	9 (0.79)	2 (0.18)	1 (0.09)	1134 (100)
1966-67	960 (60.4)	499 (31.4)	95 (5.9)	10 (0.63)	25 (1.60)	1 (0.06)	1590 (100)
1967-68	1015 (69.9)	362 (24.9)	53 (3.7)	8 (0.55)	12 (0.83)	1 (0.07)	1451 (100)
1968-69	938 (72.7)	236 (18.3)	91 (7.0)	10 (0.77)	8 (0.62)	1 (0.08)	1291 (100)
1969-70	907 (78.3)	161 (14.0)	73 (6.4)	1 (0.09)	4 (0.35)	1 (0.09)	1149 (100)
1970-71	1313 (77.0)	234 (13.7)	125 (7.3)	6 (0.35)	24 (1.40)	3 (0.18)	1705 (100)
1971-72	1690 (78.7)	280 (13.0)	143 (6.7)	7 (0.33)	24 (1.10)	3 (0.13)	2147 (100)
1972-73	991 (71.6)	266 (19.2)	107 (7.7)	3 (0.22)	13 (0.94)	1 (0.07)	1384 (100)
1973-74	1525 (84.1)	169 (9.3)	108 (5.9)	4 (0.22)	6 (0.33)	1 (0.06)	1813 (100)
1974-75	1022 (62.9)	472 (29.0)	115 (7.1)	8 (0.49)	6 (0.37)	1 (0.06)	1626 (100)
1975-76	1607 (82.8)	231 (11.9)	90 (4.6)	4 (0.21)	8 (0.41)	1 (0.05)	1941 (100)
1976-77	602 (67.4)	196 (21.9)	90 (10.0)	1 (0.11)	3 (0.34)	1 (0.11)	893 (100)
1977-78	2491 (90.2)	137 (4.9)	121 (4.4)	@ ()	13 (0.47)	1 (0.04)	2763 (100)
1978-79	2487 (86.5)	282 (9.8)	99 (3.4)	1 (0.03)	7 (0.24)	@ ()	2876 (100)
1979-80	2208 (83.8)	303 (11.5)	118 (4.5)	1 (0.04)	5 (0.19)	1 (0.04)	2636 (100)
1980-81	1964 (83.8)	231 (9.8)	126 (5.4)	14 (0.60)	8 (0.34)	2 (0.09)	2345 (100)
1981-82	1789 (76.9)	389 (16.7)	137 (5.9)	3 (0.13)	7 (0.30)	@ ()	2325 (100)
1982-83	629 (60.9)	336 (32.6)	64 (6.2)	2 (0.19)	1 (0.09)	@ ()	1032 (100)
1983-84	8 (3.1)	193 (74.8)	50 (19.4)	3 (1.2)	4 (1.60)	@ ()	258 (100)
1984-85	1799 (75.5)	430 (18.0)	47 (1.9)	2 (0.08)	5 (0.21)	@ ()	2383 (100)
Average	(71.6)	(20.3)	(6.8)	(0.30)	(0.60)	(0.09)	(100)
Average except 1983-84	(75.1)	(17.4)	(6.2)	(0.25)	(0.54)	(0.09)	(100)

Note: @: Negligible.

Source: 1. 1965-66 to 1975-76: D.G.C.I & S, Calcutta.
2. 1976-77 to 1984-85: Cardamom Board, Cochin.

Table 9.4

Value-wise, zone-wise export of cardamom from India, 1965-66 to 1984-85

(Value in Rs./'000; Figures in brackets are percentages in total)

Financial year	Middle East Zone	European Zone	East Asia Zone	African Zone	American Zone	Australian Zone	Total (including others)
1965-66	29902 (70.7)	8694 (20.6)	3268 (7.7)	309 (0.73)		24 (0.06)	42270 (100)
1966-67	49410 (62.1)	24059 (30.2)	4094 (5.1)	481 (0.60)		66 (0.08)	79557 (100)
1967-68	51116 (72.8)	16140 (22.9)	1965 (2.8)	332 (0.47)		50 (0.07)	70261 (100)
1968-69	50909 (75.6)	11490 (17.1)	3647 (5.4)	516 (0.77)	342 (0.51)	47 (0.07)	67366 (100)
1969-70	72043 (80.7)	11922 (13.3)	4701 (5.3)	100 (0.11)	171 (0.19)	39 (0.04)	89312 (100)
1970-71	89083 (79.4)	13764 (12.3)	7478 (6.7)	351 (0.31)	1282 (1.10)	102 (0.18)	112160 (100)
1971-72	66803 (83.1)	7999 (9.9)	199 (5.2)	274 (0.03)	926 (1.20)	106 (0.13)	80307 (100)
1972-73	52506 (76.7)	11764 (17.2)	3307 (4.2)	136 (0.19)	599 (0.87)	69 (0.10)	68465 (100)
1973-74	101397 (87.8)	8713 (7.5)	4730 (4.1)	231 (0.19)	391 (0.34)	65 (0.06)	115528 (100)
1974-75	90792 (68.1)	33200 (24.9)	4798 (3.6)	771 (0.59)	574 (0.43)	52 (0.04)	133232 (100)
1975-76	167644 (86.5)	18132 (9.4)	6656 (0.3)	414 (0.21)	931 (0.48)	60 (0.03)	193837 (100)
1976-77	98097 (69.9)	29539 (21.0)	12038 (8.6)	80 (0.06)	475 (0.34)	85 (0.06)	140314 (100)
1977-78	44775 (92.4)	17882 (3.7)	16078 (3.3)	101 (0.02)	2430 (0.50)	119 (0.02)	484363 (100)
1978-79	530324 (90.8)	37164 (6.4)	14511 (2.5)	159 (0.03)	1330 (0.23)	48 (0.01)	583536 (100)
1979-80	424890 (87.5)	42669 (8.8)	16709 (3.4)	214 (0.04)	937 (0.19)	126 (0.03)	485581 (100)
1980-81	306220 (88.1)	25762 (7.4)	12453 (3.6)	1639 (0.47)	2234 (0.64)	231 (0.07)	347539 (100)
1981-82	254216 (84.2)	33367 (11.0)	12983 (4.3)	397 (0.13)	990 (0.33)	16 (0.01)	301969 (100)
1982-83	107309 (65.6)	47194 (28.8)	8643 (5.3)	387 (0.24)	157 (0.09)	⊙ (⊙)	163690 (100)
1983-84	1764 (3.2)	37979 (69.8)	12659 (23.3)	789 (1.40)	1232 (2.30)	⊙ (⊙)	53423 (100)
1984-85	486041 (75.0)	130822 (20.2)	28996 (4.5)	508 (0.09)	1675 (0.26)	11 (⊙)	648053 (100)
Average	(75.0)	(12.9)	(5.5)	(0.33)	(0.50)	(0.06)	(100)
Average except 1983-84	(78.8)	(9.9)	(4.4)	(0.28)	(0.40)	(0.06)	(100)

Note: ⊙ : Negligible.

Source: 1 : 1965-66 to 1975-76: D.G.C. I & S., Calcutta.
2 : 1976-77 to 1984-85: Cardamom Board, Cochin.

Even though India had remained the major supplier of cardamom to the world markets for centuries, she was not able to increase her exports, when the world trade in cardamom increased. In absolute terms, Indian exports showed a declining trend in the early eighties. The total export of cardamom from India in 1965-66 was 1134 M.T. constituting more than 65 per cent of the world export.³ In 1970-71, Indian exports increased to 1705 M.T., but India's share in total world exports declined to 55 per cent. Cardamom exports from India hit an all time record in 1978-79 with 2876 M.T., which was the highest quantity ever exported by India upto 1984-85. Indian exports during that year was 2876 M.T., but this was only 52 per cent of the total world exports, indicating the gradual decline in the market share of India. The total value realised during 1978-79 was Rs.58.35 crores, which was also an all time record till 1978-79. However, both in the volume of exports and export earnings decline was registered thereafter. The years 1982-83 and 1983-84 were the worst years for the cardamom industry of India, when the total production, productivity and exports were all very low. In 1984-85, production and export again picked up and the exports reached a level of 2383 M.T. valued at Rs.64.81 crores. Earningswise this was an all time record, but quantitywise, Indian exports were only 34 per cent of total world trade in cardamom.

³For details, see Chapter III.

Till 1974-75, quantitywise India had been able to keep her exports above 40 per cent of total world exports, and above 53 per cent of total world production. Since 1975-76, Guatemala became the major competitor for India in the world cardamom market. From 1976-77, except for the three years of 1977-78 to 1979-80, Guatemala continued to be the largest exporter of cardamom in the world. In 1982-83, the share of Guatemala was as high as 68 per cent, while that of India was only 20 per cent. In 1983-84, the worst year for the cardamom industry in India, the share of Guatemala in the world export was 85 per cent and that of India was just five per cent. The sharp decline in production due to severe drought during this year resulted in a very low export of 258 M.T., and a very high domestic price. Even the export of 258 M.T. in 1983-84 was made possible by exporting 171 M.T. to East European countries through bilateral trade agreements and 72 M.T. to West Europe and East Asia.⁴ The export to the Middle East dwindled down to a mere eight M.T. during 1983-84. However, in 1984-85, there was a significant improvement in production as well as of exports, increasing the Indian share in the

⁴The export of 171 M.T. to East European countries occurred in the April-July 1983 period, and this quantity and its price related to the crop of 1982-83 season.

total world trade to 39 per cent and pegging Guatemala's at 51 per cent. The exports of cardamom from Sri Lanka and Tanzania had also fluctuated, but the fluctuations were not as large as those of Indian exports.⁵

Regionwise Analysis of Exports

As can be noticed from Tables 9.3 and 9.4, the most important market for Indian cardamom has been the Middle East, which accounted for more than 75 per cent of the total exports from India. In 1965-66, Indian exports to the Middle East region constituted 64.4 per cent of the total exports from the country and 70.7 per cent of the total value. During this year, the quantity of exports from India to Europe was 21.1 per cent, to East Asia 13.5 per cent, to Africa 0.8 per cent, to the American continent 0.2 per cent, and to Australia and New Zealand 0.1 per cent. Value-wise, the share was 20.6 per cent to the European region, 7.7 per cent to the East Asia region and 0.73 per cent to the African region. The share of the American and Australian regions was negligible. In 1977-78, over 90 per cent of India's export of cardamom was to the Middle East region, fetching more than 92 per cent of the export earnings for that year. As noted earlier, these were all time records in

⁵For details, See Chapter III.

quantity and value of Indian exports of cardamom to the Middle East countries. However, after 1979-80, the exports of cardamom to the Middle East registered a decline. As could be seen from Table 9.4, Indian exports to the Middle East was only 3.1 per cent (8 M.T.) of our total exports of 258 M.T. in 1983-84, whereas Europe accounted for 74.8 per cent (193 M.T.), East Asia 19.4 per cent (50 M.T.) and other countries 2.7 per cent (15 M.T.). The requirements of the Middle East were almost completely met by Guatemala during 1983-84.

Excluding the worst year of 1983-84, quantity-wise, on an average, for the last 19 years from 1965-66 to 1984-85, the Middle East region's share of imports of cardamom from India was 75.1 per cent of total Indian exports of cardamom followed by the European region (17.4 per cent), the East Asian region (6.2 per cent) and other countries (1.3 per cent) as could be seen in Table 9.3. Earningswise, the Middle East region accounted for 78.8 per cent, the European region for 9.9 per cent, the East Asian region for 4.3 per cent and other countries for 7.0 per cent.

Country-wise exports of Indian cardamom to the different countries of the Middle East, Eastern Europe and Western Europe and the unit prices of cardamoms exported to the different regions from 1965-66 to 1984-85 are given in Table 9.4.

For the 19 years from 1965-66 to 1984-85, excepting 1983-84, on the average, Kuwait bought 34.21 per cent of Indian cardamom, while Saudi Arabia purchased 28.58 per cent. Thus, on the average, Kuwait and Saudi Arabia together accounted for 62.79 per cent of the cardamom exports from India for the above period. This shows the absolute dependence of the Indian cardamom industry upon the imports by Kuwait and Saudi Arabia. Qatar's share was 2.95 per cent, Bahrain's 2.73 per cent, U.A.E.'s 1.74 per cent, Iran's 1.53 per cent and Iraq's 1.11 per cent. Exports to Kuwait ranged from 24 per cent in 1965-66 and 1984-85 to 45 per cent in 1977-78 of India's total exports, while the exports to Saudi Arabia ranged from 17 per cent in 1976-77 to 38 per cent in 1980-81. U.A.E. was not directly importing cardamom from India till 1969-70. It emerged as a major direct importer of Indian cardamom only after 1970-71. In 1970-71, U.A.E. imported 14 M.T. which was one per cent of Indian exports. This went upto 109 M.T. or four per cent in 1978-79, but remained at 73 M.T. or three per cent in 1984-85. Jordan imported 4 M.T. in 1971-72, but this rose to 130 M.T. or six per cent in 1981-82 and 56 M.T. or two per cent in 1984-85.

Price-wise, the Saudi Arabian imports have been the highest, followed by Bahrain and Kuwait. This

has been mainly on account of the fact that these countries mostly imported the higher grades of cardamom in large quantities. This point is discussed further in the later parts of this chapter.

When Indian exports to the European markets were examined, it was seen that, on an average, the East European countries and U.S.S.R. accounted for 11.53 per cent of India's exports, whereas the West European countries bought on an average only 5.89 per cent during this 19 year period from 1965-66 to 1984-85. The changing pattern of trade with the communist bloc countries and the non-communist countries in Europe in the cardamom exports of India during the period is indicated by the fact that in communist block accounted for 48 M.T. or four per cent of Indian cardamom exports while the non-communist bloc imported 191 M.T. or 17 per cent. The situation was reversed by 1984-85, when the East European countries and the Soviet Union bought 409 M.T. or 17 per cent and the West European countries bought only 21 M.T. or one per cent of India's cardamom exports. During the period 1965-66 to 1984-85, the highest purchase by the West European countries was in 1966-67 amounting to 351 M.T., constituting 22 per cent of Indian exports during that year.

A close look at the Table 9.5 reveals that Indian exports to the West European countries came down drastically year after year starting with 231 M.T. or 16 per cent in 1967-68 and declining to a level of 21 M.T. or one per cent in 1984-85. On the other side, during the period 1965-66 to 1984-85, the highest purchase, percentagewise by the communist bloc was in 1983-84, amounting to 171 M.T. or 66 per cent of India's total exports during the year. This was followed by 409 M.T. in the next year, constituting 17 per cent. In other words, while Indian exports to the communist countries in Europe was only 48 M.T. or four per cent in 1965-66, it rose gradually to 409 M.T. or 17 per cent in 1984-85. Among the communist countries of Europe, U.S.S.R. and East Germany remained the major buyers of Indian cardamom. Among the West European countries, U.K., West Germany and Netherlands were the main buyers.

When the Indian exports to the Middle East countries and to the European countries are compared, it can be seen that in 1965-66 Indian exports to the Middle East amounted to 64 per cent of her total exports. The European countries - communist and non communist - accounted for 21 per cent, comprising four per cent by the East European countries and U.S.S.R., and 17 per cent

Table 9.5

Zone-wise, Country-wise exports of cardamom from India: 1965-66 to 1984-85.
(Quantity in M.T., Unit price in Indian Rs/Kg., Figures in brackets are percentages in Total)

Countries	1965-66		1966-67		1967-68		1968-69		1969-70		1970-71	
	Quantity	Unit price	Quantity	Unit price	Quantity	Unit price	Quantity	Unit price	Quantity	Unit price	Quantity	Unit price
Middle East Countries												
Saudi Arabia	358 (32)	42.06	365 (23)	51.87	328 (23)	53.68	288 (22)	58.26	375 (33)	80.94	537 (32)	70.88
Kuwait	267 (24)	40.26	393 (25)	51.52	537 (37)	48.83	529 (41)	53.12	426 (36)	79.96	577 (34)	65.59
Bahrain	21 (2)	42.10	57 (4)	51.86	36 (2)	52.16	37 (3)	53.48	29 (3)	79.01	52 (3)	69.50
Qatar	42 (4)	40.71	40 (3)	59.06	56 (4)	53.01	41 (3)	54.61	36 (3)	78.25	43 (3)	75.04
Iran	18 (2)	35.33	29 (2)	45.22	18 (1)	39.10)	14 (1)	40.44	14 (1)	61.41	25 (1)	57.54
S.Y.P.R, (Aden)	11 (1)	34.87	38 (2)	47.61	14 (1)	44.45	-	-	-	-	19 (1)	64.46
Iraq	6 (6)	35.51	18 (1)	46.64	12 (1)	44.34	8 (1)	45.41	12 (1)	65.90	5 (6)	55.29
Sudan	3 (6)	35.13	12 (6)	50.06	8 (6)	38.83	14 (1)	39.77	14 (1)	79.01	28 (2)	51.34
U.A.E	-	-	-	-	-	-	-	-	-	-	14 (1)	75.46
Jordan	-	-	-	-	-	-	-	-	-	-	-	-
Total Middle East Zone (including other countries)												
	730 (64)	40.96	960 (60)	51.47	1015 (70)	50.36	938 (73)	54.27	907 (78)	79.43	1313 (77)	67.85
East European Sector (Communist block)												
	48 (4)	39.52	148 (9)	44.93	131 (9)	44.91	143 (11)	54.22	102 (9)	77.15	118 (7)	64.03
West European Sector (Non-Communist block)												
	191 (17)	35.78	351 (22)	49.60	231 (16)	44.40	93 (7)	40.17	59 (5)	68.69	116 (7)	53.35
Total European Zone												
	239 (21)	37.65	499 (31)	47.27	362 (25)	46.66	236 (18)	47.20	161 (14)	72.92	234 (14)	58.69
Total East Asia Zone												
	157 (14)	20.82	95 (6)	43.09	53 (4)	37.08	91 (7)	40.08	73 (6)	64.40	125 (7)	59.82
Grand Total (including all zones & countries)												
	1134 (100)	37.28	1590 (100)	50.04	1451 (100)	48.42	1291 (100)	52.18	1149 (100)	77.70	1705 (100)	65.78

Table 9.5 (contd...)

Countries	1971-72		1972-73		1973-74		1974-75		1975-76		1976-77	
	Quantity	Unit price	Quantity	Unit price	Quantity	Unit price	Quantity	Unit price	Quantity	Unit price	Quantity	Unit price
Middle East Countries												
Saudi Arabia	643 (30)	43.01	317 (23)	53.11	672 (37)	67.72	478 (29)	90.03	613 (31)	104.10	153 (17)	155.79
Kuwait	682 (32)	36.84	525 (38)	53.75	661 (36)	65.71	401 (25)	87.51	690 (35)	105.97	343 (39)	171.50
Bahrain	94 (4)	40.11	39 (3)	56.30	57 (3)	67.75	43 (3)	93.73	148 (8)	108.95	30 (3)	166.17
Qatar	69 (1)	44.12	34 (3)	55.72	11 (1)	69.87	19 (1)	96.74	54 (3)	94.84	36 (4)	128.55
Iran	70 (3)	29.27	14 (1)	20.38	5 (2)	47.07	10 (1)	78.69	13 (1)	70.81	8 (1)	124.60
S.Y.P.R.(Aden)	41 (2)	44.13	15 (1)	51.95	21 (1)	35.34	2 (1)	66.60	2 (1)	82.44	-	-
Iraq	29 (1)	34.78	12 (1)	35.94	14 (1)	62.50	12 (1)	68.57	1 (1)	75.14	-	-
Sudan	14 (1)	38.03	5 (1)	42.28	2 (1)	54.70	-	-	1 (1)	91.00	1 (1)	121.00
U.A.E.	24 (1)	39.63	18 (1)	59.46	64 (4)	64.04	48 (3)	88.82	67 (3)	95.94	23 (3)	154.03
Jordan	4 (1)	43.25	-	-	-	-	-	-	8 (1)	103.13	-	-
Total Middle East Zone (including other countries)												
	1190		991 (72)	52.98	1525 (84)	66.49	1022 (63)	88.84	1607 (83)	104.32	602 (67)	162.95
East European Sector (Communist Block)												
	130		165 (12)	50.55	108 (6)	53.81	444 (27)	70.50	173 (9)	85.75	164 (18)	164.15
West European Sector (Non-Communist block)												
	150		101 (7)	33.89	61 (3)	47.56	28 (2)	67.75	58 (3)	56.84	32 (4)	81.84
Total European Zone												
	280 (13)	28.42	266 (19)	42.22	169 (9)	50.69	472 (29)	69.13	231 (12)	71.30	196 (22)	123.00
Total East Asia Zone												
	143 (7)	29.36	107 (8)	30.91	108 (6)	44.26	115 (7)	67.81	90 (5)	73.96	90 (10)	133.76
Grand Total Including all zones & countries)												
	2147 (100)	37.41	1384 (100)	49.45	1813 (100)	63.71	1626 (100)	81.92	1941 (100)	99.88	893 (100)	157.17

Table 9.5 (contd....)

Countries	1977-78		1978-79		1979-80		1980-81		1981-82	
	Quantity	Unit price	Quantity	Unit price	Quantity	Unit price	Quantity	Unit price	Quantity	Unit price
<u>Middle East Countries</u>										
Saudi Arabia	786 (28)	186.16	972 (34)	222.11	868 (33)	200.64	885 (38)	164.23	420 (18)	155.31
Kuwait	1226 (45)	177.28	1165 (41)	208.84	971 (37)	189.39	765. (33)	150.77	932 (40)	139.94
Bahrain	124 (5)	185.24	45 (2)	225.46	30 (1)	201.32	19 (1)	166.20	3 (@)	157.97
Qatar	79 (3)	207.20	93 (3)	210.79	83 (3)	194.10	63 (3)	171.52	54 (2)	163.16
Iran	58 (2)	117.03	-	-	55 (2)	194.10	69 (3)	110.38	75 (3)	95.52
S.Y.P.R. (Aden)	2 (@)	176.07	4 (@)	192.15	26 (1)	177.02	34 (1)	142.71	38 (2)	131.99
Iraq	35 (1)	162.87	45 (2)	187.41	81 (3)	180.65	19 (1)	154.49	95 (4)	124.58
Sudan	3 (@)	133.33	2 (@)	153.00	2 (@)	146.00	4 (@)	135.75	1 (@)	143.00
U.A.E.	92 (4)	182.03	109 (4)	207.37	65 (2)	189.26	52 (2)	151.76	27 (1)	155.67
Jordan	39	181.79	13 (1)	203.38	3 (@)	196.00	-	-	130 (6)	146.38
Total Middle East Zone (including other countries)	2491 (90)	179.75	2487 (87)	213.24	2208 (84)	192.43	1964 (84)	154.34	1789 (77)	142.10
<u>East European Sector (Communist Block)</u>										
East European Sector (non communist block)	61 (2)	146.30	190 (7)	130.65	269 (10)	141.87	217 (9)	111.56	374 (16)	85.50
West European Sector (non communist block)	76 (3)	111.29	92 (3)	134.13	34 (1)	132.56	14 (1)	111.00	15 (1)	92.60
Total European Zone	137 (5)	128.80	282 (10)	132.39	303 (11)	137.22	231 (10)	111.28	489 (17)	89.05
Total East Asia Zone	121 (4)	132.88	99 (3)	146.58	118 (5)	141.60	126 (5)	98.83	137 (6)	94.77
Grand Total including all zones and countries)	2763 (100)	175.28	2876 (100)	202.92	2636 (100)	184.23	2345 (100)	148.18	2325 (100)	129.87

Table 9.5 (contd...)

