MARKETING OF COCONUTS IN CALICUT DISTRICT - AN ECONOMIC INVESTIGATION

BY

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THESIS

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the requirements for the degree

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DECLARATION

I hereby declare that this thesis entitled "Marketing of Coconuts in Calicut District - An Economic Investigation" is a bonafide record of research work done by me during the course of research and the thesis has not previously formed the basis for the award to me of any degree, diploma, associateship, fellowship or other similar title, of any University or Society.

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We, the undersigned, members of the Advisory Committee of Kum. Renuka Nair, V., a candidate for the degree of Master of Science in Agriculture with major in Agricultural Economics, agree that the thesis entitled "Marketing of Coconuts in Calicut District - an Economic Investigation" may be submitted by Kum. Renuka Nair, V. in partial fulfilment of the requirement for the degree.

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To my most beloved father

who is no more.

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Introduction

INTRODUCTION

Modern agriculture, unlike traditional agriculture, is market-oriented and hence market and marketing play a crucial role in it. Since production is mainly for the market, the evaluation of the product by the market in the form of prices can make or mar farmers' production decisions, currently as well as in future. Needless to say, the market prices must cover not only production and marketing costs but they should be sufficiently higher than these costs to leave enough incentive to the farmer to produce more. Whether or not the market prices serve this purpose depend upon the relevant demand and supply conditions. However, even fairly high market prices may not be helpful to give the farmer the necessary incentive if the marketing system fails to adequately ~~reach~~ make available the higher prices to the farmer. In that event, while the consumer has to part with relatively larger fraction of his income on the commodity concerned than otherwise would be the case, the farmer will not be benefited by it. This happens when the marketing system is not efficiently organized. There are two aspects to marketing efficiency. One is what is

known as physical or technical efficiency which is concerned with performance of a given physical activity. The other aspect is what is known as economic efficiency. In the present discussion we are mainly concerned with the latter, given the former. Marketing margins, spatial and temporal price differences etc. which are unduly high as compared to the performance of given marketing functions, are indicators of economic inefficiency in marketing, which while reducing the welfare of the consumer, retard agricultural development and welfare of farmers. While increases in agricultural production and productivity, which is the concern of present day agricultural development strategies, are very much necessary for agricultural and rural development in general, the fruits of such developments may not adequately reach the farmers if a marketing sub-system of the agricultural system continues to be weak and inefficient.

Studies on agricultural marketing in India provide divergent results with regard to the functioning of these markets. While some show the existence of monopsonistic hold of traders on farmers and high marketing costs, there are others which give a quite different picture. Thus, performance is different in different market situations.

Therefore there is need for studying different situations and commodities to come to meaningful conclusions regarding each.

Coconut is one of the major commercial crops grown in Kerala State and Kerala is the major producer of coconuts in India. Coconut accounts for around one-third of the total cultivated area in Kerala. It is grown in all the districts in the state. Rural economy of Kerala is closely woven around the coconut crop. It is estimated that (Thampan, 1981) about ten million people depend directly or indirectly on coconut cultivation for their livelihood. Unlike other commercial crops of Kerala, coconut has always been a poor mans or small holder's crop. Perhaps in no other crop, the involvement of small and marginal farmers is so spectacular as in the case of coconut. The state derives nearly 15 per cent of its annual income and 30 per cent of its agricultural income from coconuts (Barnala, 1978). More than 50 per cent of the coconuts and its products produced in Kerala find their ultimate buyers in the rest of the country, involving a lengthy marketing chain. Even within the state, since the major use to which the nuts are put *is* in the production of oil, the part played by marketing is quite considerable.

In view of the importance of coconut in the agricultural economy of Kerala as mentioned above, it was felt that a study on marketing of coconuts would be quite appropriate. Hence the present study. However, on account of the constraints in time, the present study is limited to marketing of coconuts in Calicut district. Among the districts in Kerala, Calicut ranks first in terms of both area as well as production. Calicut city is the most important market centre for copra and coconut oil.

The objectives of the study are the following.

1. To investigate about the marketing practices and problems with reference to price fixation.
2. To study the market structure. The role of Coconut Development Corporation will also be studied.
3. To assess marketing efficiency in terms of marketing costs and margins, degree of market integration, spatial and temporal price variations etc.