Countries	1982-83		1983-84		1984-85		Average of the percentage of total exports (Quantity)	
	Quantity	Unit price	Quantity	Unit price	Quantity	Unit price	20 year	19 years except 1983-84
<u>Middle East Countries</u>								
Saudi Arabia	299 (29)	175.99	6 (3)	329.16	752 (31)	286.60	(27.15)	(28.58)
Kuwait	281 (27)	166.11	6 (3)	188.77	568 (24)	246.61	(32.65)	(34.21)
Bahrain	8 (1)	170.06	1 (@)	355.72	31 (1)	261.32	(2.60)	(2.73)
Qatar	5 (1)	171.19	-	-	155 (6)	262.31	(2.80)	(2.95)
Iran	-	-	-	-	88 (4)	334.85	(1.45)	(1.53)
S.Y.P.R. (Aden)	10 (1)	142.37	-	-	16 (1)	247.13	(0.75)	(0.78)
Iraq	3 (@)	156.08	-	-	41 (2)	245.35	(1.05)	(1.11)
Sudan	-	-	-	-	3 (@)	237.67	(0.25)	(0.26)
U.A.E.	13 (1)	183.65	1 (@)	260.00	73 (3)	258.29	(1.65)	(1.74)
Jordan	-	-	-	-	56 (2)	271.18	(0.45)	(0.47)
<u>Total Middle East Zone including other countries</u>								
	629 (61)	170.60	8 (3)	220.5	1799 (76)	270.17	(71.55)	(75.14)
<u>East European Sector (Communist Block)</u>								
	317 (31)	140.50	171 (66)	205.18	409 (17)	309.80	(14.25)	(11.53)
<u>West European Sector (Non communist block)</u>								
	19 (2)	139.84	29 (9)	131.55	21 (1)	195.95	(6.04)	(5.89)
<u>Total European Zone</u>								
	336 (33)	140.17	193 (75)	168.37	430 (18)	252.88	(20.29)	(17.42)
<u>Total East Asia Zone</u>								
	64 (6)	135.05	50 (19)	253.18	47 (2)	197.26	(6.84)	(6.18)
<u>Grand Total (including all Zones and Countries)</u>								
	1032 (100)	158.60	258 (100)	210.90	2383 (100)	271.92	(100)	(100)

Note: @ : Negligible. - Nil

Source : 1 . 1965-66 to 1975-76: D.G.C. I & S. Calcutta
2 . 1976-77 to 1984-85: Cardamom Board, Cochin.

by the West European countries. But by 1984-85, Indian exports to the Middle East increased to 76 per cent of her total exports. But it declined to 18 per cent to Europe, consisting of 17 per cent exports to the communist countries and one per cent to the West European non communist countries. This indicates that India has been effectively displaced from West European markets by Guatemala over a period of 20 years. But, India has managed to increase its exports to the East European and Soviet countries during the period. This is particularly true in the case of the Soviet Union to which increased exports have been made possible through trade agreements, possibly based on political considerations.

In the East Asia zone, Japan and Singapore remained steady as major buyers of Indian cardamom. Japan took about 16 to 108 M.T. (3 to 5 per cent) and Singapore eight to 40 M.T. (1 to 7 per cent) all through the period 1965-66 to 1984-85. In the African zone, Mozambique and in the American zone, U.S.A. and Canada were the major buyers of Indian cardamom. But quantity and percentage wise, their purchases from India were negligible especially after 1975-76.

Variety of Exports

Exports of Indian cardamom by different varieties from 1965-66 to 1984-85 are given in Table 9.6.

Table 9.6

Variety-wise export of cardamom from India, 1965-66 to 1984-85

Financial year	Alleppey Green		Coorg Green		Bleached/bleachable		Seeds		Others mixed		Powder		Total	
	Quantity	Unit price	Quantity	Unit price	Quantity	Unit price	Quantity	Unit price	Quantity	Unit price	Quantity	Unit price	Quantity	Unit price
1965-66	821 (72)	39.16	117 (10)	35.13	92 (8)	37.71	52 (5)	37.98	52 (5)	10.87			1134 (100)	37.28
1966-67	1231 (77)	50.21	121 (8)	43.92	95 (6)	48.03	83 (5)	65.23	60 (4)	41.03			1590 (100)	50.04
1967-68	1173 (80)	48.48	82 (6)	39.02	85 (6)	45.96	81 (6)	59.83	30 (2)	48.20			1451 (100)	48.42
1968-69	1119 (87)	52.83	52 (4)	46.00	69 (5)	46.39	45 (4)	53.98	6 (2)	38.50			1291 (100)	52.18
1969-70	998 (87)	77.78	35 (3)	74.82	83 (7)	81.45	21 (2)	67.16	12 (1)	71.73			1149 (100)	77.70
1970-71	1505 (88)	66.56	65 (4)	62.14	86 (5)	59.34	37 (2)	59.11	12 (1)	55.24			1705 (100)	65.78
1971-72	1753 (82)	37.68	117 (5)	40.07	186 (9)	31.59	44 (2)	39.81	47 (2)	41.49			2147 (100)	37.41
1972-73	1130 (82)	49.87	124 (9)	54.93	85 (6)	39.81	31 (2)	37.88	14 (1)	51.89			1384 (100)	49.48
1973-74	1555 (86)	64.63	89 (5)	57.44	91 (5)	53.72	57 (3)	62.88	21 (1)	67.50			1813 (100)	63.71
1974-75	1294 (80)	82.51	146 (9)	85.53	158 (10)	75.76	21 (1)	62.85	7 (2)	46.85			1626 (100)	81.52
1975-76	1810 (93)	101.45	32 (2)	92.77	70 (3)	82.16	17 (1)	66.72	12 (1)	33.06			1941 (100)	99.86
1976-77	803 (90)	160.81	13 (1)	141.81	61 (7)	131.51	16 (2)	83.47	-	-			893 (100)	157.17
1977-78	2595 (94)	177.85	20 (1)	138.72	119 (4)	132.71	12 (2)	104.79	17 (1)	174.51			2763 (100)	175.28
1978-79	2764 (96)	205.30	10 (2)	174.70	68 (2)	148.90	1 (2)	207.09	33 (2)	121.10			2876 (100)	202.92
1979-80	2493 (95)	186.58	1 (2)	152.64	106 (4)	147.75	36 (1)	128.98	-	-			2636 (100)	184.23
1980-81	2209 (94)	150.60	1 (2)	133.13	113 (5)	104.02	15 (1)	126.17	7 (2)	109.86			2345 (100)	148.18
1981-82	2193 (94)	132.16	1 (2)	127.48	119 (5)	92.97	12 (1)	80.31	-	-			2325 (100)	129.87
1982-83	933 (90)	162.93	2 (2)	130.00	38 (4)	153.85	47 (5)	96.61	14 (1)	91.24			1032 (100)	158.60
1983-84	211 (82)	211.15	2 (2)	250.00	30 (11)	264.05	17 (7)	113.67	-	-			258 (100)	210.90
1984-85	2322 (98)	272.11	-	-	56 (2)	276.05	5 (2)	150.16	-	-			2383 (100)	271.92
Average	(87)		(3)		(7)		(2)		(1)			(2)	(100)	

Note: @ : Negligible, - : nil

Source: 1 : 1965-66 to 1975-76: D.G.C. I & S, Calcutta.
2 : 1975-76 to 1984-85: Cardamom Board, Cochin.

Further analysis of the different varieties of cardamom exported to the different markets in the world shows that while all the different regions, especially the Middle East, preferred the Alleppey Green varieties, other regions bought all varieties of cardamom. This is in evidence of the fact that the demand for bold Alleppey Green cardamoms in the Middle Eastern countries was for the preparation of cardamom-coffee, in other regions the demand for cardamom or cardamom oil was for flavouring the manufactured food items, beverages, etc.

It may be seen from Table 9.6, that generally the Alleppey Green and bleached varieties fetched a higher unit price in exports over other varieties of cardamom and seeds.

Export of Cardamom Oil

The export of cardamom from India has predominantly been in the form of capsules. There has been very little export of cardamom oil. The export of cardamom oil exhibited a breakthrough during the year 1977-78. During this year, 820 kilogram of cardamom oil valued at Rs.19.02 lakhs were exported as against nil or negligible quantities in the past.⁶

⁶Cardamom Board, Cardamom Statistics, 1977-78, (Cochin 1978) p.5.

Yearwise exports of cardamom oil from India from 1977-78 to 1984-85 are given in Table 9.7.

Table 9.7

Export of cardamom oil from India: 1977-78 to 1984-85

Year	Quantity (Kgs.)	Value (Rs./lakhs)	Unit price (Rs./kg.)
1977-78	820	19.02	2320
1978-79	1464	34.47	2354
1979-80	810	17.84	2204
1980-81	919	15.71	1710
1981-82	755	13.71	1816
1982-83	448	8.53	1906
1983-84	294	12.84	4376
1984-85	601	22.05	3668

Source: Cardamom Board, Cochin.

From Table 9.7 it can be seen that the export of cardamom oil showed wide fluctuations in quantity and price during this period of eight years. The quantity of exports was highest in the year 1978-79 and lowest in 1983-84. The quantity of export also showed a declining trend. The export prices of oil moved parallel to the prices of cardamom in the country.

The export of cardamom oil from 1977-78 to 1984-85 by countries is given in Table 9.8. This Table reveals that U.S.A. and France were the major buyers of cardamom oil from India, constituting on an average 41.79 per cent and 32.83 per cent of the total exports from India to these countries over the period of eight years from 1977-78 to 1984-85. While U.S.A. bought 910 kgs. or 62.16 per cent of the total export of cardamom oil in 1978-79, it came down to 100 kgs. or 16.64 per cent in 1984-85. The cardamom oil export to France showed a mixed trend. It was highest in 1981-82 with 417 kgs. or 55.23 per cent and lowest in 1983-84 with 21 kgs. or 7.14 per cent. The export of cardamom oil to Japan showed an increasing trend from 1978-79 to 1983-84 from one kg. or 0.07 per cent in 1978-79 to 12 kgs. or 4.08 per cent in 1983-84. However, there was negligible export of oil to Japan during the year 1984-85. Oil exports to other countries, such as Canada, U.K., West Germany, Netherlands, Switzerland, etc. showed a very erratic pattern. As most of these major cardamom oil importing countries were in the American and European regions, it can perhaps be assumed that those countries are either getting cardamom oil from Guatemala or have started manufacturing oil by themselves using

Table 9.8

Country-wise export of cardamom oil from India: 1977-78 to 1984-85
(Quantity in Kgs., figures in brackets are percentage in total)

Financial year	U.S.A	Canada	U.K.	France	G.F.R.	Netherlands	Switzerland	Japan	Total including others
1977-78	255 (31.10)	-	33 (4.02)	372 (45.37)	150 (18.29)	-	10 (1.22)	-	820 (100)
1978-79	910 (62.16)	-	71 (6.85)	400 (27.32)	-	-	82 (5.60)	1 (0.07)	1464 (100)
1979-80	250 (30.86)	13 (1.60)	119 (14.69)	176 (21.73)	150 (18.52)	30 (3.70)	20 (2.47)	2 (0.25)	810 (100)
1980-81	500 (54.41)	-	104 (11.32)	228 (24.81)	-	-	75 (8.16)	2 (0.22)	919 (100)
1981-82	200 (26.49)	-	45 (5.96)	417 (55.23)	70 (9.27)	-	20 (2.65)	2 (0.26)	755 (100)
1982-83	200 (44.64)	-	-	188 (41.96)	50 (11.16)	-	-	8 (1.79)	448 (100)
1983-84	200 (68.03)	13 (4.42)	-	21 (7.14)	-	40 (13.61)	-	12 (4.08)	294 (100)
1984-85	100 (16.64)	13 (2.16)	5 (0.83)	235 (39.10)	122 (20.30)	115 (19.13)	-	@ ()	601 (100)
Average	(41.79)	(1.02)	(5.21)	(32.83)	(9.69)	(4.56)	(2.51)	(0.33)	(100)

Note: @ : Negligible

- : Nil

Source: Cardamom Board, Cochin.

the cheaper cardamoms imported from Guatemala. Data on source-wise imports of cardamom oil to these countries are not available.

From earlier discussions, it was seen that the Middle East countries are the major importers of cardamom, constituting more than 75 per cent of Indian exports. Among the Middle East countries, Saudi Arabia, Kuwait and Qatar buy over 65 per cent of Indian exports of cardamom. In West Europe, though Indian exports have come down drastically in the recent past, Norway, Sweden, West Germany and U.K. are the major consumers of cardamom. In East Asia, Japan is the major user. Though Singapore imports comparatively good quantities of cardamom, they are mostly for re-export. The communist countries, especially U.S.S.R. and East Germany import cardamoms from India on the basis of bilateral trade agreements between India and these countries.

Against the above background, an attempt is made to analyse the cardamom markets in Saudi Arabia, Kuwait and Qatar in the Middle East, Norway, Sweden, West Germany and U.K. in Western Europe and Japan in East Asia utilizing the available data. Data available for the study were quite inadequate, such as monthwise imports, prices, etc. for a detailed study. Also,

there were many apparent discrepancies in the available statistics. Therefore, this analysis has its own limitations.

Saudi Arabia

Saudi Arabia is the largest country in the Middle East region. In per capita income, it is next only to Kuwait in the Gulf region. Saudi Arabia is also the largest consumer of cardamom in the world.

Imports of cardamom into Saudi Arabia from 1971 to 1984 by source are given in Table 9.9. The trend of imports of cardamom from India and Guatemala are charted in Graph 9.1.

From Table 9.9 it can be seen that Saudi Arabia has not only been accounted for a sizeable share of total world imports for a long time, but also that this has been very much on the increase year by year. The total import of cardamom into Saudi Arabia increased from 935 M.T. in 1971 to 5073 M.T. in 1984, marking an increase of over five times in 13 years. This high rate of growth of cardamom imports to Saudi Arabia might be due to two reasons. Firstly, there might have been a considerable volume of unsatisfied demand in the past due to limited supplies from India and Sri Lanka. This unsatisfied demand might have been met by heavy

Table 9.9

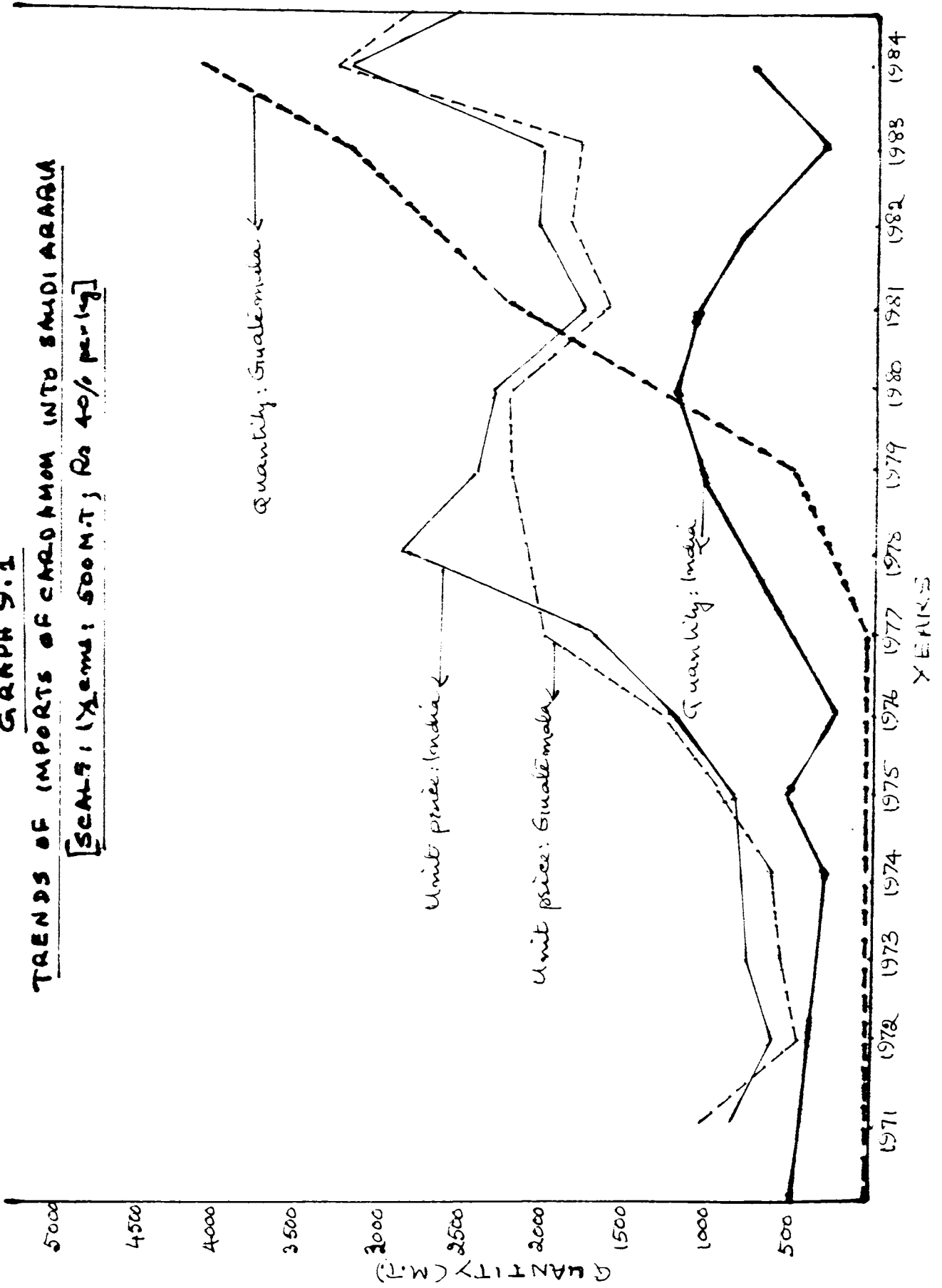
Saudi Arabia: Source-wise import of cardamom: 1971 to 1984

(Quantity in M.T., Unit price in Indian Rs./kg., Figures in brackets are percentages in total)

Year	Producing Countries						Non-producing countries						All countries	
	India		Guatemala		Others		Kuwait		Bahrain		Others		Total	
	Quantity	Unit price	Quantity	Unit price	Quantity	Unit price	Quantity	Unit price	Quantity	Unit price	Quantity	Unit price	Quantity	Unit price
1971	416 (45)	68.52	2 (0)	82.50	51 (5)	54.98	121 (13)	69.01	255(27)	61.30	90 (10)	61.11	935 (100)	65.19
1972	399 (35)	48.25	7 (1)	38.57	123 (11)	41.17	113 (10)	43.84	161(14)	38.22	325 (29)	21.86	1128 (100)	37.94
1973	380 (30)	64.77	20 (2)	47.45	107 (8)	56.91	510 (40)	50.40	108(9)	45.27	143 (11)	36.99	1268 (100)	53.49
1974	334 (35)	69.34	34 (4)	49.68	-	-	443 (45)	67.46	95(10)	54.28	57 (6)	50.63	963 (100)	65.79
1975	505 (32)	73.11	59 (4)	83.20	-	-	460 (29)	72.20	233(15)	73.04	326 (20)	60.57	1583 (100)	71.46
1976	250 (16)	95.56	31 (2)	108.15	26 (2)	64.77	470 (30)	78.75	207(13)	96.45	565 (37)	90.61	1549 (100)	90.00
1977	504 (28)	140.67	20 (1)	164.43	29 (2)	90.89	549 (31)	80.90	162(9)	126.80	528 (29)	123.94	1792 (100)	116.16
1978	703 (36)	235.09	301 (15)	96.94	14 (1)	117.14	53 (3)	159.42	-	-	906 (45)	126.37	1977 (100)	137.86
1979	1061 (42)	195.78	677 (27)	174.11	41 (2)	156.18	60 (2)	190.46	-	-	663 (25)	173.37	2502 (100)	173.35
1980	1262 (39)	179.37	1381 (43)	154.43	37 (1)	144.70	-	-	-	-	556 (17)	145.25	3236 (100)	160.61
1981	1043 (25)	133.67	2377 (58)	109.15	6 (0)	133.50	-	-	-	-	681 (17)	102.51	4107 (100)	113.79
1982	808 (20)	162.05	2707 (66)	151.27	10 (0)	125.29	-	-	-	-	561 (14)	122.64	4086 (100)	149.40
1983	291 (7)	162.33	3286 (78)	148.62	2 (0)	182.31	-	-	-	-	612 (15)	117.90	4199 (100)	145.06
1984	752 (15)	251.52	4082 (81)	256.76	31 (1)	244.90	-	-	-	-	208 (3)	145.48	5073 (100)	251.33
Average	(30)	(27)	(2)	(2)	(14)	(7)	(20)	(100)						

Source: 1. National Foreign Trade Statistics, Saudi Arabia.
2. Embassy of India, Jeddah.

GRAPH 9.1
TRENDS OF IMPORTS OF CARDAMOM INTO SAUDI ARABIA
[SCALE: (X-axis: 500 M.T; Rs 40% per kg)]



UNIT PRICE - Rs/kg

imports from Guatemala, which emerged as a leading producer and supplier of green cardamoms recently. Secondly, the oil boom which commenced in the early seventies might have resulted in the increase in per capita income, which in turn increased the consumption of 'Gahwa' or cardamom coffee, which was till then a privilege of the middle income and high income groups. It can also be noted that, inspite of the fact that the first flush of oil boom has come to an end in the early eighties, the import of cardamom has continued to grow. However, according to the latest reports in 1986, there has been some slackening of demand for cardamom in recent times perhaps on account of the crash in oil prices and the consequent economic recession,

From Table 9.9 it can be seen that in absolute terms, there has been an improvement in the quantity of cardamom exported from India to Saudi Arabia over the years, but in relative terms, India's exports to Saudi Arabia have declined considerably. In 1971, Saudi Arabia imported 416 M.T. of cardamom from India, which increased to 1262 M.T. in 1980, but fell to 752 M.T. in 1984. But in relative terms it is seen that while India was holding 45 per cent of Saudi Arabia's cardamom imports in 1971, it dwindled down to the lowest ever share of seven per cent in 1983 and to 15 per cent in 1984.

Guatemala, which was having a negligible share in the Saudi Arabian market in 1971 with a mere two M.T. at one time increased her exports year after year and reached a level of 301 M.T. in 1978, constituting 15 per cent market share. Thereafter, the growth of Guatemala's share was phenomenal. In 1984, Guatemala's supply reached a level of 4083 M.T., constituting 81 per cent of Saudi Arabia's import of cardamom.

From Table 9.9 it can also be seen that except for four years viz., 1971, 1975, 1976, 1977 and 1984, Indian cardamom was enjoying substantially high unit prices compared to Guatemalan prices. From Table 9.9 it can also be seen that cardamom producers other than India and Guatemala have not had any substantial share in Saudi Arabian market. Whatever share they had in the early seventies declined considerably in the same way as Indian share fell. The unit prices realised by these small producers generally showed ups and downs compared to those of India and Guatemala.

Another peculiar feature which can be noted from Table 9.9 is that Saudi Arabia also heavily depended on re-imports of cardamom from non-producing countries. Kuwait and Bahrain were such major suppliers of cardamom to Saudi Arabia, so much so that in 1975, forty four per

cent of Saudi Arabia's imports were from these two countries. In 1976, imports from non-cardamom producing countries to Saudi Arabia went up as high as 1242 M.T., constituting 80 per cent of total imports. Since 1979, the import of cardamom into Saudi Arabia from non-producing countries declined steadily and reached a level of 208 M.T., constituting only three per cent of total imports. This change went along with increased imports from Guatemala. This leads to the conclusion that exporters from non-producing countries were mainly displaced by exporters from Guatemala.

Census taking is difficult in Saudi Arabia because of the nomadic nature of a part of its population and illegal immigrants. However, it was estimated that during 1984, the population of Saudi Arabia was seven millions. It was seen that Saudi Arabia had imported 5073 M.T. of cardamom in 1984. Assuming that she had not re-exported cardamom, the per capita consumption of cardamom in Saudi Arabia was 724.71 grammes per year or 1.99 grams per day in 1984. This could easily be the highest in the world.

It appears from Table 9.9 that prices were not a determinant factor for buying cardamom by Saudi Arabia. She had preferred to buy the 'bold green'

capsules only. This can be seen on a comparison of the prices of cardamom imported from different sources into Saudi Arabia and the prices of cardamom imported by other countries in the Middle East and countries in Europe and West Asia.

Kuwait

Table 9.10 provides figures relating to the total import of cardamom into Kuwait from different sources, and the percentage share of India, Guatemala, other producing countries and non-producing countries. The trend of imports from India and Guatemala may be seen in Graph 9.2.

Kuwait is a small country with 1.5 million population, with about 60 per cent non-Kuwaiti population. Kuwait, Dubai, and Bahrain are entrepots in the Middle East, catering to the needs of imports in all Gulf nations.

It can be seen from Table 9.10 that the total import of cardamom into Kuwait from India has substantially increased from 709 M.T. in 1971 to 1483 M.T. in 1982. Figures relating to 1983 and 1984 are not available. India had a dominant share of Kuwaiti cardamom imports until 1972. The import of cardamom into Kuwait

Table 9.10

Kuwait: Source-wise import of cardamom: 1971 to 1982
(Quantity in M.T., Unit price in Indian Rs./kg., Figures in brackets are percentages in total)

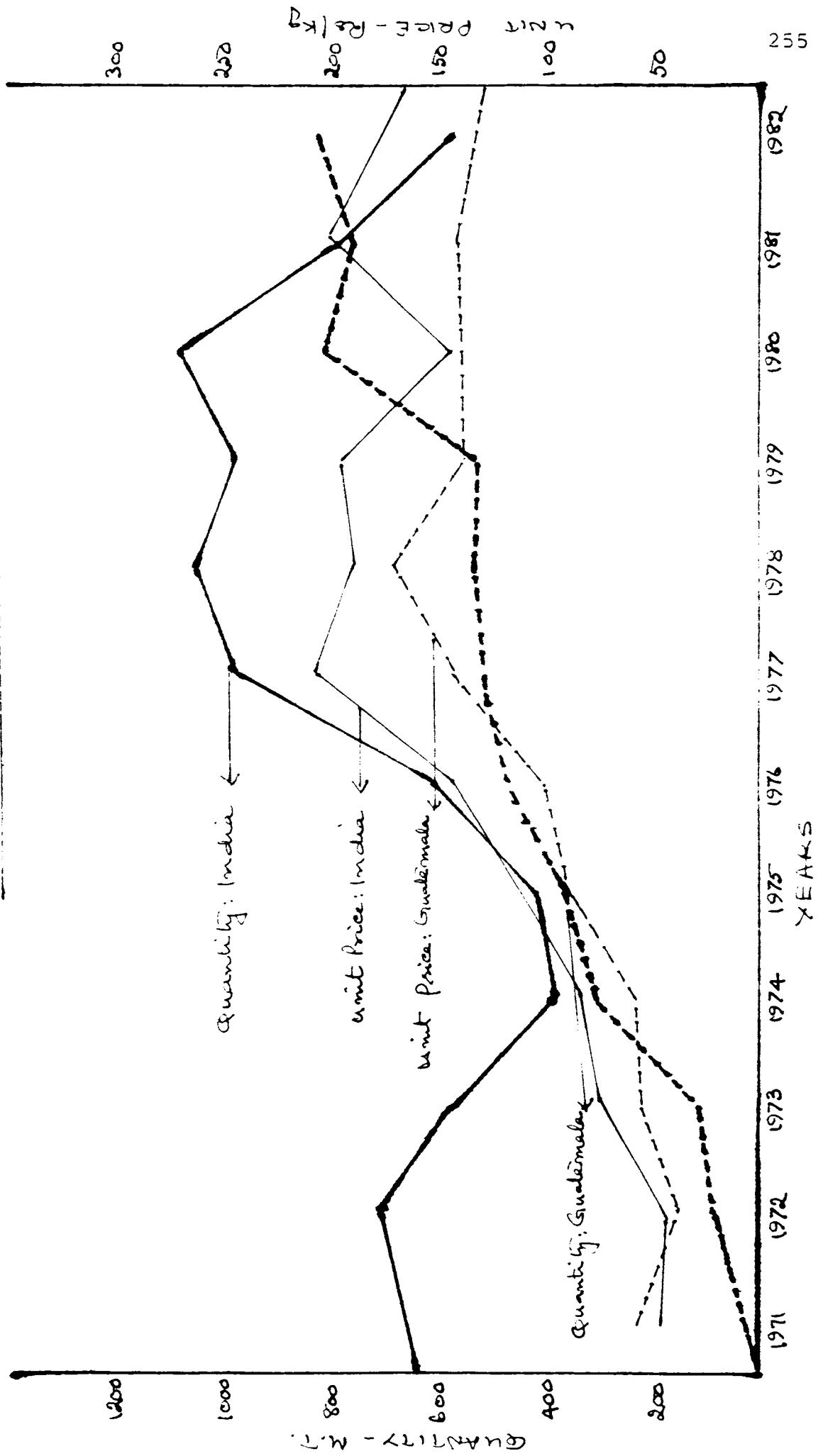
Year	Producing countries				Non Producing countries				All countries			
	India		Guatemala		Others		Total		Total		Total	
	Quantity	Unit price	Quantity	Unit price	Quantity	Unit price	Quantity	Unit price	Quantity	Unit price	Quantity	Unit price
1971	660 (93)	49.19	39 (6)	59.58	8 (1)	49.64	2 (2)	46.32	709 (100)	46.76		
1972	704 (92)	43.47	47 (6)	46.53	12 (2)	35.17	2 (2)	52.50	765 (100)	43.49		
1973	569 (83)	75.29	103 (15)	55.38	11 (2)	69.02	3 (2)	64.00	686 (100)	72.15		
1974	388 (54)	86.56	301 (42)	60.71	30 (3)	47.13	6 (1)	54.33	725 (100)	73.92		
1975	441 (49)	123.61	386 (43)	90.00	78 (8)	51.77	-	-	905 (100)	103.11		
1976	611 (52)	148.00	484 (42)	101.53	61 (5)	64.50	10 (2)	28.90	1166 (100)	123.32		
1977	982 (64)	210.60	525 (34)	140.15	-	-	18 (2)	181.48	1525 (100)	186.18		
1978	1069 (66)	188.69	537 (33)	167.70	23 (1)	148.47	1 (2)	151.85	1630 (100)	177.88		
1979	982 (64)	190.93	525 (34)	126.88	4 (2)	148.61	14 (1)	169.07	1525 (100)	168.55		
1980	1095 (56)	140.80	805 (41)	135.59	43 (2)	132.16	2 (2)	115.80	1945 (100)	138.43		
1981	797 (49)	201.45	788 (48)	141.15	15 (2)	196.33	50 (3)	93.64	1640 (100)	170.35		
1982	569 (38)	160.19	843 (57)	131.32	17 (1)	123.54	54 (4)	123.54	1483 (100)	142.41		
Average	(63)	(34)	(2)	(1)	(100)							

Source: 1. National Foreign Trade Statistics, Kuwait.
2. Embassy of India, Kuwait.

GRAPH 9.2

TRENDS OF IMPORTS OF CARDAMOM INTO KUWAIT

[SCALE: 200M.T; 200M.T; 2050/MT]



from India was as high as 93 per cent (660 M.T.) of total imports in 1971, 92 per cent (204 M.T.) in 1972 and 83 per cent (569 M.T.) in 1973. Since then it has declined drastically year after year and reached the level of 38 per cent in 1982. However, there was some slight recovery in 1977, (64 per cent) 1978 (66 per cent) and 1979 (64 per cent). This can perhaps be connected with the oil boom in Middle East. The share of Guatemala was only six per cent in 1971. From 1974 onwards, Guatemala's share of Kuwait's cardamom imports showed a steady growth and reached a level of 57 per cent in 1982. In absolute terms, cardamom imports from India was 569 M.T. and that from Guatemala was 843 M.T. in 1982.

As can be seen from Table 9.10, the lion's share of Kuwait's imports come from producing countries only, mainly because Kuwait itself is an entrepot. Kuwait imports and then re-exports substantial quantities of cardamom to Saudi Arabia as can be seen from Table 9.9. Details of re-exports from Kuwait are not available.

Kuwait being a re-exporting country, competitive prices of cardamom play a significant role in Kuwait's import of cardamom, which is evident from the comparison of unit prices of import in Kuwait and Saudi

Arabia. As in the case of Saudi Arabia, Guatemala has displaced India from Kuwait to a large extent, but not upto the same level as in Saudi Arabia. This may perhaps be due to Kuwait's re-exports of cardamom to other countries in the Gulf region which do not directly import cardamom from India, Guatemala and other producing countries.

The per capita consumption of cardamom in Kuwait is difficult to assess in the absence of details of re-exports of cardamom from Kuwait.

Qatar

Qatar is a small country in the Middle East. Its population is estimated at 2,50,000 in 1984.

Table 9.11 gives details of the total import of cardamom into Qatar from 1971 to 1983 and the relative share of India, Guatemala and other supplying countries. It may be noted that Qatar has been importing from India 43 to 99 M.T. of cardamom from 1971 to 1983, excepting that in 1979, 1980 and 1981 the imports were more. The unusual import of 175 M.T., 323 M.T. and 610 M.T. in 1979, 1980 and 1981 respectively are difficult to explain.

From Table 9.11 it can be seen that India and certain non-producing countries like Kuwait were

Table 9.11

Qatar: Source-wise import of cardamom: 1971 to 1983

(Quantity in M.T., Unit price in Indian Rs./kg., Figures in brackets are percentages of total)

Year	Producing countries						Non producing countries						All countries					
	India			Guatemala			Others			Total			Total			Total		
	Quantity	Unit price	Quantity	Unit price	Quantity	Unit price	Quantity	Unit price	Quantity	Unit price	Quantity	Unit price	Quantity	Unit price	Quantity	Unit price	Quantity	Unit price
1971	49 (75)	55.40	3 (5)	72.40	@ (6)	56.66	13 (20)	57.63	65 (100)	56.52								
1972	40 (62)	50.22	-	-	1 (2)	19.00	24 (36)	40.54	65 (100)	46.12								
1973	20 (26)	55.85	-	-	-	-	56 (74)	42.41	76 (100)	45.94								
1974	12 (28)	96.91	1 (2)	80.00	1	73.00	30 (70)	78.28	43 (100)	83.35								
1975	17 (25)	101.53	9 (18)	95.10	2	67.08	39 (57)	100.75	67 (100)	98.95								
1976	43 (58)	125.19	-	-	-	-	31 (42)	75.56	74 (100)	104.12								
1977	26 (30)	171.19	-	-	-	-	60 (70)	117.90	86 (100)	133.99								
1978	68 (78)	217.89	1 (1)	195.53	-	-	18 (21)	190.17	87 (100)	211.08								
1979	75 (43)	198.68	71 (41)	210.91	1 (6)	217.39	28 (26)	212.64	175 (100)	205.76								
1980	198 (61)	201.07	94 (29)	145.51	@ (6)	153.01	31 (10)	204.18	323 (100)	185.16								
1981	173 (28)	119.83	63 (10)	109.83	2 (6)	118.89	372 (61)	119.35	610 (100)	119.35								
1982	17 (27)	164.10	38 (61)	175.62	2 (3)	169.16	5 (9)	160.92	62 (100)	174.63								
1983	2 (2)	156.52	56 (56)	144.83	@ (6)	200.75	41 (41)	137.66	99 (100)	142.29								
Average	(42)		(17)		(6)		(41)		(100)									

Note: @ Negligible; - : Nil

Source: Embassy of India, Doha.

the major suppliers to Qatar until 1978. In 1979, Guatemala entered the Qatar market in a big way. In that year, Qatar imported 75 M.T. or 43 per cent of cardamom from India and 71 M.T. or 41 per cent from Guatemala. By 1983, the Indian share was reduced to a mere two per cent or 2 M.T. The share of Guatemala increased to 56 M.T. or 56 per cent of total imports. The share of other cardamom producing countries was negligible all through the years from 1971 to 1983, whereas the share of non-producing countries ranged from nine per cent to 74 per cent during the above 13 year period.

Prices do not appear to be a determinant governing the preference for Guatemalan or any other cardamom. This may be seen from the unit prices of different suppliers to Qatari market. The discussions held by the researcher with Mr. Ahmed Mohammed Sultan AP Sowaidi, Managing Director of the Kuwaiti Government's importing company revealed that in Qatar, cardamom is considered as an essential item and that the government supplied it through ration shops, heavily subsidising the price. Therefore, the import of cardamom into Qatar is mainly undertaken by the Government. However, there is no restriction of import by private agencies.

The total import figure of cardamom of 99 M.T. in 1983 appears to be dependable. Then the per capita consumption of cardamom in Qatar would work out approximately to 396 grams per year or 1.08 grammes per day. The comparable figures of Saudi Arabia are 724.71 gms. per year or 1.99 gms. per day.

Cardamom imports to other countries in the Middle East show more or less the same pattern as that of Saudi Arabia, Kuwait and Qatar.

Norway, Sweden and West Germany

As stated earlier, the Scandinavian countries, West Germany and U.K. are the traditional consumers of cardamom in West Europe, though on a much smaller scale.

The import pattern and unit prices of cardamom in Norway, Sweden, and West Germany are given in Tables 9.12, 9.13 and 9.14.

It may be seen from the Tables noted above, that cardamom imports into the three countries is more or less of the same pattern. There has not been any large growth of import of cardamom into Norway and Sweden while West Germany doubled its volume of cardamom over a period of 13 years from 1971 to 1983. It has, however been reported that West Germany re-exports

Table 9.12

Norway: Source-wise import of cardamom: 1971 to 1983

(Quantity in M.T., Unit price in Indian Rs./kg., Figures in brackets are percentages in total)

Year	Producing countries						Non producing countries						All countries Total	
	India		Guatemala		Others								Quantity	Unit price
	Quantity	Unit price	Quantity	Unit price	Quantity	Unit price	Quantity	Unit price	Quantity	Unit price	Quantity	Unit price		
1971	9 (24)	47.77	22 (59)	37.72	1 (3)	41.00	5 (14)	24.80	37 (100)	38.51				
1972	14 (34)	26.57	23 (56)	26.17	-	-	4 (10)	48.00	41 (100)	28.43				
1973	6 (15)	38.33	21 (54)	44.38	4 (10)	43.00	8 (21)	61.62	39 (100)	46.84				
1974	2 (5)	84.50	25 (58)	47.20	6 (14)	41.33	10 (23)	53.60	43 (100)	49.60				
1975	1 (3)	76.00	15 (48)	47.73	7 (23)	38.14	8 (26)	58.75	31 (100)	49.32				
1976	● (●)	N.A	29 (62)	70.39	10 (21)	66.00	8 (17)	86.80	47 (100)	73.32				
1977	-	-	22 (59)	108.18	4 (11)	102.25	11 (30)	108.00	37 (100)	108.86				
1978	6 (13)	75.85	32 (50)	122.40	2 (4)	157.47	15 (33)	102.23	45 (100)	100.91				
1979	2 (5)	46.17	27 (64)	101.44	2 (5)	104.71	11 (26)	66.28	42 (100)	92.42				
1980	6 (10)	38.20	38 (64)	67.47	2 (3)	60.18	13 (22)	47.52	59 (100)	64.25				
1981	2 (4)	72.38	33 (65)	44.98	3 (6)	48.98	13 (26)	61.60	51 (100)	56.38				
1982	-	-	40 (69)	40.73	-	-	18 (31)	39.68	58 (100)	42.34				
1983	-	-	23 (58)	73.13	-	-	17 (42)	53.02	40 (100)	66.55				
Average	(9)		(60)		(7)		(24)		(100)					

Note: NA - Not available; ● - Negligible; - Nil

Source: Embassy of India, Oslo.

Table 9.13

Sweden: Source-wise import of cardamom: 1971 to 1983

(Quantity in M.T.; Unit price in Indian Rs./kg.; Figures in brackets are percentages in total)

Year	Producing countries						Non producing countries		All countries Total	
	India		Guatemala		Others*		Non producing countries		All countries Total	
	Quantity	Unit price	Quantity	Unit price	Quantity	Unit price	Quantity	Unit price	Quantity	Unit price
1971	30 (9)	43.80	159(46)	38.01	34 (10)	32.82	119 (35)	12.07	342 (100)	28.97
1972	31 (11)	27.61	175(64)	26.20	47 (18)	20.91	19 (7)	12.26	272 (100)	24.47
1973	9 (3)	30.66	231(65)	24.76	56 (16)	19.75	57 (16)	9.47	353 (100)	21.65
1974	2 (1)	55.00	187(69)	51.76	68 (25)	38.82	14 (5)	23.57	271 (100)	47.08
1975	-	-	159(65)	52.57	81 (34)	35.30	3 (1)	73.33	243 (100)	47.07
1976	7 (3)	62.85	104(40)	65.57	147 (57)	43.40	2 (0)	110.00	260 (100)	53.30
1977	16 (6)	22.13	132(51)	103.25	78 (30)	79.42	35 (13)	40.46	261 (100)	82.42
1978	12 (6)	44.25	90(44)	108.17	35 (37)	101.48	26 (13)	54.46	203 (100)	54.04
1979	5 (2)	38.00	129(57)	92.79	62 (27)	101.12	31 (14)	49.03	228 (100)	88.33
1980	-	-	180(80)	53.83	21 (9)	63.33	26 (11)	43.84	229 (100)	53.93
1981	-	-	NA	NA	NA	NA	NA	NA	180 (100)	37.50
1982	-	-	127(62)	46.61	70 (34)	36.57	7 (4)	NA	204 (100)	43.13
1983	-	-	169(76)	86.15	26 (11)	92.30	28 (13)	50.00	223 (100)	86.10
Average	(3)		(60)		(26)		(11)		(100)	

Notes: NA : Not available; -: Nil; * : Tanzania only.

Source: Embassy of India, Stockholm.

Table 9.14

F.R.G. (West Germany): Source-wise import of cardamom : 1971-1983

(Quantity in M.T., Unit price in Indian Rs./kg.; Figures in brackets are percentages in total)

Year	Producing countries						Non producing countries		All countries	
	India		Guatemala		Others*				Total	
	Quantity	Unit price	Quantity	Unit price	Quantity	Unit price	Quantity	Unit price	Quantity	Unit price
1971	12 (11)	30.72	59 (54)	34.50	38 (35)	26.69	-	-	109 (100)	31.34
1972	11 (10)	11.02	53 (47)	28.50	48 (42)	23.25	1 (1)	17.77	113 (100)	24.54
1973	6 (5)	21.00	84 (67)	34.40	35 (28)	27.14	1 (1)	22.00	126 (100)	31.65
1974	10 (8)	13.68	73 (58)	28.82	40 (32)	23.44	2 (2)	13.50	125 (100)	25.68
1975	-	-	72 (58)	31.29	45 (36)	19.49	8 (6)	22.62	125 (100)	26.50
1976	13 (12)	29.69	29 (26)	84.06	66 (59)	50.68	3 (3)	30.00	111 (100)	52.21
1977	10 (9)	41.86	49 (46)	128.02	44 (41)	97.70	4 (4)	NA	107 (100)	104.73
1978	17 (11)	73.09	27 (50)	122.25	46 (30)	109.70	14 (9)	NA	154 (100)	109.18
1979	17 (8)	90.89	122 (76)	122.65	34 (16)	113.81	1 (1)	NA	214 (100)	118.24
1980	6 (3)	22.36	133 (63)	53.17	64 (30)	69.19	8 (4)	NA	211 (100)	57.36
1981	5 (2)	23.65	158 (60)	40.46	86 (33)	37.12	14 (5)	NA	263 (100)	40.95
1982	1 (1)	12.09	142 (61)	50.93	87 (37)	39.74	3 (2)	NA	233 (100)	46.92
1983	4 (2)	21.96	167 (74)	78.92	37 (16)	86.64	17 (8)	NA	225 (100)	80.15
Average	(6)		(58)		(33)		(3)		(100)	

Note: NA - Not available; - Nil; * : Mainly Tanzania.

Source: 1. Consulate General of India, Hamburg,
2. Eurostat, India Trade Centre, Brussels.

cardamom to its neighbouring countries. From Tables 9.12, 9.13 and 9.14 it appears that the consumption of cardamom in Norway, Sweden and West Germany has remained more or less stagnant during the last few years. These Tables also indicate that these countries are importing cardamom from both the producing and re-exporting countries. Guatemala was the major supplier to them. India lost her market in Norway in 1982 and in Sweden in 1980. Tanzania continues to be a major supplier along with Guatemala to Sweden and West Germany. In all the above countries, Guatemala increased her share of exports, especially in Sweden and West Germany as can be seen from the Tables 9.12, 9.13 and 9.14.

From the unit prices of import it can be seen that the West European countries are price sensitive and have preferred cheaper cardamom compared to the purchases by the Middle East countries in the corresponding years. This may be because of the differences with regard to the perception of cardamom in these different countries and the product use. The use of cardamom in the Europe is mainly for food and flavour industries, and this is the reason for their buying less expensive cardamoms. This is not the case with the Middle East countries.

It may also be seen from the above Tables that India has been replaced by Guatemala in all the three countries, whereas Tanzania keeps her strong hold in Sweden and West Germany.

From these tables it can also be seen that price is a major determinant factor in the purchase of cardamom in the West European countries like Norway, Sweden and West Germany. These markets look for lower grades of cardamom without any consideration for colour or external appearance. Even cardamom capsules with 'thrip' marks are in good demand in Europe as may be seen from an analysis of the grade-wise exports. This suggests that it is high time that India revises its quality and pricing strategy with regard to the European market.

The United Kingdom

Great Britain shows a different pattern of imports from the West European countries as can be seen from Table 9.15.

Britain did not import cardamom from the non-producing countries. It also imported from all producing countries. Here also, while Guatemala stepped up its exports to U.K., the Indian exports to U.K. showed an erratic pattern. The total import of cardamom into U.K.

did not show any appreciable increase as in the case of the West European countries. The total import of cardamom into U.K., was 94 M.T. in 1976 and 141 M.T. in 1983.

The researcher undertook a study of the cardamom market in the London market in August-September 1985. Personal investigations with the traders revealed that London importers get cardamom from all producing sources, depending upon the prices. The Tanzanian cardamoms, long in size but bad in looks, go for preparing bleached varieties in London or for making cardamom powder. Green cardamoms, bleached cardamoms and powdered cardamoms are packed in attractive consumer packs, both in glass bottles and polythene bags and sold in the departmental stores and grocery shops. Part of the imported cardamoms go into the curry powder industry and rest for food flavouring purposes.

The Asian and African population in the U.K. is substantial. All the cardamom producing countries except Guatemala have close political histories connected with Britain. Asians also dominate in the spices trade in London. These are the reasons for the import of cardamoms by Britain from all producing countries. The selling of cardamom capsules in consumer packs in U.K. is also aimed at the Asian population, especially from India, Pakistan, Sri Lanka, Bangladesh, Singapore, Malaysia, etc.

Table 9.15

U.K.: Source-wise import of cardamom: 1976 to 1983

(Quantity in M.T./ Unit price in Indian Rs./kg.) Figures in brackets are percentages in total

Year	Producing Countries																	
	India			Guatemala			Tanzania			Sri Lanka			Others			All countries		
	Quantity	Unit price	Unit price	Quantity	Unit price	Unit price	Quantity	Unit price	Unit price	Quantity	Unit price	Unit price	Quantity	Unit price	Unit price	Quantity	Unit price	Unit price
1976	63 (67)	29.26	-	-	16 (17)	45.52	7 (7)	102.41	8 (9)	NA	NA	94 (100)	39.04					
1977	45 (66)	46.55	-	-	13 (19)	77.40	▼	-	10-(15)	NA	NA	68 (100)	63.07					
1978	35 (41)	109.48	2 (2)	202.64	8 (9)	124.35	32 (37)	67.55	9 (10)	NA	NA	86 (100)	91.25					
1979	60 (61)	58.99	9 (9)	142.33	17 (17)	126.62	11 (11)	213.71	2 (2)	NA	NA	99 (100)	96.98					
1980	45 (26)	56.65	95 (57)	43.64	16 (10)	72.97	-	-	12 (7)	NA	NA	168 (100)	57.70					
1981	49 (47)	26.54	32 (30)	58.78	24 (23)	43.89	-	-	-	-	-	105 (100)	41.25					
1982	30 (32)	29.42	48 (56)	80.87	4 (5)	36.28	5 (6)	125.77	1 (1)	NA	NA	88 (100)	65.28					
1983	69 (49)	54.44	46 (33)	91.44	3 (2)	73.22	1 (1)	219.65	22 (16)	NA	NA	141 (100)	73.76					
Average (49)			(23)		(13)		(7)		(8)			(100)						

Note: NA - Not available; - Nil

Source: 1. High Commission of India, London

2. Eurostat, India Trade Centre, Brussels.

A significant feature noticed in the pattern of imports of cardamom into U.K. is that Guatemala, which had a share of only two per cent in 1978, increased its share to 33 per cent in 1983. Total consumption, indicated by the volume of imports, also increased in the meanwhile.