The ~~study~~ thesis is divided into six chapters including the present one. A brief description of the area of study is given in the next chapter. The third chapter presents a review of literature. The fourth chapter deals with the materials and methods used in the study. In the fifth chapter, the results of the study and discussions thereon are presented. A summary of the results and the major conclusions are given in the final chapter.

Area of Study

AREA OF STUDY

Calicut district which was formerly one among the largest districts in Kerala, was reduced to one of the smallest with the formation of Malappuram district on 1st June, 1969, and Wynad district on 1st November, 1980. Calicut district now consists of three taluks viz. Kozhikode, Badagara and Quilandy. The Headquarters of the district is Calicut. This coastal town was known all over the world and had flourishing trade with China between the 7th and 12th centuries and with Arabia between 12th and 15th centuries.

Location

Calicut district is bounded on the north by Cannanore district, on the east by Wynad district, on the south by Malappuram district and on the west by the Arabian sea. It is situated, between north latitudes 11° 08' and 11° 50' and east longitudes 75° 30' and 76° 08'.

Administrative set up

The three taluks are subdivided into 103 revenue villages. The whole district is also divided into

12 C.D. blocks and 77 panchayats. Calicut city is one among the three cities in the state. Badagara is the only town in the district.

Topography

Based on the physical features, the district can be divided into three natural divisions (1) The mountainous region-high land of 250 ft above mean sea level. (2) The flat coastal belt-low land falling below 25 ft and (3) the undulating area between the above two regions - the mid-land. All the three taluks are spread over in all the three regions. The district has a coastal length of about 80 km. The high-land region accounts for 26.80 per cent of the total area of the district and a population of 4 per cent. The low land region accounts for 15.55 per cent of the total area and a population of 25 per cent.

Soil

The soils of the district are of three major types - sandy loam, loam with laterite sub-soil and virgin forest soil. In the narrow coastal belt, the soil is sandy. In the mid-land region, the soil is mostly laterite. The high land is covered by forest soil,

rich in organic matter and is particularly suitable for crops like rubber, pepper, coffee and cocoa. The laterite soil is suitable for coconut, arecanut and fruit crops. Paddy fields are found in low and mid-land regions. Besides mid-land, coconut is cultivated in low land also.

Climate

The climate is tropical. The most important rainy season is during the South-West monsoon, commencing from May-June and ending in September. North-East monsoon rains are received during October and November. The average annual rainfall in the district is 37796 mm. During the period December to March, practically no rain is received. Humidity is very high in the coastal region. Both humidity and temperature decline progressively from the coastal belt to the Western Ghats.

Rivers

The district is blessed with a number of rivers viz., Kuttiadi, Korapuzha, Kallai, Chaliyar and Kadalundi.

Area and population

Calicut district has an area of 2345.30 sq.m. This accounts for 6 per cent of the total area of the State.

The largest taluk is Kozhikode with an area of 1026.60 sq.km. and the smallest is Badagara with an area of 549.80 sq.km. Quilandy taluk has an area of 756.90 sq.km.

The population of the district has increased from 18.22 lakhs in 1971 to 22.45 lakhs in 1981 registering a decadal average increase of 23.25 per cent. The district has an urban population of 6.10 lakhs and a rural population of 16.35 lakhs. The density of population per sq. km is highest (1143) in Kozhikode taluk followed by Badagara (909) and is lowest in Quilandy taluk (756). The sex ratio is 1020 females for 1000 males. The percentage of literacy rate is 70.12 against the state average 70.42 per cent.

Land use pattern

The latest data on land use pattern is given in Table 1.

Size of holdings

The distribution of operational holdings in Calicut district during 1976-77 is given in Table 2. Out of 3.17 lakh holdings, 87.77 per cent are below one hectare.

Table 1. Land use pattern in Calicut district 1982-'83

Sl. No.		In hectares	% of the total geographic area
1	2	3	4
1	Total geographical area	233330	100.00
2	Forests	41386	17.74
3	Land put to non-agricultural use	16030	6.87
4	Barren and uncultivable land	1754	0.75
5	Permanent pastures and grazing land	114	0.05
6	Land under miscellaneous tree crops	3003	1.29
7	Cultivable waste	3132	1.34
8	Fallows other than current fallow	1353	0.58
9	Current fallow	2364	1.01
10	Net area sown	164194	70.37
11	Area sown more than once	34161	14.64
	Total cropped area	198355	85.01

Source: Directorate of Economics and Statistics, Trivandrum.