Japan

In the West Asian region, Japan is the major importer of cardamom. The pattern of imports of cardamom into Japan is given in Table 9.16.

From the Table it can be seen that Japan imports cardamom from all available sources, including the producing and non-producing countries. India's share in the Japanese market was 58 per cent or 90 M.T. in 1974. This increased to 77 per cent or 125 M.T. in 1980. This declined to 40 per cent or 58 M.T. in 1984. Guatemala at the same time had a share of 7 per cent or 12 M.T. in 1974, which increased to 21 per cent or 27 M.T. in 1979. The share of Guatemala declined in the next two years, but picked up in 1982 and reached a level of 30 per cent or 43 M.T. in 1984. The total imports of cardamom into Japan showed an erratic pattern, but increased from 84 M.T. to 162 M.T. during the period 1974-75 to 1983-84.

Personal investigations by the researcher in Japan in 1982 and 1984 revealed that the bulk of the

Table 9.16

Japan: Source-wise import of cardamom: 1974 - 1984

(Quantity in M.T.; Unit price in Indian Rs./kg.; Figures in brackets are percentages in total)

Year	Producing countries						Non producing countries			All countries		
	India		Guatemala		Others		Total			Total		
	Quantity	Unit price	Quantity	Unit price	Quantity	Unit price	Quantity	Unit price	Quantity	Unit price	Quantity	Unit price
1974	90 (58)	72.65	12 (7)	57.12	43 (28)	37.63	11 (7)	47.55	156 (100)	60.12	60.12	60.12
1975	56 (60)	84.95	11 (12)	59.20	9 (10)	50.11	17 (18)	35.44	93 (100)	68.38	68.38	68.38
1976	51 (61)	91.25	4 (5)	73.86	10 (12)	73.44	19 (22)	24.65	84 (100)	69.89	69.89	69.89
1977	89 (67)	162.25	18 (14)	131.76	12 (9)	110.95	14 (10)	122.78	133 (100)	137.44	137.44	137.44
1978	57 (64)	108.76	8 (9)	82.12	7 (8)	87.04	17 (19)	76.56	89 (100)	93.89	93.89	93.89
1979	79 (62)	128.66	27 (21)	72.98	6 (5)	85.07	15 (12)	110.01	127 (100)	102.41	102.41	102.41
1980	125 (77)	124.65	12 (7)	59.00	9 (6)	68.11	16 (10)	88.03	162 (100)	105.18	105.18	105.18
1981	103 (73)	76.75	12 (9)	44.73	11 (8)	42.44	14 (10)	44.44	140 (100)	65.01	65.01	65.01
1982	64 (53)	146.89	27 (22)	87.45	9 (7)	66.00	21 (18)	87.90	121 (100)	107.43	107.43	107.43
1983	77 (54)	213.31	39 (28)	100.23	6 (4)	208.31	20 (14)	153.57	142 (100)	198.56	198.56	198.56
1984	58 (40)	265.26	43 (30)	220.13	12 (8)	160.76	31 (22)	169.61	144 (100)	200.51	200.51	200.51
	(61)		(15)		(9)		(15)		(100)			

Source: Embassy of India, Tokyo.

cardamom imported into the country goes into the curry powder industry. The Japanese, therefore, need only lower grades of cardamom at competitive prices. A part of the imported cardamom is used for distilling oil and oleoresins for flavouring, mouth fresheners, bakery products and sausages. The use of cardamom as capsules and cardamom powder are non-existent.

Conclusions

The discussions above and the analysed data given in Tables 9.1 to 9.16 lead to the following main conclusions and recommendations.

- (i) The Middle East nations are the largest consumers of cardamom in the world.
- (ii) As a single nation, Saudi Arabia consumes over 5000 M.T. of cardamom per annum according to the 1984 figures constituting over 50 per cent of world production. The per capita consumption of cardamom in Saudi Arabia is 1.99 gms. per day; the highest in the world.
- (iii) The second largest importer of cardamom is Kuwait, but a substantial part of the imported cardamom is re-exported to other nations, again in the Middle East.
- (iv) There has been substantial increase in the consumption of cardamom in the Middle East nations during the past few years.
- (v) The increase in the world consumption of cardamom has been well-utilized by Guatemala by offering good quality cardamoms at competitive rates.

- (vi) The Middle East countries prefer bold green varieties of cardamom and the higher unit price of cardamom was not a major determinant in their buying decisions.
- (vii) The consumption of cardamom was more or less stagnant in West European countries. Except in U.K., India has been totally displaced in West Europe by Guatemala.
- (viii) In West Asia, especially in Japan, the increased demand is met by Guatemala and other producing nations.
- (ix) In Europe, price is the main criteria for buying cardamom. The colour, appearance, size, etc., are not particularly valued in the European markets.
- (x) The consumption in the communist countries of Europe, especially in U.S.S.R. and G.D.R., has increased and India is the supplier of cardamom to these communist countries because of bilateral trade agreements.
- (xi) There is good scope for India to export value added items like cardamom oil, oleoresins, etc. to West Europe provided the prices are competitive.
- (xii) India should review its quality and pricing strategies to recapture the West European markets.

From the point of India's export strategy on cardamom, it would be necessary for India to adopt a new strategy based on the following considerations.

- (i) In the matter of export of value added items like cardamom oil and oleoresins to Western Europe, the communist countries and Japan Care should be taken that these

are of uniform strength, unlike now. This will fetch added value to the exports as it provides greater convenience of use to the consumers.

(ii) Dispersing with the present system of grading in exports to West European and communist countries. They won't be necessary as cardamom exports in future will be in the processed form.

(iii) Propagating additional uses of cardamom in the consuming countries, such as by its medicinal and flavouring properties.

(iv) Exports to the Middle East countries may be gradual i.e., in seed, powder or oil form, depending upon studies on consumer behaviour and use.

(v) Identification of new markets and uses for cardamom, necessarily in collaboration with other producing countries, by forming an organization of cardamom exporting countries.

(vi) A new aggressive role by the Cardamom Board to initiate research and implement policies with regard to the identification and propagation of existing and new uses of cardamom, looking for new uses and markets and the financing of units for the production of value added products from cardamom.

CHAPTER X

CURRENT AND POTENTIAL USES OF CARDAMOM

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CHAPTER X

CURRENT AND POTENTIAL USES OF CARDAMOM

Cardamom is a versatile spice as far as its uses are concerned. Varied are the uses to which cardamom is put. Perhaps, this is the only spice that can flavourfully blend with anything edible or potable. Cardamom goes extremely well with coffee, tea, milk, fruit juices, soft drinks and alcoholic beverages. It also enhances the taste and flavour of vegetable curries, meat preparations, bakery products and toffees. Cardamom is also widely used in ayurvedic and other systems of medicines.

The Aroma and Flavour

Cardamom flavour is smooth, spicy, slightly bitter, camphoraceous, cinolic, sweet, cooly, lemony with a tingling, mentholic after-taste. With its aromatic content, it is ideal for supplementing or fortifying an existing flavour or for camouflaging or modifying some undesirable flavour inherent in the base product.

"Cardamom is rich in protein, carbohydrates, calcium, phosphorus, iron etc. The analytical results of cardamom capsules are as under:

(1) Moisture	:	20.0	per cent
Protein	:	10.2	" "
Eather extract	:	2.2	" "
Mineral matter	:	5.4	" "
Crude fibre	:	20.1	" "
Carbohydrates	:	42.1	" "
Calcium	:	0.13	" "
Phosphorus	:	0.16	" "
Iron	:	5	mg/100 gm.
(2) Volatile matter:	:	19.1	per cent
in crushed seeds			
Ash	:	4.4	" "
Yield of oil			
on dried seeds	:	7.4	" "

It is the volatile oil, which is present to the extent of 6 to 8 per cent in the seeds, that gives cardamom its characteristic aroma and related properties. The husk also contains about 0.2 per cent of the oil. The oil is a colourless or pale yellow liquid with a penetrating odour and pungent taste. The oil of cardamom is obtained by steam distillation of whole fruits and contains cineol, terpineol, terpinene, limonene and sabinene."¹

Cardamom oil is volatile. It is easily soluble in alcohol. This is advantageous in its use for flavouring. But the oil lacks the full flavour of the cardamom seed. Oleoresin of cardamom is prepared by

¹Sahadevan, P.C., Cardamom (Trivandrum, 1965), pp.55-56.

solvent extraction of ground seeds and the subsequent removal of the solvent. It is a dark green liquid containing 70 to 75 per cent volatile oil. It provides the full rich and warm flavour associated with the spice and is marketed as such or after dilution with oils or propylene glycol. Water soluble cardamom oil has also been developed by certain industrial units and are marketed in consumer packs.²

It has been pointed out that solvent extraction of oleoresin is a superior method to steam distillation of oil. This is because "oleoresins contain natural fixatives that tend to depress the volatilization of essential oil during heat processing. In addition, differences both in concentration and constituents exist in oils derived from an oleoresin as compared with the corresponding steam distilled oil. Higher boiling constituents, important for flavour quality, are present in greater concentration in the essential oil portion of oleoresins. This is true in the case of cardamom oleoresin also."³

The 'Gahwa' or Cardamom-coffee

When the usage pattern of cardamom is analysed, it can be seen that, in the Middle East countries, where

²Messrs. Synthite Industrial Chemicals, Cochin and Devi Industries, Madurai are known to have developed their own processes for this.

³Lewis, W.S., Spices and Herbs for the Food Industry, (Orpington, England, 1984) p.54.

the highest per capita consumption of cardamom is prevalent, cardamom is mainly used for the preparation of 'Gahwa' or 'cardamom-coffee'. Drinking of 'cardamom-coffee' is a universal habit among Saudees, Kuwaitees, Qatarees and others, and in fact, forms part of Arab tradition and culture. Serving of 'Gahwa' to guests is regarded as a foremost gesture of hospitality by the Arabs. In their daily life Gahwa is taken at all times of the day, but it is customary to take it after each meal, lunch or dinner. In the Gahwa, which is a mixture of cardamom and coffee decoctions, the content of cardamom goes up from 50 to 90 per cent, depending upon the affluence of the person serving it.

It is important to note that the custom of drinking cardamom-coffee is prevalent only among the Arabs of the Persian Gulf countries and not among other Arabs in Lebanon, Syria, etc., who prefer to take "Turkish coffee", "Gahwa-Turk" as they call it, in which cardamom is added in small quantities not exceeding five per cent. The extent of cardamom used in cardamom-coffee thus varies from three per cent to 90 per cent among different sections of people in the Middle East. It is also interesting to note that the Government of Qatar imports cardamom from India and elsewhere and distributes the same through ration shops as an essential commodity.

Arabs also use cardamom in rice and meat preparations. They buy bold green capsules of cardamom and use it after grinding it afresh. It is also customary to show the quality of cardamom to the guests as a matter of prestige before it is used in the preparation and serving of Gahwa to them.

It can be estimated that over 5000 M.T. of cardamom go into the preparation of cardamom-coffee in the Middle East countries, especially in Saudi Arabia, Kuwait, Qatar, etc. in recent years considering the imports of cardamom into these countries.⁴

India is the second largest consumer of cardamom after Saudi Arabia. The main use in India is for flavouring food preparations especially sweet dishes. Pan masala or chewing mixture is another area in which cardamom is consumed in large quantities. In fact, cardamom traders and exporters have developed a particular grade of cardamom entitled 'panbar', resembling agmark grade of AGS 2 for supplying to panwalas in North Indian centres. The pan is a mixture of betel nut, arecanut, chewing tobacco etc. and a capsule of cardamom. It is usually taken after the food and is said to be good for easy digestion when heavy meals are taken. Of late, manufactured pan masalas are also available in consumer

⁴See discussions in Chapter IX.

packs to be used as mouth freshners. The consumption of freshly made 'pan masalas' and manufactured ones are very common and popular in north India, that the consumption of cardamom in this area would be somewhere around 200 to 300 M.T.

Hotliers and bakers constitute two other important groups which use cardamom in large quantities. They utilize cardamom for flavouring food items, sweets and bakery products.

Cardamom in Medicines

Cardamom also finds an important place in Ayurvedic medicines and in a few medicines of other systems. Cardamom is a powerful aromatic, carminative, stomachic, and diuretic and checks nausea and vomiting. Cardamom is also said to be an effective cardiac stimulant and is indicated to be good for bronchial ailments. It is also believed in certain countries to be an aphrodisiac.

It has been pointed out that,

"in the great Ayurvedic treatises like Charaka and Susruta, 'ela' is mentioned as a drug of choice in the management of diseases of digestive, respiratory and urogenital systems. They are however rarely prescribed alone, but commonly as adjuvants or correctives of cardiogenic, bronchodilative and digestive medicines."⁵

⁵Bhat A.V. and others; Medicinal uses of Ela (unpublished paper presented at Cardamom Day Seminar, Trivandrum, January 1986) p.2.

"Due to its pungent and bitter taste, it works as a stimulant, digestive, expectorant and 'kapaharam' (antiphlegmatre). Due to its cooling character bitter and sweet 'rasa', it subsidises the vitiation of 'pitha' (controls biliousness, stimulates enzymes and digestive juices). It is a strong carminative - in the sense that it assists in expelling gas from the stomach and intestine. It also induces relaxation of the intestinal and cardiac muscles and improves appetite. It is effective in 'kasaswasa' (respiratory diseases) 'arsos' (piles), 'mutra kricha' (dysurea) and burning sensation. In respiratory diseases such as bronchitis, bronchiectasis, emphysema and asthma it is used as an expectorant, mild bronch dilator and stimulant of respiratory centre."⁶

In short, "cardamom is used in as many as 24 of the most important preparations in Ayurvedic, in the form of decoctions, oils and powders as well as medicated fermented beverages like, 'arishta' and 'asava'".⁷

According to the Unani system of medicine, cardamom "checks nausea, vomiting, headache, refrigerant, resolvent, cardiac stimulant, absorbs moisture, expels wind, helps digestion, hepatic colic".⁸

⁶ Ibid., p.2.

⁷ Sahadevan P.C., Cardamom, (Trivandrum, 1965) p.57.

⁸ Bhat A.V. and others, Ibid., p.2

Cardamom is also believed to be an aphrodisiac, though this aspect has not been scientifically proved, or reported in medical research. The belief has probably come because people who take a lot of cardamom like the Arabs in the Middle East, are supposed to have more sexual vigour and vitality.

In the Chinese system of medicine, cardamom oil is described as an aromatic, carminative and stomachic. Cardamom is also prescribed as stomachic and tonic in gastralgia, enuresis, supermatorrhea. Dose 3-5 gm⁹.

In India, cardamom is used in allopathic preparations like carminative mixture, tincture, etc. In medicines like Disogel, which is used in the treatment of gastric and duodenal ulcer, Digene, etc. cardamom is used as a flavour. However, in no other country other than India, cardamom is used as a medicine or flavouring agent in medicine.

Also in India, certain health foods have been brought out with cardamom flavour. Cakes, biscuits, toffees, chewing gums, etc. with cardamom flavour are popular in the Indian market.¹⁰

⁹Keys, John D., Chinese Herbs - their Botany, Chemistry and Pharmacodynamics, (Tokyo, 1976) p.76.

¹⁰Health foods: Horlicks, Complian, etc.
Medicines: Disogel, Digene, etc.
Cakes, biscuits, and confectionary: Fruite, True, Nutrine etc.

Muslims in north India, who smoke hukkah, add cardamom husk to tobacco in the ratio 1 : 3. Betel-nut factories in Andhra Pradesh mix cardamom with supari as flavouring agent. Kimam is a tobacco paste, made spicy by adding cardamom. Cardamom is also added to scented tobacco. Cardamom is sometimes presented as a prestigious gift during marriages and festivals.

India exports large quantities of curry powder to Europe, the Middle East, U.S.A., etc. for the Asian population there. Though Indian curry is becoming more and more popular in those countries and some curry powder manufacturers in India use cardamom as an ingredient of curry powder, the percentage of cardamom going into this industry is not very significant.

Though western countries import cardamom as capsules, they use it as powder, oil, oleoresin, etc. in the preparation of ready to use food or beverages.

A combination of essential oil mixtures, specially prepared from cardamom known as 'bakeresin' is now in use in bakeries in Europe. For extraction of super-resin and bakeresin, cardamom of different varieties viz. green, bleachable white, decorticated, etc. are used depending upon the type of food resins required.

While the Scandinavians mainly use cardamom in the baking of 'coffee-cake', the British and Japanese use it in 'curry', ham and sausages. The Germans use cardamom in various spice mixes for sausages and processed meat products. The Americans use it in baked foods and the Russians in pastries, cakes, and confectionary. In certain European countries cardamom is used in beverages, including alcoholic liquors. In France, it is used in perfumes, colognes, and toileteries.

Very recently, a Guatemalan company has come out with a cardamom chewing gum and is trying to promote it in Europe and Britain. Likewise, one firm from El Salvador has come out with cardamom-tea bags (green tea) and cardamom liqueur with a common brand name 'Cardamom Pleasure'. The promotional literature and the consumer packs of these two products mention about the legend that cardamom is an aphrodisiac.

Apparently, there are definite possibilities of developing new end uses and new markets for cardamom. But, unfortunately, neither India nor any other cardamom producing country, including Guatemala has made any concerted effort in developing new products and markets for cardamom, at least by utilizing the available information on the usage of cardamom. All are concentrating

their attention and resources on increasing the production of cardamom. As was pointed out in the earlier chapters, this has turned the world cardamom market from a sellers' into a buyers' market.

Potential uses

The future of cardamom industry as a whole, and that of India in particular, mainly depends upon its entry into the food industry and certain nonfood industries. New uses and related products have also to be developed. Along with marketing of cardamom capsules, its oil, oleoresin and powder in attractive consumer packs in the existing markets could be marketed. Products with cardamom have been recommended as follows:

A. Flavouring

1. Instant 'gahwa' or cardamom-coffee (in different ratios of cardamom and coffee).
2. Cardamom tea-bags.
3. 'Curry' powders and similar products.
4. Ethnic foods.
5. Processed meats and sausages.
6. Baked foods - breads and cakes.
7. Confectionery - biscuits, sweets, toffees, chewing gum, bubble gum.
8. Beverages - alcoholic liquors, liqueurs, soft drinks, fruit juices, etc.
9. Herbal and plant infusions.
10. Ice-creams.

11. Processed fruits.
12. Fish products.
13. Tooth paste, mouth wash etc.
14. Chewing and smoking tobaccos, cigarettes etc.

B. Medicines.

1. Pharmaceutical products.
2. Health foods and drinks.

C. Fragrance

1. Perfumes.
2. Colognes.
3. Air freshners.
4. Shampoos.
5. Toilet cleansers.
6. Soaps.
7. Paints.

Research on the medicinal properties of cardamom may be taken up. At present it is mostly perceived as a luxury product. Any breakthrough in the medical research on cardamom can make it a necessary or essential product. Research on product development and new uses of cardamom may also be taken up alongwith popularising its usage in manufactured products on the lines mentioned above.

The potential of cardamom use in health and medical preparations was highlighted in a study undertaken jointly by the Cardamom Board, Cochin and the International Trade Centre, was mentioned in the Report, that

"This is an area, constantly of growing consumption, and in the market in the countries such as West Germany and France, which a few years ago was almost insignificant, has mushroomed, so that an estimate made for the consumptions in 1979 in these two countries indicated a total of 15,000 tons being consumed. This of course, covers the whole spectrum of herbs and spices suitable for this type of product."¹¹

The Cardamom Board's promotional activities are confined to participation in selected food fairs and exhibitions in India and abroad. The Board has a trade promotion cum market intelligence office in Bahrain, which undertakes promotional activities for Indian cardamom in the Middle East. The promotion for cardamom undertaken in India is negligible. When considering the promotional requirements of Indian cardamom, the amounts expended by the Cardamom Board are quite inadequate as can be seen from the discussions in Chapter XI.¹²

¹¹I. T. C. (UNCTAD/GATT), Prospects for new end uses of Indian cardamom, (Geneva, 1983) p.16.

¹²See Chapter XI

The superior value and quality of Indian cardamom, its powder, oil etc. may be highlighted in promotional activities. The promotional activities of the Cardamom Board also require to be intensified. Standards may be set for cardamom oil and oleoresins and brought under quality control and pre-shipment inspection before export, as the future use of cardamom is likely to be in the form of powder, its oils and oleoresins. Industrially, cardamom is known to both flavourists and perfumers in the western countries, but its use is limited because of the nonavailability of cardamom in processed forms of standardised strength. Value added exports of cardamom oil, oleoresin and cardamom flavoured products are possible with necessary support from Government as the exporters by themselves will not be able to do so. The flavour content in cardamom, cardamom powder and oil is highly volatile and therefore research is necessary to find out how the flavour of cardamom in all stages of production, curing, manufacturing, packing, transit and storage can be retained. This will ensure wider uses of cardamom.

At present, the cardamom industry of the world is dependent on the Middle East nations for its existence and survival. The oil boom in the Middle East is

receding. This will adversely affect the sale of cardamom in the Gulf countries. The buying pattern of cardamom in Middle East is also seen to be changing.¹³ It is found that there is increasing demand for the so called lower grades of green cardamom. This will be to India's disadvantage. It is also seen that buying in smaller quantities for immediate use is also becoming prevalent. Unlike in the past, increased availability of cardamom has made the importers bargain for prices, quality and quantity. This has led to a situation of acute competition, which will be to the disadvantage of Indian cardamom which had all along enjoyed a price advantage. Product use and market diversification will be the only way out. Promotion of research for diversified uses of cardamom and of efforts for market development require greater attention.

Cardamom is not yet seen as an essential commodity. Therefore, the promotion cost involved in cardamom and its products would be much higher than that of many other similar commodities like tea and coffee. This is a job which no private agency of producers or exporters can undertake. The cost involved in this effort is so large and the effort so diverse that only

¹³Source: Discussions with the exporters.

a public agency with large resources and organisation will be able to undertake these responsibilities. The obvious choice will be the Cardamom Board in India. Efforts are required in three directions: (a) Research to find new uses for cardamom; (b) Promotional efforts to intensify the present ways of consumption of cardamom and to exploit the new markets for the new uses of cardamom identified by research; and (c) To arrive at an understanding with other producing countries for avoidance of a price war, using the above two as a base for the understanding.

CHAPTER XI

A POLICY FOR THE DEVELOPMENT OF INDIAN CARDAMOM INDUSTRY

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CHAPTER XI

A POLICY FOR THE DEVELOPMENT OF INDIAN CARDAMOM INDUSTRY

The development of the cardamom plantation industry was mainly under the purview of the State governments of Kerala, Karnataka and Tamilnadu which are the producing States in the country, until 1966.

The position of cardamom as a foreign exchange earner among the Indian agricultural products was unique for the reason that India held at one time a near monopoly position in the world trade in cardamom. The Indian Government was fully aware of the importance of cardamom as a potential foreign exchange earner, but there were certain deficiencies in production and marketing experienced by the cardamom industry. With a view to making good those deficiencies, the Government of India constituted a Cardamom Development and Marketing Advisory Committee in 1963. There was also a Directorate of Cardamom Development and Marketing to assist the Advisory Committee, in the execution of its policies and programmes. In view of the several problems faced by the industry, the Advisory Committee, after functioning for a period

of two years, recommended that a statutory commodity board on the lines of the Coffee Board, having overall control on the various facets of the cardamom plantation industry be set up.

The Constitution of the Cardamom Board

As per the recommendations of the Advisory Committee and considering strong public demand, the Cardamom Act 1965, viz. Number 42 of 1965 was enacted in December 1965. The Cardamom Board came into existence with effect from the 15th April 1966.

The Cardamom Act, 1965 seeks to promote the allround development of the Indian cardamom industry. Under Section 9 of the Cardamom Act, 1965 it was enacted that "it shall be the duty of the Cardamom Board to promote by such measures as it thinks fit, the development under the control of central government of cardamom industry".¹ The measures referred to may provide for

- "(a) promoting co-operative efforts among growers of cardamom;
- (b) ensuring remunerative returns to growers of cardamom;
- (c) financial or other assistance for improved methods of cultivation and processing of cardamom for replanting and for extension of cardamom growing areas;
- (d)

¹Government of India, Cardamom Act 1965 and Cardamom Rules 1966 (published by Cardamom Board, Cochin, 1979) p.9.

regulating the sale and export of cardamom and stablization of prices of cardamom; (e) training in cardamom testing and fixing grade standards of cardamom; (f) increasing the consumption in India and elsewhere of cardamom and carrying on propaganda for that purpose; (g) registering and licensing of brokers (including auctioneers) of cardamom and persons engaged in the business of cardamom; (h) improving the marketing of cardamom in India and elsewhere; (i) collecting statistics from growers, dealers and such other persons as may be prescribed on any matter relating to cardamom industry, the publishing of statistics so collected or portions thereof or extracts therefrom; (j) securing better working conditions and the provision and improvement of amenities and incentives for workers; (k) undertaking assisting or encouraging scientific, technological and economic research; and (l) such other matters as may be prescribed".²

The Cardamom Board has a membership of 23 persons consisting of a Chairman, appointed by the Central Government; a Director of Cardamom Development, ex-officio; three members of Parliament, two elected by the Lok Sabha and one elected by the Rajya Sabha; three members to represent Central ministries of Commerce, Agriculture and Finance; and fifteen other members

²Ibid., pp.9-10.

representing the principal cardamom growing States of Kerala, Karnataka and Tamilnadu, cardamom growing interests, trade interests, labour interests, consumer interests, and other unrepresented interests. They are all to be appointed by the Central Government. The Board is advisory in nature, but has some executive powers with regard to large financial transactions within the budgetary sanctions of the Parliament of India. The funds of the Board come from a three per cent ad valorem cess levied on all cardamoms exported from India, and grants and loans sanctioned by the Central Government after due appropriation made by the Parliament.

From the discussions above, it may appear that the Cardamom Board is the single, central agency which is provided with sufficient authority, funds and freedom to develop the cardamom industry as it thinks fit, under the control of the Central Government. But in practice, there is a multiplicity of organisations, which are entrusted with the task of control or development of the cardamom industry. The following are the institutions at work in the control and development of Indian cardamom plantation industry.

- (1) The Central Plantation Crops Research Institute (CPCRI), Kasargod, under the Indian Council of Agricultural Research (ICAR) of the Central

Ministry of Agriculture, undertaking fundamental and adaptive research on cardamom culture.

- (2) The University of Agricultural Sciences, Bangalore and the Kerala Agricultural University, Trichur undertaking fundamental and adaptive research on cardamom culture.
- (3) Directorate of Marketing and Inspection, Nagpur, of the Central Ministry of Agriculture, undertaking quality control and preshipment inspection of cardamom under 'agmark' grades.
- (4) The Cardamom Trading Corporation of India under the Central Ministry of Commerce, undertaking development, marketing and market promotion of cardamom.
- (5) The Spices Export Promotion Council, Cochin under the Central Ministry of Commerce, undertaking the export promotion of cardamom and other spices.
- (6) The Trade Fair Authority of India, New Delhi under the Central Ministry of Commerce undertaking the participation in foreign fairs and exhibitions for promotion of cardamom.
- (7) The Central Food Technological Research Institute, Mysore under the Central Ministry of Science and Technology, undertaking research on post-harvest technology, including curing, end uses etc. on cardamom.

- (8) The Regional Research Laboratory, Trivandrum under the Council for Scientific and Industrial Research (CSIR) of the Central Ministry of Science and Technology, undertaking research on post harvest technology including curing, end uses, etc. on cardamom.
- (9) Indian Standards Institution (ISI) under the Central Ministry of Industry, undertaking studies on grade standards for cardamom.
- (10) The State Governments of Kerala, Karnataka and Tamilnadu undertaking activities connected with various aspects of the cardamom cultivation, processing, exports, etc. and taxation.

Controls, Regulations and Taxation

The practical difficulty in the present system is to make different organisations undertake development work for cardamom industry in a co-ordinated manner. Difficulties also arise when it comes to controls or regulations by different governmental agencies and that too, often, in the same area of operation.

Under the Mysore Agricultural Produce Markets Act, 1939 and its successor Karnataka Agricultural Produce Marketing (Regulation) Act 1966, the Government of Karnataka has been collecting a marketing cess of two per cent on cardamom with effect from 13.10.1953. Even after the

promulgation of the Central Government's Cardamom Act, 1965 with effect from 5.4.1966, the marketing cess of two per cent was continued to be collected by the Karnataka Government. The controls and regulations imposed by the State Government on the market functionaries in cardamom were also continued, even after the implementation of the Cardamom (Marketing and Licencing) Rules, 1977 by the Cardamom Board and the Central Government. The growers and traders of cardamom in Karnataka filed petitions in Karnataka High Court against this dual and contradictory controls by State and Central Governments and collection of the marketing cess by the State Government. After a prolonged legal battle, the High Court of Karnataka deleted cardamom from the purview of the above State Act with effect from 25.11.1982. There was also an octroi of half a per cent for intertaluk movements of cardamom in Karnataka State till recently. The controls and regulations by both the Central and State Governments and the cess and octroi collected by the Karnataka government not only created confusion in the trading of cardamom, but also depressed the prices of cardamom in Karnataka from 1966 to 1983.

The registration of cardamom holdings is vested with the state governments of Kerala, Karnataka

and Tamilnadu, whereas the power of licencing auctioneers, dealers, and exporters is vested with the Cardamom Board. The registration of cardamom holdings does not envisage any ownership right over the land planted with cardamom. As such, this function could have been entrusted with the Cardamom Board, so that it could plan its developmental strategies depending upon the information on size of the holdings, yielding area, non-yielding area, etc. The Board is also handicapped with the nonavailability of accurate statistics on production, productivity, etc. in this context. Though the law on registration of holdings came into existence in 1966, the process of registration is incomplete even in 1985. It would be desirable for the Cardamom Board to undertake a census of cardamom plantations in the country, even if it is not vested with the statutory function of registration of cardamom holdings.

More than 10,000 hectares under cardamom are on lease lands³. Because of the uncertainty of the extension of lease right or award of ownership, the cardamom growers in possession of lease lands do not take any real interest in the development of plantations. It is necessary that the State governments should spell out their policies on lease lands under cardamom.

³Cardamom Board, Commodity Note on Cardamom, (Cochin, 1985) p.37.

The Government of Kerala and Tamilnadu levy a sales tax of five per cent and four per cent respectively on cardamom to be paid by the growers. The Government of Karnataka is collecting a three per cent purchase tax. This is to be paid by the traders or exporters. The details of the taxation structure in the three States are given in Appendix III. It may be noted that the cardamom growers in Kerala are more heavily taxed than their counterparts in Karnataka and Tamilnadu. A review of the taxation policies in Kerala and any possible reduction in the rates would be helpful for the growth of cardamom industry in Kerala. So also, a uniform taxation at the first sale point in the three States may help to reduce the evasion of tax and unaccounted sales, as was noted above.⁴

The agricultural income tax rates on cardamom growers in Kerala, Karnataka and Tamilnadu are fundamentally different, as could be noted from Appendix III.

From the discussions above, it can be noted that the multigovernmental controls and regulations by State and Central Governments have created difficulties for cardamom growers and have adversely affected the growth of the industry in India. The heterogenous taxation system adopted by the governments of the three cardamom growing States and the unreasonable taxation

⁴See Chapter VIII.

system followed by the Government of Kerala have led to a large volume of unaccounted sales and interstate smuggling of cardamom. This has not only resulted in loss of revenue to the State , but also prevented the Cardamom Board from collecting dependable statistics on cardamom production and marketing which would have enabled proper formulation and implementation of marketing policies and strategies. It would be advisable if the three State governments and the Cardamom Board meet and review their policies and all other matters connected with registration and taxation of cardamom. Appropriate decisions conducive to the development of cardamom industry in India can then be taken by all the concerned agencies. It may be possible to arrive at decisions helpful to the cardamom growers and conducive to the development of the industry, without any loss of revenue to the State governments.

In the control and regulation of trade in cardamom it was seen that, three market functioneries such as the auctioneers, primary dealers and exporters are licenced by the Board. As was discussed in Chapter VIII, it may be advisable to take over the function of auctioning by cooperatives of the cardamom growers or by the Cardamom Board or the Cardamom Trading Corporation.⁵ This would go a long way to protect the

⁵This was discussed in detail in Chapter VIII.

interests of cardamom growers, especially the small growers. The pooling of cardamom by Cardamom Board, as is being done for coffee by the Coffee Board, could also be thought of, for safeguarding the interests of cardamom growers.⁶ The Cardamom Board at its meeting held in 1973 passed a resolution to adopt pooled marketing in cardamom, as in the case of coffee. But this decision was not implemented as it was not approved by the Government of India.

Research and Development

As in the case of controls and regulations, the Cardamom Board is the central agency of the Government of India statutorily responsible for allround development of the cardamom industry. But, as was noted

⁶Pooling system in Coffee: The entire coffee beans produced in the country, except the quantity required by the grower for own use, is sold to the Coffee Board. The Board pays a fixed price to the growers on surrender of the coffee beans. The coffee thus pooled by the Board is sold to private dealers, grinders and exporters in two separate public auctions periodically. One such auction is meant for internal retail sales and consumption, and the other is for exports. Quotas are fixed by the Board from time to time for quantity of auction for domestic use and exports, depending upon the requirements in India and the quota allotted to India for exports by the International Coffee Organisation. The difference between the price realised at the auctions and the price paid to the growers initially is again paid to the growers as bonus, after deducting the marketing expenses. This system is in prevalence, after the Coffee Board was constituted.

above, quite a large number of agencies are also engaged in the task. Theoretically, it may appear good that agencies specialised in different functions undertake the research and development activities in cardamom according to their specializations. But in practice, as far as the cardamom plantation industry is concerned, it is not so, especially in the matter of research on cardamom culture, technological improvements in curing, storing, quality preservation and diversification of end uses.

The Central Plantation Crops Research

Institute (CPCRI) under the ICAR is entrusted with the task of undertaking fundamental research on cardamom culture, whereas the adaptive research is entrusted with the Indian Cardamom Research Institute of the Cardamom Board. The CPCRI has many plantation crops to deal with, and the funds and scientists allotted for research work on cardamom are far from satisfactory.⁷ The scientists of the CPCRI are also away from the day to day problems of cardamom cultivation, as they are not directly in touch with the cardamom growers. Also, unlike in the case of Cardamom Board, the degree of interest that the CPCRI can take in the cardamom industry cannot be very intense. It is important to

⁷Discussions with Director, CPCRI, Kasargod.

to note that other commodity Boards like the Coffee Board, the Rubber Board, etc. are entrusted with the entire task of cultural research of the respective crops, whether fundamental or adaptive. The positive results of this arrangement are quite revealing, compared with those in cardamom. The Indian Government can perhaps consider entrusting the entire responsibility of cultural research with the existing Indian Cardamom Research Institute of the Cardamom Board and provide sufficient funds for the cultural research activities. The cultural research division of the Cardamom Board was also so weak that it had no Director of Research till August 1986.⁸

The research on technological improvements in cardamom curing, storing, quality preservation, end use development, packaging etc. are undertaken by the Central Food Technological Research Institute, Mysore, the Regional Research Laboratory (CSIR), Trivandrum and the Indian Institute of Packaging, Bombay. These institutions undertake only sponsored projects supported by the Cardamom Board or other funding agencies. The sponsored programmes and the funds provided for technological research have so far been very meagre. It is high time that the Cardamom Board gives due importance to technological research either

⁷As understood from the Cardamom Board.

by undertaking this activity by itself or by sponsoring projects of technological research on cardamom by competent agencies. This will be in the long term interest of the industry.

Participation in select foreign fairs and exhibitions is mostly organised by the Trade Fair Authority of India, New Delhi. Often, experts on cardamom from the Cardamom Board are absent at these exhibitions to attend to the visitors' queries and trade enquires. The last minute clearance for participation in the exhibitions makes the Board's participation ineffective.⁹ When government clearance is not received well in time, there will be no proper preparation and home work.

Activities of the Cardamom Board

The budgetary expenditure of the Cardamom Board from 1970-71 to 1984-85 is given in Table 11.1. Though the Cardamom Board was constituted in April 1966, its budgetary expenditure upto the year 1970-71 was less than Rs.15 lakhs per annum. The period 1966-67 to 1970-71 has not, therefore, been taken for the purpose of this study.

From Table 11.1 it can be seen that, on an average, for the fifteen year period from 1970-71 to

⁹Discussions with Chairman, Cardamom Board.

Table 11.1

Budgetary Expenditure of Cardamom Board: 1970-71 to 1984-85

(Expenditure is in Rs./lakhs; Figures in brackets are percentages of total)

Year	Expenditure on production development	Expenditure on market development	Other expenditure	Total expenditure
1970-71	11.64 (73)	1.03 (6)	3.35 (21)	16.02(100)
1971-72	15.19 (78)	0.31 (2)	3.95 (20)	19.45(100)
1972-73	15.00 (73)	0.87 (4)	4.76 (23)	20.63(100)
1973-74	19.31 (72)	1.17 (4)	6.55 (24)	27.03(100)
1974-75	19.64 (66)	1.15 (4)	9.11 (30)	29.90(100)
1975-76	28.92 (72)	0.97 (2)	10.30 (26)	40.19(100)
1976-77	32.31 (66)	2.99 (6)	13.73 (28)	49.03(100)
1977-78	24.97 (55)	5.28 (12)	14.84 (33)	45.09(100)
1978-79	53.04 (69)	5.73 (7)	18.09 (24)	76.86(100)
1879-80	56.11 (68)	8.20 (10)	18.31 (22)	82.62(100)
1980-81	60.29 (61)	17.68 (18)	20.10 (21)	98.07(100)
1981-82	75.75 (61)	23.24 (19)	25.01 (30)	124.00(100)
1982-83	112.38 (65)	29.73 (17)	30.92 (18)	173.03(100)
1983-84	161.61 (72)	29.19 (13)	34.56 (15)	225.36(100)
1984-85	203.55 (74)	29.23 (11)	42.05 (15)	274.83(100)
Total	889.71	156.77	255.63	1302.11
Average	(68)	(12)	(20)	(100)

Source: Cardamom Board, Cochin.

1984-85, the Cardamom Board expended 68 per cent of its budgetary allocations on programmes for increasing productivity and production of cardamom in the country. Twelve per cent was spent on market development programmes and 20 per cent on other expenditure, including administrative and overhead expenses.

In the years 1980-81, 1981-82 and 1982-83, the expenditure on market development showed a slight improvement. As a percentage of total expenditure, this was 18 per cent, 19 per cent and 17 per cent respectively. This may be compared to the 15 years average of 12 per cent. This may be indicative of a new awareness in the Board.

The production development programmes took the lion's share, ranging from 55 per cent to 78 per cent of the Board's total expenditure, over the entire period under study. If this expenditure is studied side by side with the estimates of production of cardamom in the country, it can be seen that estimates of production ranged from 1600 M.T. to 4500 M.T. per annum during the same period from 1970-71 to 1984-85, with wide fluctuations from year to year. The average production per year for the 15 years worked out to 3334 M.T. The estimated production was 3170 M.T. in 1970-71 and 3900 M.T. in

1984-85. But Table 11.1 reveals that the Board has been implementing schemes with a view to improving the production and productivity of cardamom in India with total financial outlays ranging from Rs.12 lakhs to Rs.204 lakhs per annum. This again is indicating of a new awareness about the crisis in cardamom in the Government and in the Cardamom Board.

It was seen that the climatic conditions, especially timely rainfall, has a critical influence on production and productivity of cardamom in the country.¹¹ The analysis of the budgetary expenditure of the Cardamom Board from 1970-71 to 1984-85 brings to notice that till 1984-85 only a negligible percentage of the expenditure on production development had been incurred for developing and improving the irrigation facilities in cardamom plantations. It may be fair to conclude that the failure to respond to this core area of developmental activity, has been mainly responsible for nonimprovement of productivity and production of cardamom in the country from 1970-71 to 1984-85. However, it may be noted that during the Seventh Five Year Plan period, an amount of Rs.295 lakhs has been earmarked to develop the infrastructure for tapping water resources for irrigation purposes in cardamom plantations.¹²

¹¹This was discussed in some detail in Chapter IV

¹²Cardamom Board, Revised budget estimates for 1985-86 and estimates for 1986-87, (Cochin, 1986) p.17.

From Table 11.1 it is also seen that the amount utilized for marketing and market development of cardamom in India and abroad has been quite inadequate all through the years from 1970-71 to 1984-85, in comparison to the requirements of the industry. It was also noted that during the year 1984-85, out of the total market development expenditure of Rs.29.23 lakhs the Board's foreign office in Bahrain accounted for Rs.11.42 lakhs.¹³

The amount spent on technological research on curing, packaging, quality preservation, end use development, etc. were also less than Rs.2 lakhs per annum, sometimes nil, during the period 1970-71 to 1984-85. In other words, the marketing and market development expenditure outside the Middle East, including that in India was only Rs.17.81 lakhs in 1984-85, as against a production development expenditure of Rs.203.55 lakhs in the same year.

It would appear necessary from the above that the Cardamom Board makes a reassessment of its priorities in expenditure. Violent fluctuations in prices have been a serious threat to the development of the cardamom industry as was witnessed in 1970-71 to 1974-75, 1977-78

¹³Ibid., p.95

and 1979-80 to 1981-82.¹⁴ Concerted and sustained efforts are required to improve the marketing and consumption of cardamom in India and abroad, as was pointed out in Chapter X.

The Cardamom Board does not have strong marketing, economics, statistics and promotion divisions. which can carry out research in marketing, market promotion etc. on a continuous basis and advise the Board on cost of production, productivity, prices, demand pattern, new product uses, market potential, etc.

In the recent past, the Board has been making occasional references about strategies of production and market development of cardamom. Such references are seen in its plan documents, especially from VI Five Year Plan onwards. However, it does not seem to have succeeded in formulating and implementing any firm long-term policy or strategy. It is difficult to escape from the impression that the policies and programmes of the Board are largely of an adhoc nature. They do not seem to have been derived from any long-term strategy formulation. This is why the necessary continuity in policy appear to be lacking in its programmes.

¹⁴See Chapter IX,

The chairman of the Cardamom Board is the Chief Executive officer of the Board. He enjoys wide powers, including the power to stay the decisions of the Board, pending a reference to the Government of India.¹⁵ But, it has been observed that over a period of twenty years from 1966 to 1986 the Board had eleven Chairmen, making the average tenure in office of the Chairman just an year and ten months. During these 20 years, the Board had no full time chairman for about ten years.¹⁶ This lack in continuity in leadership may partially explain the lack in continuity of policies or the formulation of a firm strategy for the development of the industry. It is desirable that a chairman is in office continuously for a period of five or six years.

Export Policy

There are some evidences to show that the export policy of the Government of India has sometimes had an impact on the volumes of export in cardamom and cardamom products. The export duty of Rs.50 per kg. introduced in January 1977 had badly hit exports.¹⁷ To reverse the negative trend the export duty was first reduced to Rs.15 per kg. in February 1977, and then again to Rs.5 per kg. in July 1980. Finally the duty was abolished.

¹⁵ Government of India, Cardamom Act 1965 and Cardamom Rules 1966 (published by Cardamom Board, 1979) p.31.

¹⁶ As noted from the Annual Reports on the working of the Board from 1966-67 to 1984-85.

¹⁷ There was no export of cardamom in February 1977, See Chapter VII, Table 7.7, p.170.

Reference was earlier made about the Indian Government's scheme to give a cash compensatory support of 10 per cent for export of cardamom in consumer packs of 2 kg. and less. But the buying pattern of consumers in the core markets of the Middle East is normally of 5 kgs. at a time.¹⁸ If the CCS is extended to consumer packs upto the size of 5 kgs. the use of unattractive consumer packs of 2 kgs. and less could have been avoided. This was discussed in detail in Chapter VI¹⁹. There is also a CCS of 15 per cent for export of value added items like oils and oleoresins of spices, including those of cardamom. In the case of oils and oleoresins of spices, except for those of cardamom, there is no export cess of three per cent. This, in effect, reduces the CCS for cardamom oil and oleoresin to the level of twelve per cent against the 15 per cent enjoyed by oils and oleoresins of other spices.

Quality control and the preshipment inspection of cardamom and cardamom products also form part of the export policy of the Government. At present, the above statutory function is looked after by Directorate of Marketing and Inspection, a department under the Central Ministry of Agriculture, whereas most of the other matters

¹⁸ Cardamom Board, Report of the Cardamom Trade Delegation to Saudi Arabia, Kuwait, Bahrain, Qatar and U.A.E. (Cochin, 1986) p.7.

¹⁹ See Chapter VI, p.138.

pertaining to cardamom are dealt with by organisations or departments under the Central Ministry of Commerce. This has created certain administrative problems in government.

Quality certification under 'agmark' like certification under 'ISI' is only optional, and is primarily meant for quality standards in internal trade. But when quality control and pre-shipment inspection for export was introduced in cardamom, 'agmark' grading and certification were made compulsory and extended to cardamom exports. There is a national authority, viz., Export Inspection Agency of India, which undertakes export inspection of more than 830 commodities, including agricultural products. The agency undertakes pre-shipment inspection of more than 90 per cent of the commodities exported from India.²⁰

This agency works under the Central Ministry of Commerce, under which the Cardamom Board is also functioning. The Committees on Quality Complaints and the Indian Council of Arbitration are also functioning under the Central Ministry of Commerce. In the circumstance, as a matter of policy, it may be advisable to entrust the quality control and export inspection of

²⁰Export Inspection Agency of India, A profile of the Organisation (Madras, 1981) pp.19-24.

cardamom also with either the Cardamom Board or Export Inspection Agency of India so that all matters connected with export inspection, quality complaints, arbitration, etc. could be handled by organisations under the same Central Ministry of commerce, for better control and co-ordination. The delay in settlement of trade disputes, quality complaints, arbitration processes, etc., which adversely affect the export prospects of cardamom, can be minimised by this change over.

It was pointed out in Chapters V and VIII that there is scope for reducing the number of grades in cardamom from 34 to less than 10.²¹ Such a simplification would help the importers to order for Indian cardamom and its products conforming to Indian grades and standards, thereby reducing trade disputes to a large extent. At present, the cardamom grades are generally unknown to foreign buyers. The Cardamom Board may publicise the grade standards prescribed for cardamom and pre-shipment inspection practice prevalent in India. This would help to create and develop a confidence in the quality of Indian cardamom exports.

A firm policy of stabilization of prices of cardamom at levels remunerative to the growers and

²¹See, Chapter V, p 133 and Chapter VIII, p 218

attractive to the consumers in India and abroad is unavoidable for the growth of cardamom industry in the country. Administered prices in agriculture have become almost universal. But in India, administered prices are prevalent only in the cases of farm inputs like fertilizers, pesticides and essential farm outputs like wheat, rice and certain other essential items of manufacture. It is alleged that prices have proved to be ineffective regulator in respect of agricultural products, because farmers continue to produce even when prices fall substantially. A good farm price policy will be such as to encourage efficiency and technological progress and will enable it to work as a system of self-adjusting administered price. But this may not be possible in cardamom due to several constraints some of which were examined in earlier chapters.

A policy for price stabilization cannot easily be formulated or implemented by farmers or by farmer sponsored bodies by themselves, since marketing activities have become highly competitive and complex. In the case of internationally traded commodities like cardamom, the problem becomes more complicated. Productivity factors, possibilities of alternate uses of land, etc., vary from country to country. The fact that

in the case of cardamom, there is no internal consumption in Guatemala. This complicates the situation further.

The basic principle behind the national price stabilization policy for cardamom should be by breaking the direct connection between the prices paid in the world markets and the prices and incomes received by the growers. Variations in the quantity of cardamom exported have caused considerable instability in export prices. Variations in world prices cause instability in the internal prices of cardamom. It was seen that unstable prices lead to unstable productions in subsequent seasons, after providing for the time taken from planting to commercial cropping. A balanced mix of promoting internal consumption and of encouraging exports at stable prices will ensure a remunerative price to the farmer. The grower is only interested in a fair and stable price for his produce, whether it goes for internal consumption or export. This is the case with the traders and exporters also. They are also concerned only about their margin of profit, whether it comes from export or domestic trade.