Table 2. Operational holdings in Calicut district according to size - 1976-'77

(Size of holdings/hectare)

Size of holding	Calicut		State	
	No.of holdings	% to total	No.of holdings	% to total
1	2	3	4	5
0.02 - 0.99	278339	87.77	2866518	87.07
1.00 - 1.99	24710	7.79	276917	8.41
2.00 - 3.99	10371	3.27	112195	3.41
4.00 - 9.99	3221	1.02	33047	1.00
10.00 and above	487	0.15	3494	0.11
Total	317128		3292171	

Source: Agricultural Census, 1976-77.

Cropping pattern

The details of area, production and productivity of crops is given in Table 3. Coconut and paddy are the principal crops of the district.

Coconut occupies the maximum area under crops covering almost 50 per cent of the gross cropped area and 70 per cent of the net area sown in the district. It is the major source of income to the cultivators. The area under coconut has been steadily increasing. It was 96900 hectares in 1973-74 and it increased to 98392 hectares in 1982-'83.

Irrigation

Gross irrigated area in Calicut district (including Wynad) in 1978-79 was 8049 hectares, which was only 2.9 per cent of the total cropped area. Details of area irrigated by different sources in 1980-'81 is given in Table 4. Information on cropwise area is given in Table 5. It can be seen that irrigated area under coconut is insignificant.

Table 3. Area, production of important crops in Calicut district and productivity of crops in the district compared to Kerala state as a whole (1982-83)

Name of crops	Area in hectares	% of gross cropped area	Production in tonnes	Productivity in tonnes per hectare	
				Calicut	Kerala
1	2	3	4	5	6
Rice	26488	13.35	28388	1.07	1.67
Pulses	1264	0.64	962	0.76	0.72
Pepper	12502	6.30	3000	0.24	0.23
Ginger	1600	0.80	3850	2.41	2.49
Turmeric	179	0.09	408	2.28	1.82
Cardamom	412	0.21	9	0.02	0.03
Arecanut	5270	2.66	1583*	3.00 (lakh nuts)	1.81 (lakh nuts)
Cinnamon	120	0.06	NA	-	-
Mango	5837	2.94	20406	3.50	4.44
Jack	5930	2.99	271**	4570 (Nos.)	4250 (Nos)
Banana	946	0.48	11903	12.58	1.20
Others	1992	1.00	6655	3.34	3.67
Papaya	988	0.50	4940	5.00	6.34
Cashewnut	4220	2.13	4968	1.18	0.53
Tapioca	3154	1.59	38952	12.35	16.90
Other vegetables	4512	2.27	-	NA	-
Coconut	98392	49.60	622*	6320 (Nos.)	4720 (Nos.)
Lemongrass	760	0.38	13	0.006	0.004
Rubber	17822	8.98	10683	0.60	0.60
Cocoa	705	0.36	41	0.06	0.08
Other crops	5262	2.65	-	-	-
Total cropped area	198355				

Source: Farm Guide, 1985.

* Million nuts
** Lakhs No.of fruits

Table 4. Area under irrigation - Source-wise, 1980-81 in Calicut district in comparison with State figures

Sources	District	State
1	2	3
Government canal	4392	99397
Private canal	151	5299
Government tanks and wells	137	5048
Private tanks and wells	782	50922
Minor and lift irrigation	1733	33702
Other sources	1419	43606
Total	8614	237974

Source: Statistics for planning 1983 (Directorate of Economics and Statistics - Government of Kerala).

Table 5. Area under irrigation - Crop-wise (1980-81)
(Area in hectares)

Name of crops	District	State
1	2	3
Paddy	7219	276863
Vegetables	157	3879
Tubers	35	1297
Coconut	45	60081
Arecanut	58	14863
Cloves, nutmeg, cinnamon	3	933
Other condiments and spices	1	997
Banana	753	4977
Betel leaves	23	701
Sugarcane	-	854
Others	1040	15481
Total	9334	380926

Source: Statistics for planning 1983 (Directorate of Economics and Statistics - Government of Kerala).

Rainfall in Calicut district being high, there is adequate ground water potential and a number of rivers and streams as well. As such there is great scope for increasing irrigation facilities which is vital for the development of agriculture in general and coconut in particular.