As was noted earlier, a national price stabilization policy for cardamom should be able to break the

connection between the world market prices for cardamom and the income received by the growers. Such a policy of price stabilization is, at present, lacking in the Indian cardamom industry. Various measures have been proposed to evolve a price policy for cardamom in India.

- i) Stricter controls over the primary trade in cardamom, including the taking over of primary trade in cardamom as in the case of coffee;
- ii) Setting up effective marketing organisations, controlled by farmers' cooperatives;
- iii) Fixing minimum floor prices for different grades of cardamom to the growers;
- iv) Price stabilization funds;
- v) Variable export cess, duties, subsidies, cash incentives, with prices of cardamom or cardamom products;
- vi) Buffer stocks, either as cardamom or as oil or oleoresin.

As noted earlier, the possibility of producing cardamom at lesser cost seems difficult for cardamom at present unless there are sharp increases in productivity. The marketing strategy should not be for profit alone, but also for growth in which there

should be planned efforts to develop a stable and growing market for cardamom, within the country and abroad. Therefore, a national pricing policy becomes all the more important which would ensure reasonable return on investment to the farmer. This can be assured only in the context of stable prices and a growing market share for Indian cardamom in a dynamic world market.

The formation of an International Cardamom Community, more or less on the lines of the International Coffee Organisation might be helpful to solve many of the problems faced by cardamom in the world market. All cardamom producing countries such as Guatemala, India, Tanzania, Sri Lanka etc. may be members of this organisation. This organization can deliberate on common problems, such as pricing, quality, etc. It might set quotas for export from different regions and undertake joint action on cultural research to improve productivity, control of pests and diseases and market development.

Fixation of a minimum export price for Indian cardamom may not be successful in the present situation, without an understanding at least with Guatemala. The production of cardamom in Guatemala today has far exceeded Indian production. She is

capable of meeting at least 70 per cent of the world requirements. The two critical advantages of Indian cardamom are that it is harvested just when the demand is high and the traditional reputation of the 'Heil Hind', as it is commonly called in Arab countries. These advantages of Indian cardamom are vulnerable. When more scientific methods of storing come into vogue and when the supply and usage of cardamom from other countries become more common, these advantages can easily give way to considerations of price.

It was noted that the Cardamom Board has a Trade Promotion Office in Middle East region. It also collects market intelligence for dissemination among the exporters of spices in India. There is need for opening similar offices, one in London or Brussels and another in Singapore or Tokyo to promote Indian cardamom and spices in European and West Asian markets. There is no substitute for on the spot market intelligence and promotional activities for effective marketing operations.

As was noted earlier, both at home and abroad, there exists the need for popularising the uses and consumption of cardamom in different forms. In

the case of a possible glut in the international market for cardamom, a larger home market would act as a cushion. It would be convenient and economic to develop common promotional activities for all the spices of India in which there are exportable surpluses. This would be done by the Cardamom Board in collaboration with the existing Spices Export Promotion Council, Cochin, or by the proposed Spices Board when it comes into existence. This is because the demand for many of the spices and spice products are mutually complementary in character. The benefits of promotional activities can be shared by all, resulting in considerable economies. A combined promotional approach would bring in greater publicity value, since one particular spice of India would publicise the other, for India has been traditionally the 'Home of Spices'.

CHAPTER XII

CONCLUSIONS AND RECOMMENDATIONS

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CHAPTER XII

CONCLUSIONS AND RECOMMENDATIONS

Area and Production

Cardamom is indigenous to India and is now cultivated in the three southern States of Kerala, Karnataka and Tamilnadu. Cardamom has figured in world trade for at least 5000 years. Till the first quarter of 20th century cardamom remained as a wild crop. The primary trade of cardamom in the past was the monopoly of the erstwhile Travancore State.

According to official estimates, the area under cardamom was 67,000 hectares in 1965, but this grew to 1,00,000 hectares in 1985. A system of registration of estates by the state governments was introduced in 1966. As on 31.3.1985, over 96,000 hectares were under registered plantations, with 61 per cent of the area under cardamom in Kerala, 30 per cent in Karnataka and nine per cent in Tamilnadu.

Cardamom cultivation is dominated by small growers. As on 31.3.1985 there were 33,153 registered holdings in cardamom, of which 31,508 holdings were with

small growers owning less than eight hectares. The small growers accounted for 55 per cent of the total area under cardamom cultivation. The large grower sector, owning more than eight hectares, consisted of 1645 holdings and 45 per cent of the total hectareage, contributing to more than 60 per cent of cardamom production in the country. There is not much scope for further increase in the area under cultivation as cardamom plant requires high elevation, humidity, canopy of tall trees etc. for economic yielding, which is available only in the reserve forests of the State governments. Even if the State governments desire to take up cardamom cultivation in these areas, the latest forest policy of the Central Government will not permit them to do so in view of the disturbance to ecology.

As per the official estimates, the annual production of cardamom ranged from 1600 M.T to 4500 M.T. Productivity ranged from 23 kgs. per hectare to 64 kgs. per hectare in India during the 20 years, ending 1984-85. The above estimates of area, production and productivity cannot be said to be quite accurate. In order to overcome this data shortage, it would be necessary for the Cardamom Board to undertake a census of cardamom plantations, and a study of the economics of cardamom culti-

vation, including the cost of production of cardamom and the income from operations.

The yield rate in cardamom varies from place to place and estate to estate, depending upon soil fertility, varieties of plants grown, cultural practices, replanting schedule, land tenure, the degree of involvement of the farmer with the cultivation, i.e. whether it is absentee landlordism or not, etc. Availability of high yielding material by tissue culture, greater attention to inputs, irrigation, manuring, pests and disease control measures, etc. are required to increase the productivity and production.

The productivity of cardamom in Kerala is higher than that in Karnataka and Tamilnadu. The cardamoms produced in Kerala and Tamilnadu are commercially known as 'Alleppey Green' varieties and constitute over 90 per cent of India's cardamom exports.

The single most important factor affecting the productivity of cardamom is climate. The vagaries of nature, especially rainfall and drought affect cardamom production most, as cardamom is a delicate shallow-rooted plant. The Cardamom Board should therefore give paramount importance to developing irrigation facilities in its production development programmes for improving

the productivity and production of cardamom in India. The incidence of pests like 'thrips' and disease like 'katte' and 'rot' also influence the quality and production of cardamom. The propagation of systematic replantation programme, which is not widely prevalent at present, is also required to increase productivity.

Investigations conducted by the researcher revealed that, on an average, there was a productivity of 125 kgs. per hectare in Idukki district of Kerala in 1984-85 season. This was only 74 kgs. per hectare in the case of small growers owning less than four hectares of cardamom plantation. This study also indicated that the cost of production of cardamom was Rs.117.68 per kg. in 1984-85 season.

Productivity is higher in the larger estates, compared to the small estates. With marginal increase in cost of production, there is a much higher return on investment in the large plantations.

The efforts of the Cardamom Board to control 'katte' disease through its developmental and educative programmes have been fairly successful in Kerala and Tamilnadu, but the disease is still a problem in Karnataka.

Guatemala is the largest producer of cardamom in the world, now accounting for 59 per cent of world production. India lost her preeminent position in cardamom production in 1982-83 when Guatemala overtook her. The productivity of cardamom in Guatemala has been 250 to 300 kgs. per hectare. This is due to the virginity of the soil, suitable climatic factors, especially the timely rains, and the non-incidence of large scale attacks of pests and diseases.

The world supply of cardamom has gone up from 4700 M.T in 1970-71 to 9900 M.T in 1984-85. This is expected to reach a level of 14,000 M.T. in 1989-90, as per present indications. The sharp increase in production of cardamom in Guatemala has created problems for India, the traditional supplier of cardamom. There should be organized efforts to promote greater consumption of cardamom both in India and abroad.

Curing, Grading and Quality control

While Kerala and Tamilnadu cardamoms are cured in conventional curing houses by radiation of heat, which helps to preserve the natural green colour of cardamom, Karnataka cardamoms are generally sundried or bleached after sundrying. The green coloured cardamoms fetch a premium price both in domestic and international

markets, especially in the Middle East. Not many studies have been conducted about improving the curing of cardamom. The results obtained from the few studies conducted so far are still under field trials. There is urgency in improving the methods of curing and bleaching cardamoms.

There are at present 34 grades of cardamom, including cardamom powder. The grade and pre-shipment inspections and certifications are undertaken by the Directorate of Marketing and Inspection under the Ministry of Agriculture, Government of India. The export sale of cardamom is regulated by grading and 'agmarking'. For domestic sales, grading and quality control are not compulsory. Any grade of cardamom can be exported, but the buyers in the overseas markets are indifferent or ignorant about the 'agmark' grades in India. The existence of too many grades under 'agmark' is a confusing factor. There is need to reduce the grades to less than ten. The cardamom oil and oleoresin which are not covered under 'agmark' at present, may have to be brought under quality standards and inspection to avoid trade disputes. It would be desirable to give wide publicity abroad to the grading and quality control before shipment undertaken for cardamom in India. This would help to create confidence in Indian cardamom among the foreign buyers. Trade disputes on quality complaints can also

be brought down by making known the grade standards of Indian cardamom among the overseas buyers. The industrial buyers of cardamom in European countries are concerned about the percentage of oil content in cardamom capsules, whereas the buyers in the Middle East look at the appearance of the capsules. They are keen to have green-bold-capsules without blemishes and insect marks. Cardamom business both in India and abroad are concluded on the basis of samples and not on the 'agmark' grades.

Technological research findings on preservation of quality in curing, processing, packaging, transport, storing etc. are very much limited in the case of cardamom capsules, powder, oil and oleoresins. This is an area, where the Cardamom Board's attention is urgently required for improvement.

Moisture and oil contents in the cardamom capsules and powder are required to be assessed while fixing the standards of quality.

The statutory duty of quality control and pre-shipment inspection is required to be entrusted with the Cardamom Board or Export Inspection Agency of India under the Central Ministry of Commerce for

operational and administrative conveniences and speedy settlement of disputes over quality complaints from overseas buyers.

Packaging, Transport and Channels of Distribution

The packaging adopted by the cardamom industry is primitive in all respects. Consumer packing in a real sense is almost non-existent in India and in the exports to the core markets of cardamom in the Middle East.

Though the 'mooda' or gunny packing for bulk packaging of Indian cardamom has the advantage of the 'stamp' of Indian origin, it has many disadvantages. There are the additional costs in handling, transit and storage. Also, though better methods for consumer and bulk packaging have been developed by the Indian Institute of Packaging, Bombay at the instance of the Cardamom Board, the cardamom exporters in India are reluctant to change from the age old systems of packaging of cardamom. An educative programme is required in this area. Sale of cardamom in attractive consumer packs in India and abroad also demand the immediate attention of the authorities concerned.

Cardamom being a low volume, high price item, the facility of air transport for exports can be profitably utilized. The early crop in India compared to the harvest season in Guatemala will enable Indian cardamom to reach the Middle East market early to take advantage of the increased demand for cardamom there in December on account of Ramdan and the advent of the winter season. The airlifting of cardamom assumes a new significance in this context. The mandatory air-freight rates in Air India flights and the cargo space availability in Air India passenger flights from Trivandrum and Bombay can be taken full advantage of by the cardamom industry. This will greatly speed up the arrival of cardamom in the Middle East markets.

There are more than five intermediaries in the domestic trade of cardamom. It is worthwhile to consider the taking over of the primary trade of cardamom viz., the auctioning or procurement of cardamom from the **private** organizations by the Cardamom Board and reducing the number of intermediaries in the domestic trade of cardamom in India. This would be advantageous to both the small growers and consumers of cardamom.

Domestic and Export Prices

Cardamom prices have never been very stable. The fluctuations have been steep in certain years. The prices used to move up and down and move frequently and

violently along with the levels of world supply and demand. A few exporters in India, numbering less than fifteen, control the bulk of the cardamom trade and export from the country. The changes in the world supply and demand and speculation by these few exporters in India, compounded by the fierce competition among world exporters, have created a situation of the constant instability of cardamom prices in India. While the prices of all primary commodities in India moved up steadily, the same phenomenon was not seen in the case of Indian cardamom. Though the cardamom growers received remunerative prices for their produce in certain years, the high degree of variation in prices introduced an element of risk and indecision among the growers of cardamom. This has upset the pattern of consistent growth in the production of cardamom in the country. Some sort of a price insurance scheme, supported by a firm price stabilisation policy, has to be designed to ensure stable and remunerative prices for the growers of cardamom.

The stabilization of prices of cardamom at home and at the international level is a necessity. The cardamom producing countries, can with profit, consider the formation of an International Cardamom Community which may fix export quotas for the different producing countries in the different markets. They can thus work

together for the stabilization of prices in the world markets. But the degree to which such a system would be effective will depend upon a number of factors.

There are too many intermediaries in the domestic trade. Partly as a result of this the difference of price between the first sale and final sale in the cardamom auctions is often more than 100 per cent. The distribution system in India is to be reorganised and modernised with necessary market interference by the Cardamom Board in order to ensure a stable, reliable and economic price for the producers and a reasonable price to the consumers in India.

The international prices of Indian cardamom have generally been high when compared with those of Guatemalan and Sri Lankan cardamoms. This was due to the early arrival of Indian cardamoms in the world market coupled with perceptions of higher quality. Because of its early availability in the world market, Indian cardamom generally sets the early trend of cardamom prices in the world market.

Domestic Marketing

The estimates of production and domestic consumption made by the Cardamom Board do not appear to be quite reliable. The Board may take appropriate

action for refining the statistics in this connection without which it would be difficult to formulate and implement effective marketing and market promotion strategies and programmes.

The existence of an open auction system for the primary sale of the produce is in many ways a unique marketing system which is supposed to ensure optimum prices to the cardamom growers. However, there are reasons to suspect that the small growers receive a raw deal at the auction centres to the advantage of the large growers, some of whom are also exporters.

The primary internal trade of cardamom also is dominated by exporters, especially in the case of Kerala and Tamilnadu cardamoms. This is because there would be at least 30 to 40 per cent of nonexportable quality of cardamom which is sold in the domestic market when the bulk cardamom purchased at auctions is graded into exportable and nonexportable categories.

The capital investment of wholesale dealers and exporters of cardamom is minimum when compared to the volume of the commodity handled by them. This is possible because of the credit offered by the large

growers in auction sales. The duration of credit extended by large growers in some years have been extended to more than six months. Thus the wholesale dealers and exporters conduct the trade at the cost of cardamom growers.

There is excellent scope and need to increase the domestic consumption of cardamom in India. This will go a long way to stabilise prices. Over-dependence on exports puts the grower at the mercy of the exporters in India and importers abroad.

The distribution system in the domestic trade of cardamom is quite archaic. No efforts are being made to adopt modern packaging or storing or processing systems. Market promotion efforts undertaken by the Cardamom Board or other agencies for increasing the consumption of cardamom and cardamom products have not also been very significant.

Export trade of Cardamom

The volume of exports of cardamom has shown mixed tendencies over the last twenty years. The export of cardamom from India during 1965-66 was more than 65 per cent of world exports, which declined to 34 per

cent of world exports by 1984-85. One reason for this has been the entry of Guatemala into the world cardamom market and the impressive increase in production and its price competitiveness there. However, in absolute terms, cardamom exports from India increased from 1134 M.T in 1965-66 to 2383 M.T. in 1984-85.

The Middle East countries have generally accounted for nearly 75 per cent of Indian cardamom exports during the last twenty years. European countries imported 17 per cent, the East Asian countries six per cent and the rest was by other countries. Value-wise, the Middle East countries accounted for about 79 per cent of India's earnings. This is because of their preference for higher quality cardamom, which commanded a higher unit price.

India lost her markets in West European countries, mainly after Guatemala emerged as a major producer and exporter of cardamom. However, India increased her exports to East European countries and U.S.S.R. during the same period. This was achieved because of the bilateral trade agreements with these countries, especially with U.S.S.R and G.D.R.

European countries are quite willing to take the so-called lower grades of cardamom at cheaper prices. In order to regain the lost markets in West Europe, India may have to change its policy on quality and prices when exporting to these countries.

Varietywise, Alleppey Green varieties constitute over 80 per cent of India's cardamom exports. Middle East countries buy the top grades of Alleppey Green variety and pay the best price for the same.

Significant export of cardamom oil from India was commenced only from 1977-78 onwards, but it has shown a mixed and generally declining trend over the last eight years. U.S.A. and France have been the major buyers of cardamom oil. It appears that Guatemala also had made inroads into the cardamom oil exports to U.S.A. and Europe. There have been no exports of oleoresins of cardamom so far, whereas the exports of oils and oleoresins of other spices from India have steadily been on the increase. Cardamom Board may probe into the factors behind the decline of cardamom oil exports and take appropriate remedial actions.

Saudi Arabia is the largest cardamom consuming country in the world. She had imported over 5000 M.T of cardamom in 1984, constituting more than 50 per cent of the world production. While there have been phenomenal

increases in the consumption of cardamom in Saudi Arabia in recent years, the import of cardamom from India have not shown any appreciable growth during these years.

Saudi Arabia imported from both the producing countries as well as from re-exporting countries like Kuwait, Bahrain, etc. However, direct imports from producing countries are steadily on the increase.

The largest per capita consumption of cardamom is also in Saudi Arabia. It worked out to about 2 gms. per day or 725 gms. per year in 1984.

Though Kuwait is a major consumer of cardamom in the world and imports substantial quantities of cardamom, she also acts as a entrepot for re-exporting substantial quantities of this spice to other countries of the Middle East. The same is the case with Bahrain.

Qatar is another major consumer of cardamom, where cardamom is considered as an essential item by the government. Cardamom is sold in ration shops at subsidised prices. There is also, at the same time, free sale in the open market. The imports and consumption of cardamom in the Middle East countries are on substantial increase whereas in West European countries and East Asian countries it is more or less stagnant. As

cardamom provides a natural food flavour, there is substantial scope for increasing the consumption of cardamom and cardamom products in European and West Asian countries, provided some intensive promotional measures are taken by cardamom producing countries.

Excessive reliance on the Middle East markets is not very desirable, especially in the context of a possible recession in these countries and the prolonged Iran-Iraq war. Diversification of cardamom trade by seeking out new markets in affluent nations like U.S.A., South Korea, Australia, etc. will pay better dividends in the long run. At the same time, attempts should be made to recover and strengthen the West European markets.

Current and Potential uses of Cardamom

The existing uses of cardamom are varied and different. The present applications in different countries are mainly for flavouring food and beverages. Cardamom is also used in medicines in India and in perfumery industries in West Europe.

The largest use of cardamom in the world is for preparing the 'Gahwa' or cardamom-coffee in the Middle East. It is estimated that over 5000 M.T. of cardamom i.e. over 50 per cent of world cardamom

production go into the preparation of 'Gahwa' in the Middle East.

The most significant use of cardamom would continue to be in the food and beverages area. Health, medicinal and herbal preparations could also provide significant use, provided cardamom's medicinal properties are brought out by medical research and propagated. The medicinal claims of cardamom need to be substantiated through research, for which necessary support can be provided by public agencies like the Cardamom Board.

The manufacture, export and use of cardamom oil and oleoresin deserve encouragement. They enable the retention of flavour for longer periods than the capsules and make storage and transport easier.

The Cardamom Board may encourage the manufacture and marketing of cardamom oil, oleoresin, instant cardamom-coffee, cardamom-tea bags, etc. and promote the same in India and abroad.

A Policy for the Development of Indian Cardamom Industry

The enactment of Cardamom Act, 1965 and the

formation of the Cardamom Board in 1966 by the Central Government was a boon to the Indian cardamom plantation industry for its development. The activities of the Cardamom Board have been of substantial help to the growers and exporters. It has helped the unfolding of the problems faced by the cardamom industry.

The State governments of Kerala, Karnataka and Tamilnadu and a number of Central and State institutions outside the Cardamom Board are also involved with cardamom. Their efforts require better planning for coordination and a common sense of direction.

All the activities under cultural research on cardamom can profitably be brought under the purview of Indian Cardamom Research Institute of the Cardamom Board. This will help the avoidance of duplication of work and consequent wastage of resources.

The policies of the three State governments on lease lands and taxation require urgent review and modification.

There is scope for reduction of cardamom grades from 34 to less than 10. The function of quality control and preshipment inspection can be brought under the purview of the Central Ministry of Commerce under

which all other government activities in cardamom are organized at present. Wide publicity may be given to these efforts at quality control to encourage exports.

Research on post harvest technology in cardamom has so far been quite inadequate. The Cardamom Board should provide more funds to undertake research on curing, storing, quality preservation, end use development, etc.

The Cardamom Board has all through been allocating a lion's share of its expenditure for production development activities. However, the most important area of developing irrigation facilities has not been given due importance.

The budgetary provision for market development in India and abroad by the Cardamom Board have been quite inadequate, compared to the requirements of the industry in this respect. It is high time that the Board makes equitable distribution of its resources for production and market development. It is also required to strengthen the economics, statistics and market development divisions of the Cardamom Board.

The Government of India has yet to evolve a consistent policy on cardamom exports. This is seen

in its wavering policy decisions on imposing an export duty on cardamom and its scheme for payment of cash compensatory support against exports of cardamom.

A policy for stabilization of prices of cardamom at levels remunerative to the growers and attractive to the consumers assumes great significance in the formulation of a long term policies for cardamom. This may call for stricter regulation of the auction system which can be done under the auspices of the Cardamom Board itself or of Cardamom Trading Corporation. The development of an effective marketing organization, the fixation of minimum floor prices for different grades of cardamom to growers, the establishment of a price stabilization fund, the provision of variable duties, subsidies and cash incentives and creating buffer stocks are some of the steps that can be considered in this context.

Organization of an International Cardamom Community on the lines of International Coffee Organization is also suggested to tackle the problems of constant instability in prices and unhealthy competition among the producing countries in world trade. A world organization of this kind can also act as an agency to organize research, market promotion and other related activities in cardamom. With regard to India the

Cardamom Board or the Government of India may think in terms of opening market intelligence cum promotional offices for cardamom and other spices in Europe and West Asia. The existing trade promotion office in Bahrain should only be the first in setting up a chain of offices in all countries with potential markets for cardamom.

The promotion of cardamom in foreign countries may be taken up alongwith other spices of India. This will not only ensure economy in operation but also help cardamom to encash on India's reputation as the home of spices.

Spices Grown in India - Botanical Names and Common Names in Indian Languages andPart Used

English	Botanical Names	Common Names in Indian Languages					Part used
		Hindi	Malayalam	Tamil	Kannada	Telugu	
SPICES							
All Spice (Pimento)	<u>Pimenta dioica</u> (L) Merrill (Syn. P. officinalis Lindl.)	All spice Pimento	Pimento	Pimento	Pimento	Pimento	Berry
Aniseed	<u>Pimpinella anisum</u> L.	Vallaiti suanf	Perum- jeerakam	Perum- jeerakam	Dedda jeeraka	Sompu	Seed
Asafoetida	<u>F. assafoetida</u> L.	Hing Hingra	Kayam Perum- gayam	Perum- gayam	Ingu	Inguva	Oleogum Resin from Rhizome & thick- ned root
Basil or Sweet basil	<u>Ocimum basilicum</u> L. <u>Ocimum americanum</u> L.	Babui tulsi Kali tulsi	Tirunithu	Tingiru- pachai	Kama- Kasturi	Bhutulsi	Seed, leaves
Bishops weed	<u>Trachyspermon ammi</u> L. Sprague ex Turrill	Ajowan	Ayamoda- kam	Omum	Omum	Vamu	Fruit & seed
Caraway	<u>Carum carvi</u> L	Shiajira	Shima jeerakam	Shimai jeerakam	Shime jeerige	Shima Jilakara	Seed
Cardamom (big)	<u>Amomum subulatum</u> Roxb	Badi Elaichi	Valia Elam	Peria Elakkai	Dodda Elakkai	Pedda Elakka	Seed
Cardamom (small)	<u>Elettaria Cardamomum</u> Maton	Choti elaichi	Elam	Elakkai	Elakki	Elakka	Fruit & seed
Cassia (China)	<u>Cinnamomum Cassia</u> Presl Nees (Syn. C. aromaticum Nees)	Cassia	China Karu- vapatta	Cassia	Cassia	Cassia	Bark, leaves
Cassia (Saigon)	<u>Cinnamomum loureirii</u> Nees						
Cassia (Java, Indonesia & Batavia)	<u>Cinnamomum burmannii</u> Nees & Blume						
Cassia (India)	<u>Cinnamomum Tamala</u> T. Nees & Eberm	Tejpatta	Talispatra	Talisa- patra	Tejapatra	Tejpat	Leaves & bark
Celery	<u>Apium graveolens</u> L	Salary Ajmoda Karnouli karas	Ajmoda	Ajmoda	Ajmoda	Ajmoda	Seed
Chilli or capsicum	<u>Capsicum annum</u> L <u>Capsicum frutescens</u> L	Hari Mirch Lal Mirch	Mulaku	Milagai	Menasina- kayi	Mirappo- kayalu	Fruit
Cinnamon	<u>Cinnamomum zeylanicum</u> Blume	Dalchini	Karuvapatta	Lalvan- gapattai	Lavanga- pattai	Dasini- chekka	Bark
Clove	<u>Syzygium aromalicum</u> L Syn. <u>Eugenia aromatica</u> O. kuntze E. <u>Caryophyllus</u> Thunb; <u>Caryophyllus</u> aromaticus L)	Laung	Grambu	Kirambu	Lavanga	Lavan- galu	Unopened flower bud
Coriander	<u>Coriandrum sativum</u> L.	Dhania	Kothamalli Malli	Kotha- malli	Dhania Kotham- bari	Dhaniya- lu	Leaf & fruit
Cumin	<u>Cuminum cyminum</u> L.	Jeera	Jeerakam	Jeera- kam	Jaerika	Jilakara	Seed
Cummin black	<u>Nigella sativa</u> L.	Kalaunji Kalajira	Karim- jeerakam	Karuppu jeerakam	Karijeerige	Nalla Jilakara	Seed
Curry leaf	<u>Murraya koenigii</u> (L) Spreng. (Syn.) <u>Bergera Koenigii</u> L.	Kurry patta, Mithaneem	Karuvep- pilai	Karuve- ppilai	Karibeve	Karive- paku	Leaves
Dill (European)	<u>Anethum graveolens</u> L.	Soya, Sowa	Satakuppa	Sataku- ppai	Sabasige	Sabasige	Seed
Dill (India)	<u>Anethum sowa</u> Kurz						

English	Botanical Names	Common Names in Indian Languages					Part used
		Hindi	Malayalam	Tamil	Kannada	Telugu	
Fennel	<u>Foeniculum vulgare</u> Mill (Syn. <u>F. foeniculum</u> Karsl; <u>F. officinale</u> All; <u>Anethum foeniculum</u> L.	Saunf	Perumjeerakam	Shombu	Badesopu	Sopu, Pedda Jilakara	Seed
Fenugreek	<u>Trigonella foenum-gra- ecum</u> L.	Methi	Uluva	Venthayam	Menthayam	Menthulu	Seed
Garlic	<u>Allium sativum</u> L	Lahsum	Vellulli, Veluthu- lli	Vellulli, Bellulli Vellaipoonda	Ullipa-Bulb yalu		
Ginger	<u>Zingiber Officinale</u> Rosc	Adrak	Inji	Inji	Ardhraka Shunti	Allamu	Rhizome.
Juniper	<u>Juniperus Communis</u> L	Juniper	Juniper	Juniper	Juniper	Juniper	Berry
Kokum	<u>Garcilia indica</u> Choisy	Vizhambul Kokum	Punampuli	Murgal	Murgale	..	Peel of fruits
Marjoram Mint (Fieldmint)	<u>Majorana hortenesi</u> Moench <u>Mentha arvensis</u>	Marwa	Maruvanam	Maruvu	Maruga	Maruga	Leaves
Mint (Japanese)	<u>Mentha arvensis</u> D.C	Pudina					
Mint (Spear mint) Mint	<u>Mentha spicata</u> L <u>Mentha longifolia</u> L	Valunti Paharai	Pudina	Pudina	Pothina	Podina	Leaves
Mint (pepper- mint)	<u>Mentha piperita</u> L	Pudina	--	..	..	..	Leaves
Mustard (Rape)	<u>Brassica napus</u> L	Toriva Kali Sarson					
Mustard (Black)	<u>Brassica nigra</u> L	Sarson Rai	Kadugu	Kadugu	Kasuye	Avalu	Seed
,, (Indian	" <u>Funcea</u> L	Kali Rai					
,, (White)	" <u>alba</u> L Ra ^{denh} <u>sinapis alba</u> L.	Safed Rai					
Nutmeg & Mace	<u>Myristica fragrans</u> Houtt	Jaiphall Javitri	Jathika Jathipathri	Jathikai Jathipattri	Jayikai Japatre	Jayikai	Kernal Arillus
Onion	<u>Allium cepa</u> L	Piyaz	Ulli	Venkayam	Irulli	Mirulli	Bulb
Parsley	<u>Petroselinum crispum</u> ex. Hill	Ajmood	Ayamodakam	Ashambat-Achumooda ham		..	Seed
Pepper	<u>Piper nigrum</u> L	Kali mirch	Kurumulaku	Nalla Milagu	Kari Menasu	Miriyalu	Berry
Pepper Long (India)	<u>Piper longum</u> L	} Pipli, Pipar piplamul (Pippali)		Thippili (Val mulagu)	Hippili	Pippali	Seed & leaves
Pepper Long (java)	<u>Piper retrofractum</u> L							Chali Chavi
Poppy seed	<u>Popaver somniferum</u> L	Khaskhas	Kasnakasha	Kasakasa	Gasagasa	Gasagasalu	Seed
Star Anise	<u>Illicum verum</u> Hook	Anaspall	..	Anashuppu	..	Anaspuvu	Seed
Tamirind	<u>Tamarindus indica</u> L.	Imii	Puli	Puli	Puli	Chintap- pandu	Fruit
Thyme	<u>Thymus vulgaris</u> L. <u>C.domestica val</u>	Banajwain	..	..	..	..	Leaf and flowering top.
Turmeric	<u>Curcuma longa</u> L. <u>Curcuma arontatica</u> <u>Salisb</u>	Haldi	Manjal	Manjal	Arishina pasupu		Rhizome
Saffron	<u>Crocus salivus</u> L	Kesar	Kunkumapu	Kunkumapu	Kesari	Kunkuma- poovu	Stigma
Vanilla	<u>Vanilla planifolia</u>	Vanilla	Vanilla	Vanilla	Vanilla	Vanilla	Fruit.
Vanilla	<u>Vanilla fragrans</u>						
Tahitian	<u>Vanilla tahitensis</u>						
Vanilla (West Indian)	<u>Vanilla pompona</u>						

Source: Directorate of Cocoa, Arecanut and Spices Development, Calicut.

APPENDIX - II

Export of Spices from India: 1970-71 to 1984-85
(Quantity in M.T., Value in Rs./lakhs)

Commodities	1970-71		1971-72		1972-73		1973-74		1974-75		1975-76	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Pepper	17,696.7	1,524.84	19,247.5	1,482.49	19,958.2	1,430.99	31,648.1	2,953.08	26,341.4	3,447.62	24,226.0	3,388.36
Cardamom Small	1,705.0	1,121.60	2,146.6	803.07	1,384.4	684.65	1,183.4	1,155.28	1,626.4	1,332.32	1,940.6	1,938.37
Cardamom big	59.6	11.90	79.1	16.66	67.6	10.18	94.8	13.91	70.3	9.49	91.7	12.26
Chillies	2,073.2	108.66	4,509.9	192.22	785.7	35.31	617.1	41.02	499.1	31.62	3,532.04	318.06
Ginger	3,156.2	260.94	6,746.0	275.31	6,050.5	209.94	5,083.3	255.93	4,681.3	351.27	4,785.7	410.49
Turmeric	11,109.3	383.47	14,172.6	290.42	6,731.3	182.06	7,921.4	365.08	9,227.2	414.41	11,754.9	421.19
Coriander seed	392.5	9.74	680.3	15.51	930.1	20.40	896.7	30.23	669.4	27.95	755.3	34.59
Cumin seed	2,362.7	82.62	7,702.8	235.91	2,179.4	91.98	3,366.3	245.68	1,404.4	120.53	2,492.8	201.54
Celery seed	3,137.9	202.82	2,911.9	124.40	1,830.1	75.80	2,914.1	135.55	1,921.9	118.55	2,243.4	114.72
Fennel seed	794.6	27.26	1,590.5	34.46	724.4	25.45	1,821.7	93.61	553.5	39.58	615.0	55.71
Fenugreek seed	1,041.9	14.58	1,893.0	27.14	1,203.1	20.92	1,112.4	37.64	1,101.4	35.79	1,540.9	39.82
Garlic	1,633.7	27.82	1,978.0	23.69	1,229.1	8.25	408.7	18.12	79.2	7.00	930.5	25.49
Nutmeg	-	-	-	-	-	-	-	-	-	-	-	-
Aniseed	2.9	0.08	26.4	0.64	23.4	0.73	63.9	2.39	41.4	2.09	27.6	1.18
Cassia	649.2	24.78	638.2	23.48	652.4	33.03	1,146.7	69.97	1,335.0	80.39	457.3	23.93
Mace	-	-	5.1	0.24	-	-	1.4	0.07	-	-	-	-
Tejpet	31.9	0.46	70.4	1.78	23.0	0.20	538.5	3.57	611.8	3.23	1,142.5	7.43
Misc. spices	-	-	1,874.0	41.45	6,310.9	119.20	1,974.2	45.56	1,767.8	82.42	4,045.0	113.32
Curry powder	1,785.2	81.21	1,590.7	70.17	1,526.5	75.52	1,344.9	73.92	1,332.6	107.33	1,324.7	112.11
Oils of spices	-	-	2.6	0.91	0.8	1.22	0.8	1.93	1.3	2.56	1.6	6.68
Oleoresins of spices	-	-	0.7	0.48	51.1	30.18	24.7	17.99	40.4	45.10	44.0	47.24
Total	47,905.5	3,781.98	67,866.3	3,660.43	51,662.0	3,056.01	62,093.1	5,560.53	54,366.8	6,259.25	61,951.60	7,272.48

APPENDIX - II contd..

	1976-77		1977-78		1978-79		1979-80		1980-81		1981-82	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Pepper	20,527.0	3,823.54	24,677.5	4,950.80	15,719.4	2,911.72	20,898.5	3,352.25	26,363.7	3,794.87	20,607.9	2,798.37
Cardamom small	2,892.9	1,403.14	2,762.5	4,843.63	2,875.6	5,835.36	2,636.1	4,855.81	2,344.7	3,475.39	2,325.9	3,019.69
Cardamom big	105.6	14.21	217.9	42.69	391.7	63.94	366.6	82.42	225.2	53.13	152.8	36.90
Chillies	3,128.9	272.23	5,627.1	511.49	24,630.4	1,954.59	10,262.8	773.02	7,681.6	555.59	4,659.2	420.60
Ginger	4,460.9	584.32	9,761.8	1,368.99	14,514.6	1,431.72	11,486.0	726.96	6,810.9	367.97	4,717.8	395.23
Turmeric	11,796.0	443.79	11,253.0	829.94	11,977.5	1,241.24	26,609.8	1,980.61	14,517.2	788.24	11,985.9	517.41
Coriander seed	2,903.8	206.79	9,561.0	653.72	10,840.1	448.89	4,325.1	166.98	2,161.2	125.56	1,729.2	123.33
Cumin seed	1,334.98	137.25	887.9	131.20	2,113.4	317.59	17,730.5	2,120.69	8,778.0	974.26	6,405.4	685.31
Celery seed	2,735.3	154.57	2,738.4	218.66	3,283.1	203.65	3,153.5	192.65	3,197.9	156.35	2,668.1	111.70
Fennel seed	1,288.8	81.38	982.1	65.56	1,188.1	86.98	1,911.6	124.88	1,416.1	107.24	1,033.4	88.74
Fenugreek seed	1,873.0	44.24	3,727.7	125.86	5,255.9	188.86	4,798.3	156.62	4,461.5	173.44	3,241.5	113.92
Garlic	2,911.5	58.33	2,529.7	96.84	5,188.4	308.8	3,380.1	153.99	7,397.9	228.24	6,106.7	265.06
Nutmeg	1.2	0.07	6.3	0.25	-	-	1.4	0.17	3.7	0.30	0.3	0.10
Aniseed	23.1	0.90	78.7	438.30	103.6	7.32	172.3	13.29	30.4	1.90	1.0	0.08
Cassia	1,079.9	53.11	505.7	22.91	361.2	19.53	957.2	48.73	576.9	53.09	567.6	72.90
Mace	-	-	-	-	0.5	0.05	10.6	0.13	2.0	0.30	-	-
Tejpet	1,333.2	9.58	1,040.0	7.70	2,212.6	15.02	1,269.1	12.84	2,044.9	17.23	87.7	2.59
Misc. Spices	2,933.4	133.71	2,828.4	185.50	1,776.0	234.49	2,042.6	232.85	1,775.0	195.83	1,097.0	66.06
Curry Powder	1,552.2	134.28	1,929.9	195.25	2,288.4	241.80	2,644.3	255.63	2,550.3	241.58	1,805.0	200.18
Oils of spices	3.3	9.65	7.9	35.40	17.5	104.40	19.7	82.59	12.9	48.23	16.6	50.22
Oleoresins of spices	120.8	145.50	131.2	191.27	122.8	168.13	181.6	244.25	148.9	217.62	167.1	262.61
Total	60,956.7	7,598.11	81,227.7	14,188.49	104,844.5	15,492.94	114,958.6	15,507.66	92,537.8	11,705.50	68,374.8	9,251.01

APPENDIX - II (Contd..)

Commodities	1982-83		1983-84		1984-85	
	Quantity	Value	Quantity	Value	Quantity	Value
Pepper	22,591.8	2,938.70	25,787.3	4,134.70	25,420.1	6,054.37
Cardamom small	1,032.1	1,636.90	258.1	544.23	2,383.3	4,480.53
Cardamom big	160.4	37.46	237.4	62.36	265.0	116.53
Chillies	12,888.4	1,235.44	10,610.5	878.27	8,226.9	966.54
Ginger	3,954.7	588.49	4,629.0	1,190.16	7,328.9	1,872.75
Turmeric	7,594.8	423.54	10,891.9	1,105.50	12,801.6	1,715.70
Coarlander seed	7,378.5	445.94	11,045.4	595.00	6,930.4	398.57
Cumin seed	1,731.0	311.00	3,992.9	696.86	3,869.0	537.76
Celery seed	2,029.5	140.70	2,389.7	237.11	1,911.9	324.43
Fennel seed	505.6	71.18	1,551.6	218.85	3,711.3	322.43
Fenugreek seed	3,966.8	168.36	3,739.5	219.56	5,544.6	274.32
Garlic	5,795.4	292.90	5,090.2	300.15	5,264.4	274.80
Nutmeg	5.0	0.27	2.1	0.33	0.1	0.02
Aniseed	-	-	-	-	21.0	3.61
Cassia	731.5	105.23	378.7	40.31	347.6	50.66
Mace	3.5	1.03	1.0	0.33	-	-
Tejpet	104.5	2.87	114.9	3.08	108.6	3.19
Misc. spices	1,588.9	108.47	2,003.9	138.00	1,580.2	145.90
Curry Powder	2,815.9	336.08	2,891.8	317.24	3,109.5	389.67
Oils of spices	24.2	86.20	21.6	113.40	27.7	230.78
Oleoresins of spices	214.3	354.65	197.2	370.76	303.3	739.65
Total	75,116.5	9,285.41	85,834.6	11,166.22	89,155.3	20,902.24

Source: Spices Export Promotion Council, Cochin.
Cardamom: Cardamom Board, Cochin.

APPENDIX - IIIDetails of Various Taxes Levied on Cardamom

(As on 1--1--1986)

In the production front, the following are the various taxes levied on cardamom at present:

1. Agricultural Income Tax
2. Sales Tax
3. Plantation Tax
4. Basic Tax
5. Land Cess.

I. AGRICULTURAL INCOME TAX

The present rates of Agricultural Income Tax in Kerala and Karnataka to be paid by grower are as follows:

(a) KERALA:

- | | |
|-----------------------------------|-------------------------------------------------------------------------------------------|
| 1. Between Rs.0 to Rs.20,000/- | Exempted. |
| 2. Between Rs.20,000 to Rs.25,000 | 30% of the amount by which total Agricultural Income Tax exceeds Rs.20,000/- |
| 3. Between 25,000 to Rs.30,000 | Rs.1,500/- + 40% of the amount by which total Agricultural Income Tax exceeds Rs.25,000/- |
| 4. Between Rs.30,000 to Rs.50,000 | Rs.3,500/- + 50% of the amount by which the total Agril. Income Tax exceeds Rs.30,000/-. |
| 5. Between Rs.50,000 to Rs.70,000 | Rs.13,500/- + 60% of the amount by which the total Agril. Income Tax exceeds Rs.50,000/-. |
| 6. Above Rs.70,000/- | Rs.25,000 + 70% of the amount by which the total Agril. Income Tax exceeds Rs.70,000/-. |

(b) KARNATAKA:

1. Between Rs.0 to Rs.14,000	Nil
2. Between Rs.14,000 to Rs.20000	25% of the amount by which the total income exceeds Rs.14,000/-
3. Between Rs.20,000 to Rs.30,000	Rs.1,500/- + 30% of the amount by which the total income exceeds Rs.20,000/-
4. Between Rs.30,000 to Rs.40,000	Rs.4,500/- + 35% of the amount by which the total income exceeds Rs.30,000/-
5. Between Rs.40,000 to Rs.50,000	Rs.8,000/- + 40% of the amount by which the total income exceeds Rs.40,000
6. Between Rs.50,000 to Rs.75,000	Rs.12,000/- + 45% of the amount by which the total income exceeds Rs.50,000/-
7. Between Rs.75,000 to Rs.1,00,000	Rs.23,250/- + 50% of the amount by which the total income exceeds Rs.75,000
8. Above Rs.1,00,000	Rs.35,750/ + 65% of the amount by which the total income exceeds Rs.1,00,000.

(c) TAMILNADU

In Tamilnadu the rates of compounded Agricultural Income Tax to be paid by grower are as follows:

<u>Extent of land</u>	<u>Rate per standard acre</u>
	Rs.
On the first 20 standard acres	nil
On the next 5 standard acres	15.00
On the next 5 standard acres	20.00
On the next 5 standard acres	30.00
On the next 5 standard acres	40.00
On the next 10 standard acres	50.00
On the next 10 standard acres	60.00
On the next 10 standard acres	70.00
On the next 10 standard acres	80.00
On the balance of standard acres	100.00

II. Sales Tax:

The rates of Sales Tax collected from the three States are as follows:

	<u>Kerala</u>	<u>Tamilnadu</u>	<u>Karnataka</u>
• 1. Rate ST/PT (single point)	5% ST	4% ST	3% PT
2. Addl. Tax	15% of ST	Turnover upto 2 lakhs - nil .. 3 to 5 - 0.5% 5 to 7 - 0.7% 7 to 10 - 1.0% Exceeding 10 lakhs - 1.25%	
3. Turnover Tax	upto 10 lakhs - nil. Exceeding 10 lakhs - 8% of ST	...	1/2% on turn- over exceeding 1.5 lakh (mul- tipoint from 2nd point on- wards only)
4. Surcharge	Turnover exceeding 1 lakh - 5% of ST. Turnover exceeding 8 lakhs - 8% of ST.	5% of Tax	10% of Tax + 10% of Tax as Rural Develop- ment Cess.
5. Point of levy	<u>First sale</u> In the State.	<u>First sale</u> In the State	<u>First purchase</u> In the State
6. By whom tax paid	By the grower	By the grower	By the 1st purchaser.

III PLANTATION TAX IN KERALA:

- | | |
|---------------------------|---------------------------|
| 1.(a) First 4 hectares | - Nil. |
| (b) Next 16 hectares | - Rs.50/hectare/per year. |
| (c) More than 16 hectares | - Rs.70/hectare/year. |
| 2. By whom paid | - Grower |

IV BASIC TAX (KIST) IN KERALA

- | | |
|-----------------|------------------------|
| 1. Patta lands | - Rs.2/- acre/year |
| 2. Lease lands | - Rs.150/hectare/year. |
| 3. By whom paid | - Grower. |

V. LAND CESS IN KERALA

Rs.1/- for every Rs.1,600/- of the capital value of the plantation paid by the grower.

Source: State Governments of Kerala, Karnataka and Tamilnadu.