Infrastructure

Roads play a vital role in transport in the district owing to limited railway lines laid. The district has a fairly extensive road net work. The length of roads in Calicut district was 5022 km as on 1.4.1981. It has 75.48 km of broadguage railway line. The district has five important rivers connecting the mid-land and coastal regions. Agricultural produce, coconut, coconut husk, timber etc. are transported through rivers in bulk quantities as it is cheaper. It has an intermediate port at Calicut (including Beypore) and a minor port at Badagara.

The district has a fairly good net work of banking facilities. Thirtyone commercial banks have branches in the district. Canara Bank is the lead bank of the district

with 25 branches as on 31.3.1985. The South Malabar Gramin Bank had 58 branches in the district as on 31.3.1985.

Trade and commerce

Calicut city is a flourishing centre of trade, both internal and international. Besides, coconut and its products as well as coir, other major items of trade are pepper, arecanut etc.

Calicut has a regulated market which was formed by the Malabar Market Committee under the Madras Commercial Crops Act, 1953 when the area covered by the district was under the then Madras state. This market was regulated for arecanuts only. But this market has not been functioning for the past five years.

Review of Literature

REVIEW OF LITERATURE

In this chapter an attempt is made to review some of the past studies relating to marketing of coconut and its products, is reviewed. This chapter consists of two sections. Studies on coconut and copra are reviewed in the first section. The second section deals with studies on coconut oil.

Studies on coconut and copra marketing

Venkataraman (1958) in his study of marketing of coconut products in India estimated that producers' share in the price paid by consumer was about 60 per cent. He pointed out that the price which the cultivator received for fresh nuts depended on proximity of market and copra content of coconut. He suggested regulated markets, multi-purpose co-operatives, marketing societies, warehousing facilities and quality improvement of copra.

Venkataraman (1961) identified that uncertain markets and lack of incentives were the drawbacks in marketing. He suggested the need for providing short,

medium and long term loans, starting of marketing co-operative societies with godown facilities and copra processing units. Effective linking up of these marketing societies with service societies on the one hand and apex marketing societies on the other will ensure orderly marketing of nuts collected from growers and a better return to growers for their labour.

Lakshmanachar (1960) studied the fluctuations of coconut prices and explained that the size and quality of nuts, availability, imports of copra and oil, middlemen and speculators all contributed to the instability of coconut prices. The main reasons for variations in wholesale prices are differences in quantity and quality of nuts produced during different periods of the year and difference in price itself varied in relation to seasonal demand for it by coir industry. Regulation of imports and licenced warehouses were the suggested measures for stabilisation.

Kuttappan (1969) examined the working of coconut processing and marketing co-operatives in Kerala. The study revealed that inadequate working capital, lack of co-ordination among different types of societies, poor organisation, wide fluctuations in the price of copra and oil and spread of

small producers over a wide area were bottlenecks effecting marketing efficiency.

Librero (1971) using the tool of a formal econometric model suggested that further increase in the production of copra in Phillippines will bring a fall in prices and a lower total income for exporters and producers. Smaller marketing costs as well as reduction or addition of tariffs could result in an increased consumption of coconut products.

Khan (1972) undertook a study in marketing of coconut in Tiptur taluk of Tumkur district in Mysore state. It was found that the marketable surplus was more in large farms when compared to small farms, i.e. 93.04 per cent and 78.00 per cent respectively. Producers' share in consumers' rupee was 71.66 per cent. Marketing costs accounted for 21.1 per cent of consumers' price which rose to 28.34 per cent when middle men operated in the marketing channel.

Vega (1972) included in his study fifty copra producers from Alaminos Laguna. He observed that the copra producers employed the 'tapahan' method of processing nuts into copra. Grading was done by buyer with a moisture meter. The operators had only one buyer who is a copra

exporter. He found that the reasons for choosing him as a market outlet were nearest to source, good grading, high prices offered for their product and regular buyer. Farmers obtained market information from other copra producers and newspapers.

Castro (1973) in his study on marketing of coconut farm products in the three provinces of Davao, Phillippines, found that all farmers in Davao del Norte and Davao Oriental sold their products as copra while in Davao del 16 per cent sold as husked nuts. The main market outlet was the town buyers and they served as agents to exporters or processors.

Almoro (1974) studied fifty three coconut and copra producers in selected towns of Quezon. The owners received the highest price of P 35 per 100 nuts and P 117/100 kg of copra sold. Among the farmers, credit marketing was the most influential choice in their choice of market outlets. Town traders paid an average price of P 340/1000 nuts and P 130/100 kg of copra produced. barrio buyers obtained 10 per cent for coconut and nine per cent for copra.

Cading (1974) undertook a study in Quezon province to investigate the seasonal fluctuations of prices of copra, husked nuts and dessicated coconuts in Lucenae,

Manila and foreign markets. Index numbers were computed and price movements were determined using the method of computing 12 month moving averages. He observed that the price of dessicated coconut was highest during summer when demand for confectionaries increased. It was found that the seasonal variation of coconut production as affected by seasonal rainfall contributed further to fluctuations of copra prices in the two domestic markets.

Lantican (1974) in his study of marketing of green or mature coconuts in Los Banos, Laguna studied 20 'buko' retailers and 50 coconut farmers producing green or mature nuts. Net benefit of the biggest retailer was nearly four times higher than the smallest retailer and three times higher than the average retailer. Contractors were the most common market outlet of producers since they extended credit.

Pillai (1975) in his study on coconut cultivation in Lakshadweep pointed out that total copra produced on islands was to the tune of 1670 tonnes of which 1500 tonnes were marketed in Calicut and Mangalore. He reported that Laccadive copra fetched a fair price in the market and was considered on par with Rajapur grade copra. The cultivators and copra producers were not satisfied with the price they

got. He stressed the need for an effective agency to safeguard the interests of the growers.

Chaterjee (1978) collected some data on the average annual arrival of green coconuts at Calcutta market. It was observed that approximately three crores of tender nuts arrive annually in the College Street market and a little greater than 50 lakhs in all other markets of Calcutta. The rate of wholesale market varied between Rs.40 and Rs.70 per 100 nuts depending on the size of nuts and in retail shops from 60 ps to 1 rupee per nut on size.

Valiente (1979) did 12 regional socio economic and marketing studies of coconut industry. It covered 2350 producers and 598 buyers. The net profit for all farms averaged P 660.11 per farm or P.165.86 per hectare. There were ten types of middle men engaged in purchasing of coconut, copra and fresh coconut meat namely agents, assemblers, wholesalers, retailers, manufacturers, contract financiers, processors, wholesaler-exporters, processor exporters and exporters. Problems like lack of storage facilities, poor roads, poor extension services and non-usage of insecticides were identified.

Suryaprakash et al. (1979) in a comparative study of price spread of agricultural commodities in Karnataka reported that the price spread of coconut varied from 5.23 to 21.73 per cent and for copra it was 5.86 per cent of traders sale price in Tiptur and Arsikere markets in Karnataka. The four marketing channels identified for coconut were 1) Producer - Commission agent - Trader, 2) Village merchant - Commission agent - Trader, 3 Producer - Village merchant - Trader, 4) Producer - trader. They concluded that profit margin as well as profit as a percentage of purchase price of intermediaries was maximum in village merchants.

World copra output was projected by F.A.O. (1980) at 6 million tonnes in 1985. With growing output, world trade in copra/coconut/oil/copracake had also risen and its traditional instability had become more accentuated. It was pointed out that trade could become more unstable unless special policy measures were taken. Coconut oil is vulnerable to substitution for most edible and inedible uses. Consumers are prepared to pay a premium for these purposes. Although prices remain high for a long period, substitutes will be sought. But if available supplies exceed a certain quantity, prices for coconut oil relative to other fats and oils become low.

Shepherd (1980) in his study of copra marketing in Papua, New Guinea observed that depending on world commodity prices, copra and coconut oil exports accounted for between 5 per cent and 15 per cent of New Guinea revenue annually. The copra marketing board having monopoly powers sells copra 2 months forward and is thus able to predict reasonably accurately its revenue in any one month and can set producer prices which fairly closely reflect world price trends. Quantity and quality control of copra brought about through introduction of minimum export standards, backed by inspection procedures and price differentials offer some encouragement to production of top grade copra. It was found desirable to encourage development of marketing system which maximises proportion of F O B prices going to producer and minimises middlemen and encouragement of individual entrepreneurs or business groups in disadvantaged areas.

Mathew (1980) studied interdistrict variations in prices of coconut and copra from 1958 onwards. While the interdistrict variations in prices of copra and coconut oil remained more or less steady over the years, variation in the prices of coconuts were found to increase with increase in prices.