APPENDIX -IVCOST OF CULTIVATION FOR PLANTING ONE HECTARECARDAMOM PLANTATION IN KERALA

(PLANTS: 1250 NOS; WAGE RATE: Rs.15.65)

I T E M	Labour required	Amount Rs. Ps.
<u>Ist Year</u>		
<u>A. LABOUR</u>		
1. Clearing under growth and thinning Excess shade	40	626.00
2. Alignment and pegging	12	187.80
3. Opening and filling pits	100	1565.00
4. Construction of foot paths/drainage etc.	10	156.50
5. Planting, staking and Mulching	20	313.00
6. Weeding twice	50	782.50
7. Plant protection operations	15	234.75
	----- 247	----- 3865.55
<u>B. COST OF INPUTS</u>		
1. Cost of seedlings		2500.00
2. Cost of Plant Protection Chemicals		350.00
3. Cost of fertilizers		---
	Total	----- 6715.55 =====
<u>2nd Year</u>		
<u>A. LABOUR</u>		
1. Weeding thrice	100	1565.00
2. Shade Regulations	10	156.50
3. Gap filling including pitting, filling, staking and mulching	7	109.55
4. Plant Protection Operations	20	313.00
5. Manuring	20	313.00
6. Digging'	50	782.50
7. Renovation Pit formation	13	203.45
8. Maintenance of Drains/foot paths etc.	7	109.55
	----- 227	----- 3552.55

APPENDIX VESTIMATED COST OF CULTIVATION FOR PLANTINGONE HECTARE CARDAMOM PLANTATION IN KARNATAKA(PLANTS: 3000 NOS. WAGE RATE: Rs.9.42)

I T E M	Lābōūr required	Āmōunt Rs. Ps.
<u>Ist Year</u>		
<u>A. LABOUR</u>		
1. Clearing under-growth and thinning excess shade	40	376.80
2. Alignment and pegging	12	113.94
3. Opening, filling pits	100	942.00
4. Construction of footpaths/Drainage etc.	10	94.20
5. Planting, staking and mulching	20	188.40
6. Weeding twice	50	471.00
7. Plant Protection operations	15	141.30
	----- 247	----- 2326.74
<u>B. COST OF INPUTS</u>		
1. Cost of seedlings @ Re.1.00 x 3000		3000.00
2. Cost of Plant Protection Chemicals		350.00
3. Cost of Fertilizers		---
	Total	----- 5676.74 =====
<u>2nd Year</u>		
<u>A. LABOUR</u>		
1. Weeding thrice	100	842.00
2. Shade regulations	10	94.20
3. Gap filling including pitting, filling, staking and mulching	7	65.94
4. Plant Protection operations	20	188.40
5. Manuring	20	188.40
6. Digging	50	471.00
7. Renovation pit formation	13	122.46
8. Maintenance of drains/footpaths	7	65.94
	----- 227	----- 2138.34

ESTIMATED COST OF CULTIVATION FOR PLANTING ONE
HECTARE CARDAMOM PLANTATION IN TAMILNADU

(PLANTS: 1250; WAGE RATE - Rs.11.82)

I T E M	Labour required	Amount Rs. Ps.
<u>1st Year</u>		
<u>A. LABOUR</u>		
1. Clearing under growth and thinning excess shade	40	472.80
2. Alighment and pegging	12	141.84
3. Opening filling pits	100	1182.00
4. Construction of footpaths/ drainage etc.	10	118.20
5. Planting, staking and mulching	20	236.40
6. Weeding twice	50	591.00
7. Plant protection operations	15	177.30
	247	2919.54
<u>B.COST OF INPUTS</u>		
1. Cost of seedlings - @ Rs.2/- x 1250		2500.00
2. Cost of Plant Protection Chemicals		350.00
3. Cost of fertilizers		---
	Total	5769.54
<u>2nd Year</u>		
<u>A. LABOUR</u>		
1. Weeding thrice	100	1182.00
2. Shade regulations	10	118.20
3. Gap filling including pitting, filling, staking and mulching	7	82.74
4. Plant Protection operations	20	236.40
5. Manuring	20	236.40
6. Digging	50	591.00
7. Renovation pit formation	13	153.66
8. Maintenance of Drains/footpaths etc.	7	82.74
		2683.14

APPENDIX VII

COST OF MAINTENANCE OF ONE HECTARE OF CARDAMOM PLANTATION

(Kerala: Plants:1250; Wage:Rs.15.65; Karnataka: Plants:3000; Wage:Rs.9.42; Tamilnadu
Plants:1250; Wage: Rs.11.82)

Particulars	Kerala		Karnataka		Tamilnadu	
	Labour required	Amount	Labour required	Amount	Labour required	Amount
<u>A. LABOUR</u>						
1. Weeding & Thrashing	100	1565.00	90.00	847.80	100	1182.00
2. Maintenance of Drains & Footpaths	7	109.55	10.00	94.20	7	82.74
3. Shade regulation	10	156.50	5.00	47.10	10	118.20
4. Gap filling including pitting filling, staking & mulching	5	76.25	5	47.10	5	59.10
5. Plant Protection operations	45	704.25	65	612.30	45	531.00
6. Manuring	20	313.00	35	329.70	20	236.40
7. Harvesting	125	956.25	125	1177.50	125	1477.50
8. Collection of fire wood and curing	100	1565.00	60	565.20	100	1182.00
	<u>412</u>	<u>6447.80</u>	<u>395</u>	<u>3720.90</u>	<u>412</u>	<u>4869.84</u>
<u>B. COST OF INPUTS</u>						
1. Cost of seedlings 5% of the original plant population @ Re.1 per seedlings for Karnataka and Rs.2/- per seed- ling for Kerala & Tamilnadu		125.00		150.00		125.00
2. Cost of Plant Protection Chemicals		350.00		350.00		350.00
3. Cost of Fertilizer		750.00		750.00		750.00
GRAND TOTAL:		9272.80		6570.00		7694.84

APPENDIX VIICOST OF PRODUCTION OF CARDAMOMQUESTIONNAIRE

1. Name of respondent :
2. Relationship with the estate { (a) Owner:
 } (b) Manager:
 } (c) Other:
3. Address of the estate }
with village, taluk, }
district and State }
4. Total land with the owner }
and total income per year }
from landed properties }
5. Total income per year
from all sources
6. Total income per year
from cardamom estate
7. Area under cardamom } (a) Owner :
cultivation } (b) Leased in:
 } (c) Total :
8. Annual land taxes paid
for own cardamom estate.
9. Annual rent paid for)
leased in land for cardamom }
estate . }
10. Is your cardamom estate }
registered? }
11. When did the cardamom)
estate came to you and }
how? }

12. Acreage under cardamom and approximate market value of the cardamom estate in the locality per acre. }
13. Variety of cardamom cultivated (majority) }
14. System of cultivation : (a) Rainfed:
(b) Irrigated:
(c) Partly irrigated:
15. If irrigated, details of irrigation. (a) Type :
(b) Source of water:
(c) Duration :
(d) Approximate cost per year:
16. Approximate number of plants per acre }
17. Details of yielding area { a) Yielding area: _____ acres
b) Nonyielding area: _____ acres
c) Other crops : _____ acres.
18. Do you own cardamom nursery? }
19. Do you undertake rhizome planting { a) New planting:
b) Gap filling :

20. Cost of cultivation: (per acre) (1984-85 season)

S. No	Items	First year		Second year		Third year		Fourth year	
		Labour required	Cost	Labour required	Cost	Labour reqd.	Cost	Labour required.	Cost
1.	Clearing undergrowth and thinning of excess shade								
2.	Alignment and pegging								
3.	Opening and filling pits								
4.	Construction of foot paths drainage etc.								
5.	Planting, staking and mulching								
6.	Weeding								
7.	Plant protection operations.								
8.	Manuring operations								
9.	Harvesting								
10.	Collection of firewood and curing								
11.	Other operations (specify)								
12.	Cost of seedlings								
13.	Cost of plant protection chemicals								
14.	Cost of manures, fertilizers, etc.								
15.	Other material inputs								
	Total								

21. Other annual costs (1984-85 season)
- (a) Cleaning and sorting : Rs. _____
- (b) Storage : Rs. _____
- (c) Packing : Rs. _____
- (d) Transport : Rs. _____
- (e) Agricultural income tax paid : Rs. _____
- (f) Rate of bonus paid : Rs. _____
- (g) Any other expenses (specify) : Rs. _____
22. Wage rate per labour (1984-85) : Rs. _____
23. Number of permanent labourers engaged in the year 1984-85 : _____
24. Number of temporary labourers engaged in the year 1984-85 : _____
25. Output and sales:
- (a) Quantity of dry cardamom obtained : Kg. _____
- (b) Quantity sold in auction : Kg. _____
- (c) Quantity sold directly : Kg. _____
- (d) If you sold cardamom outside auction, why did so? :
- (e) To whom you sell directly? :
26. Price details (1984-85 season)
- a) Maximum rate received (i) Quantity: _____
(ii) Rs. _____ per kg.
- b) Minimum rate received (i) Quantity: _____
(ii) Rs. _____ per kg.
- c) Average rate received (i) Quantity: _____
(ii) Rs. _____ per kg.

27. Awareness of market prices: (1984-85 season)

(a) Maximum price prevailed: _____

(b) Minimum price prevailed: _____

30. Credit details:

Amount of loan taken : _____

Amount outstanding : _____

Purpose : _____

Source : _____

Interest rate : _____%

31. Reasons for delay in repayment of loan, if any. :

32. Subsidies received:

Subsidies received : Rs. _____

Purpose : _____

Source : _____

33. What are the difficulties in marketing your cardamom:

34. What are the difficulties in cultivation of cardamom:

35. Do you own a curing house or Electric Drier? If not, how do you cure your cardamom?
What is the cost per kg.

36. According to you, what is the main factors, which help you to increase the productivity }

37. What are the advantages of large growers over you? :
38. How many days/months in an year you will be there in the estate? :
39. What are the helps you expect from the Cardamom Board? :
40. Any other problem you would like to highlight? :

Place:

Date :

(Signature of Investigator)

APPENDIX IX

CARDAMOM GRADING AND MARKING RULES 1962*

1. Short title and application.- (1) These rules may be called the Cardamom Grading and Marking Rules, 1962.
(2) They shall apply to Cardamom (Elettaria Cardamom) (Capsules, seeds and powder) produced in India.
2. Definitions. - In these rules: -
 - (a) "Agricultural Marketing Adviser" means the Agricultural Marketing Adviser to the Government of India;
 - (b) "Schedule" means a Schedule to these rules.
3. Grade designations. - Grade designations to indicate the quality of Cardamom shall be as set out in column 1 of Schedules I to VI-A.
4. Definition of quality. - The quality indicated by the grade designations shall be as set out against each designation in Schedules I to VI-A.
5. Grade designation marks.- (1) The grade designation mark in the case of Cardamom (capsules, seeds and powder) packed in polythene or paper bags shall consist of a design incorporating the number of the certificate of authorisation the word "Agmark" and the grade approved by the Agricultural Marketing Adviser.

(2) The grade designation mark in the case of Cardamom (capsules, seeds and powder) packed in tin or glass containers shall consist of a paste-on label, specifying the grade designation and bearing the design of a map of India with the word "Agmark".

* As amended upto 31st December 1979.

(3) The grade designation mark in the case of Cardamom (capsules, seeds and powder) packed in containers of jute or cloth or in wooden cases as also in containers in which sealed polythene bags of graded Cardamom (capsules, seeds and powder) are packed, shall consist of a label specifying the grade designation and bearing a design consisting of an outline map of India with the word "Agmark" and the figure of the rising sun with the words "produce of India" and " " resembling the one as set out in Schedule VII.

6. Method of marking. - (1) The grade designation mark shall be securely affixed to, or printed on, each container in a manner approved by the Agricultural Marketing Adviser.

(2) In addition to the above, the following particulars shall also be clearly and indelibly marked on each container:-

(a) Date of packing in code or plain letters:

(b) Lot number; and

(c) Net weight.

(3) An authorised packer may, after obtaining the prior approval of the Agricultural Marketing Adviser, mark his private trade mark on a container, in a manner approved by the said officer, provided that the private trade mark does not represent a quality or a grade different from that indicated by the grade designation mark affixed to or printed on the container in accordance with these rules.

7. Method of packing.- (1) Cardamom capsules shall be packed in clean and sound containers e.g. wooden cases suitably lined with water-proof or craft paper or new jute bags with water-proof lining.

Cardamom Seeds shall be packed in clean and dry tin plate containers or wooden cases lined with water-proof or craft paper.

(2) Each container shall be securely closed and sealed in a manner approved by the Agricultural Marketing Adviser.

(3) Each package or container shall contain only goods of the crop of the year specified and of one grade designation only. Where more than one package is put in a large container all the packages shall bear Agmark labels and the outer container shall also bear an Agmark label indicating particulars of the contents.

8. Special conditions of certificate of authorisation.- In addition to the conditions specified in rule 4 of the General Grading and Marking Rules, 1937, the conditions set out in Schedule VIII shall be the conditions of every certificate of authorisation issued for the purpose of these rules.

S C H E D U L E - I
(See Rules 3 and 4)

Grade designations and definitions of quality of Alleppey Green Cardamoms

Grade Designation	Trade name	*Colour	Special Characteristics					Weight in G/L minimum	General Characteristics
			Empty malformed Capsules, per cent count maximum	Immature shriveled Capsules, % by count	Blacks & splits, in m.m.)	Size(Dia. of holes in m.m.)	Size(Dia. of holes in m.m.)		
1	2	3	4	5	6	7	8	9	
AGEB	Cardamom Extra Bold	Deep Green, or light Green.	2.0	2.0	0.0	7.0	435	1.The Cardamoms shall be the dried capsules of Elettaria cardamom grown in South India capsules being three cornered and having a ribbed appearance.	
AGB	Cardamom Bold	Do.	2.0	2.0	0.0	6.0	415		
AGS	Cardamom Superior	Do.	3.0	5.0	0.0	5.0	385		
AGS 1	Shipment Green 1	Do.	5.0	7.0	10.0	4.0	350		
AGS 2	Shipment Green 2	Do.	7.0	9.0	12.0	4.0	320		
AGL	Light	--	--	--	15.0	3.5	260	2. The capsules shall be free from insect infestation and visible mould.	
AGN(+)	..	--	--	--	--	--	--	--	

1
2
3
4
5
6
7
8
9

3. Thrip marks alone on the capsules shall not lead to the capsules have been infested by insects.

DEFINITION OF TERMS :

1. Empty and malformed capsules - Capsules which have no seeds or are scantily filled with seeds. For this purpose 100 capsules selected at random from the sample shall be opened out and the number of empty and malformed capsules counted.
2. Immature and shrivelled capsules.- Capsules which are not fully developed.
3. Blacks and Splits.- The former will include capsules having visibly blackish to black colour and the latter will include those which are open at corners for more than half the length.

*Colour.- Cardamoms shall be packed separately according to the colour as (a) Deep green, (b) Green, (c) Light Green and also Pale Brownish. The relevant colour of the cardamoms shall be indicated on the Agmark Labels provided at least 95% of the capsules correspond to any of the colour groups. Where the cardamoms are not of any one uniform colour mentioned above, there will be no indication of the colour on the labels.

(+)AGN.- The cardamom which does not conform to any of the grades AGEB to AGL shall be packed under the grade AGN against a "Firm Order". "Firm Order" means that the entire value of the goods contracted for, should have been obtained in advance by opening a cent per cent irrevocable letter of credit in India which is encashable on the production of shipping bill supported by receipt of shipment or guaranteed in any other way.

Tolerance - A tolerance of 5% of the next lower size is permissible.

S C H E D U L E - II
(See Rules 3 and 4)

Grade designations and definitions of quality of COORG GREEN Cardamoms

Grade Designation	Trade name	Special Characteristics						General Characteristics
		Empty and malformed capsules per cent by count maximum	Unclipped capsules per cent by count maximum	Immature and shrivelled capsules, per cent by weight maximum	Blacks and splits, per cent by count maximum	Size(Dia. of holes in mm.) of the sieve on which retained (A)	Weight in G/L minimum	
1	2	3	4	5	6	7	8	9
C.G.E.B.	Extra Bold	0.0	0.0	0.0	0.0	8.0	450	1.The cardamoms shall be the dried capsules of Elelettaria cardamom grown in South India
C.G.B.	Bold	2.0	0.0	3.0	0.0	7.5	435	colour ranging from Greenish to Brown global shape, skin ribbed or smooth; the pedicels separated.
C.G.1	Superior	3.0	0.0	5.0	0.0	6.5	415	
C.G.2	Coorg Green or Motta Green	5.0	3.0	10.0	0.0	6.0	385	
C.G.3	Shipment	10.0	5.0	15.0	10.0	5.0	350	
C.G.4	Light	..	..	..	15.0	3.5	280	
CGN @	..	..	..	..	..	..	..	2. The capsules shall be free from insect infestation and visible mould. 3. Thrip marks alone on the capsule shall not lead to the conclusion that the capsules have been infested by insects.

DEFINITION OF TERMS:

1. Empty and malformed capsules.- Capsules which have no seeds or are scantily filled with seeds. For this purpose 100 capsules selected at random from the sample shall be opened out and the number of empty and malformed capsules counted.
2. Immature and shrivelled capsules - Capsules which are not fully developed.
3. Blacks and Splits - The former will include capsules having visibly blackish to black colour and the latter will include those which are open at corners for more than half the length.
4. Unclipped Capsules - Capsules in which the tips have not been trimmed.

@CGN.- The cardamom which does not conform to any of the grades CGEB to CG4 shall be packed under the grade CGN against a "Firm Order". "Firm Order" means that entire value of the goods contracted for, should have been obtained in advance by opening a cent per cent irrevocable letter of credit in India which is incashable on the production of shipping Bill supported by receipt of shipment or guaranteed in any other way.

*Coorg cardamoms shall be packed separately according to colour e.g. (1)Golden to light creamy, (2) Creamy, (3) Light Greenish to Greenish and (4) Brownish to Brown in respect of grade designations CGEB to CG3 provided at least 95% of the capsules correspond to any of the colour groups. Where the cardamoms are not of any uniform colour there will be no indication of colour on the Agmark label.

(A) A tolerance upto 5% of the next lower size is permissible.

S C H E D U L E -III
(See Rules 3 and 4)

Grade designations and definitions of quality of Bleached or
Half-Bleached Cardamom

Grade Designation	Special Characteristics			Weight in G/L maximum.	General Characteristics
	Empty and malformed capsules, per cent by count, maximum	Immature and shrivelled capsules per cent by wt. maximum	Size (Diameter of holes in mm) of the sieve on which retained (A)		
BL 1*	0.0	0.0	8.50	340	The cardamom shall be the fully developed dried capsules of Elettaria cardamom bleached and/or half-bleached by sulphurizing colour ranging from pale cream to white, @global or three cornered with skin ribbed or smooth. The capsules shall be free from visible mould and insect infestation. Thrip marks alone on the capsules shall not lead to the conclusion that the capsules have been infested by insects.
BL 2*	Do.	Do.	7.00	340	
BL 3	Do.	Do.	5.00	300	
BLN	--	--	--	--	

DEFINITION OF THE TERMS:

1. Empty and malformed capsules.- Capsules which have no seeds or are scantily filled with seeds. For this purpose 100 capsules selected at random from the sample shall be opened out and the number of empty and malformed capsules counted.
2. Immature and shrivelled capsules.- Capsules which are not fully developed.
3. BLN.- The cardamom which does not conform to any of the grades BL1 to BL3 should be packed under the grade BLN against a "Firm Order". "Firm Order" means that the entire value of the goods contracted for, should have been obtained in advance by opening a cent per cent irrevocable letter of credit in India which is encashable on the production of shipping bill supported by receipt of shipment or guaranteed in any other way.
4. @Cardamoms shall be packed separately according to whether they are fully bleached or half-bleached. In the latter case the colour of the capsules may be indicated at the request of the packer on Agmark label as (1) Pale creamy or (2) Dull White.
5. *The word "Special" would be affixed to grades BL1 and BL2, if atleast 95% of the capsules do not have thrip marks over 50% of their body surface.
6. (A) A tolerance of 5% of the next lower size is permissible.

S C H E D U L E -IV
(See Rules 3 and 4)

Grade designations and definitions of quality of BLEACHABLE WHITE Car s						
Grade designation	Trade name	Special characteristics				General characteristics
		Empty and malformed capsules, percent by count, maximum	Immature and Shrivelled capsules, per cent by weight maximum	Size (Diameter of holes in m.m. of the sieve in which retained)	Weight G/L minimum	
1	2	3	4	5	6	7
BW 1	Mysore/Mangalore Bleachable Cardamom A.Clipped	1.0	0.0	7.0	460	The cardamoms shall be the fully developed dried capsules of Eleteria Cardamom grown in Mysore State with a reasonably uniform shade of white, light green or light grey colour and suitable for bleaching.
BW 2	Mysore/Mangalore Bleachable Cardamom A.Unclipped.	1.0	0.0	7.0	460	The capsules shall be free from visible mould and insect infestation.
BW 3	Mysore/Mangalore Bleachable Bulk Cardamom Clipped.	2.0	0.0	4.3	435	

1	2	3	4	5	6	7
BW 4	Mysoore/Mangalore Bleachable Bulk Cardamom Unclipped.	2.0	0.0	4.3	435	

BW Non-Specified Thrip marks alone on the capsules shall not lead to the conclusion that the capsules have been infested by insects.

DEFINITION OF TERMS:

1. Empty and malformed capsules.- Capsules which have no seeds or are scantily filled with seeds. For this purpose 100 capsules selected at random from the sample shall be opened out and the number of empty and malformed capsules counted.
2. Immature and shrivelled capsules.- Capsules which are not fully developed.
3. "BW Non-Specified".- The Cardamom, which does not conform to any of the Grades BW1 to BW4, may be packed under the grade "BW non-Specified" against a "Firm Order".
4. "Firm Order" means that the entire value of the goods contracted for should have been obtained in advance by opening a cent per cent irrevocable letter of credit in India which is encashable on the production of shipping bill supported by a receipt of shipment or guaranteed in any other way.

SCHEDULE -V

Grade designations and definitions of "Mixed" cardamoms

Grade designation	Trade name	Special Characteristics					Weight in Gms/ litre	General characteristics
		3	4	5	6	7		
1	2	Empty & malfor- med cap- sules per cent by count maximum	Immature & shri- velled capsules per cent maximum	Blacks splits by count maximum	Size*(Dia. of hole in m.m. of the sieve on which retained) minimum			
		2.0	2.0	0.0	7.0	435	1. The cardamoms shall be dried and mixed capsules of different varieties of Elettaria car- damom.	
MEB	Mixed Extra Bold	2.0	2.0	0.0	7.0	435	1. The cardamoms shall be dried and mixed capsules of different varieties of Elettaria car- damom.	
MB	Mixed Bold	2.0	2.0	0.0	6.0	415	2. The capsules shall be free from insect infestation and visible mould.	
MS	Mixed Superior	3.0	5.0	0.0	5.0	385	3. Thrip marks alone on the cap- sules shall not lead to the con- clusion that the capsules have been infested with in- sects.	
MS 1	Mixed Shipment I	5.0	7.0	10.0	4.0	350		
MS 2	Mixed Shipment II	7.0	9.0	12.0	4.0	320		
ML	Mixed light	..	..	15.0	3.5	260	
MN(a)	..	..	..	..	..	..

DEFINITIONS:

1. Empty and malformed capsules.- Capsules which have no seeds or are scantily filled with seeds. For this purpose 100 capsules selected at random from the samples shall be opened out and the number of empty and malformed capsules counted.
2. Immature and shrivelled capsules.- Capsules which are not fully developed.
3. Blacks and splits.- The former will include capsules having visibly blackish to black colour and the latter will include those which are opened at corners for more than half the length.
4. Tolerance.- A tolerance of 5% of the next lower size is permissible.
5. MN(a).- The cardamom which does not conform to any of the grades from MEB to ML shall be packed under this grade again a "Firm Order". Firm Order" means that the entire value of the goods contracted for, should have been obtained in advance by opening a cent per cent irrevocable letter of credit in India which is encashable on the production of shipping bill supported by a receipt of shipment or guaranteed in any other way.

SCHEDULE -VI

Grade designations and definitions of quality of Cardamom seeds

Grade Designation	Trade name	Special Characteristics				General Characteristics
		Extraneous matter, per cent by weight maximum	**Light seeds per cent by weight maximum	Weight in G/L minimum		
1	2	3	4	5	6	
CS 1	Prime	1.0	3.0	675		1. Shall be decorticated and dry seeds of any variety of Elettaria cardamom.
CS 2	Shipment	2.0	5.0	650		2. The seeds shall be free from visible moulds and insect infestation.
CS 3	*Brokens	10.0	..	..

DEFINITION OF TERMS:

*Brokens.- Include also light seeds.

Extraneous matter.- Includes Calys Pieces, stalk bits and other foreign matter.

**Light seed.- Include seeds brown or red in colour, immature and shrivelled seeds.

S C H E D U L E VI-A
(See Rules 3 and 4)

Grade designation and definitions of quality of cardamom powder

Grade Designation	Special characteristics		General characteristics
	Moisture per cent by weight maximum	Total ash per cent by weight maximum	
1	2	3	5
Standard	14.0	8.0	3.0

1. Cardamom powder shall be the material obtained from the seeds separated from the capsules of Elettaria Cardamom (L).

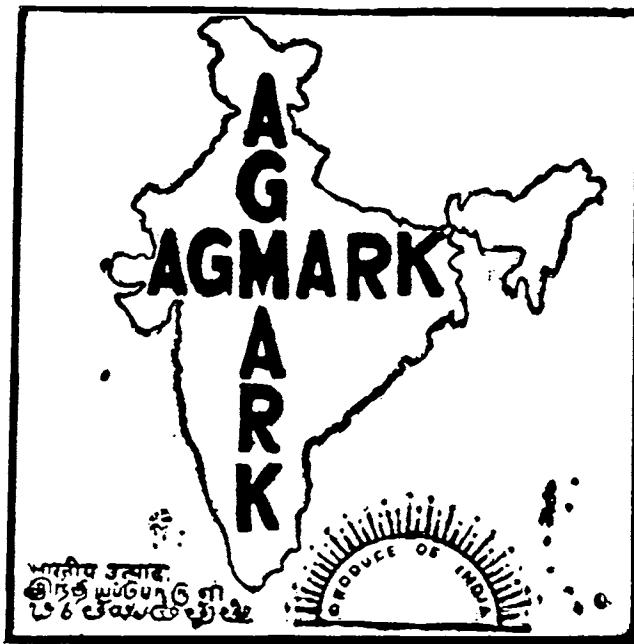
2. It shall be free from admixture, from mould growth from insect infestation or musty odour.

3. It shall be free from coarse particles and ground to such a fineness that the whole of it passes through a 500 micronsieve.

SCHEDULE VII

(See Rule 5)

MAP OF INDIA



Note: The Tamil and Telugu words will not occur in the labels in case where commodities are graded for the purpose of export.

SCHEDULE VIII
(See Rule 8)

(a) An authorised packer shall make such arrangements for testing cardamoms as may be prescribed and samples thereof shall be forwarded to such control laboratory as may be notified from time to time by the Agricultural Marketing Adviser.

(b) An authorised packer shall provide such facilities to Inspecting Officers duly authorised by the Agricultural Marketing Adviser for sampling, testing and affixations of grade designation marks, as may be prescribed from time to time.

(c) All instructions regarding the methods of sampling and analysis, sealing and marking the containers and maintenance of records, etc. which may be issued from time to time by the Agricultural Marketing Adviser shall be observed.

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