Martin (1982), based on the market study in Solomon Islands and Pacific Island countries, has pointed out that major changes in the structure of market have occurred in recent years as they have switched from copra to coconut oil exports. Coconut oil prices were overall subjected to increasing downward pressure given constant demand. A critical marketing strategy will include ensuring reliability of supply and high quality of product, timely and accurate market intelligence, development of new markets, market and end-use research to expand consumption in traditional and non-traditional markets.

Venkitachalem (1983) observed that of the total production of dessicated coconut industry in Karnataka, 25 per cent directly went to biscut manufacturers and 65 per cent was sold through wholesale agents in upcountry markets and the balance disposed off through retailers. Taxation was a factor which hindered the growth of the industry.

Arshad (1983) evaluated efficiency of coconut marketing system by small holders in Malaysia and observed that it suffered various inefficiencies in the form of imperfection that exists in market structure, practices and performance. Farm level constraints and lack of

marketing facilities have resulted in low quality produce which merely induced the middlemen to indulge in unethical trading practices.

Raveendran (1984) studied the marketing of coconuts in Lakshadweep Islands and reported that 20 per cent was consumed locally and remaining processed into copra. Copra was usually transported to main land before onset of monsoon in odams and mechanized boats owned by Lakshadweep Marketing Federation. The entire copra produced (500-1800 tons) was marketed. Calicut and Mangalore were the important marketing centres for island copra which always fetched a premium price.

Venkitachalam (1984) worked out the marketing pattern of dessicated coconut industry in Tamil Nadu and found it more or less the same as in Karnataka. About 30 per cent of the production directly goes from the factory for consumptionby bulk consumers such as confectionery units. About 50 per cent is marketed through wholesalers/ retailers in the upcountry markets in Northern India and 10 per cent in the Southern states. It was observed that the heavy burden of taxation was one of the major financial constraints for all units.

Marketing of coconut oil

Natu (1959) observed that forward trading enables millers, dealers, exporters and industrial consumers like Vanaspathi to transfer their risks to others who are prepared to assume these risks in the hope of profit. He concluded that Forward Market Commission's efforts were mainly directed towards evolving a suitable organizational pattern which would ensure a balanced representation to the different interests in the market, strengthening financial markets and evolving procedures to deal with emergencies.

Savappa (1976) in his Presidential address of the Fifth Annual Meeting of Plantation Crops Industry pointed out that international market prices of coconut oil was much lower than an internal market price. He said that quality of products which is an important consideration in marketing was not a problem as far as India was concerned and that any increase in productivity we can achieve will not be helpful in increasing foreign exchange through exports. He indicated that the coconut oil price in Kerala was a case in point, having an apparent shortage of oil in the open market, after State stepped in and fixed the retail selling price of oil at Rs.12 per kg. Co-operative

societies can be thought of as a panacea to solve all marketing problems along with technological know-how and feasibility.

D.C.P. Surveys (1976) studied the expeller units in Kerala and reported that oil produced in the expeller units could not wholly be sold in retail or wholesale in the locality but should find outlets in the assembling centres through upcountry buyers. Price paid by solvent extraction units was 20-25 per cent less than price quoted for rotary cakes. In order to retain a fixed margin of profits, raw material price was adjusted by solvent and based on the anticipated price of the resultant products.

Thampan and Pankajakshan (1976) observed that big copra milling establishments find outlets in major oil markets of the state. Important oil markets in Kerala are Cochin and Calicut. In the assembling markets oil was transacted mainly for upcountry markets through brokers or commission agents. They estimated that nearly 35,000 tons of oil was marketed from Kerala annually. Important outside markets were Madras, Bombay and Calcutta from where oil is ultimately traded through a large number of wholesale and retail outlets to remote villages.

Lukman (1981) in a study of market situation in oil seeds and oils observed that in April, coconut oil prices reached a bottom low when it fell to 525 tonnes and suffering wider discounts from both palm oil and soya bean oil. On a macro level drop in coconut prices had inflicted a severe ~~blow~~ jolt and resulted in reduced foreign exchange earnings for Philippine's economy. On domestic scene, drop in prices had triggered a cut down on business and economic activity in perepheral industries. He suggested that another turn of the decade will leave coconut farmer increasingly dependent upon the multi-layered marketing system. Philippines coconut producers' Federation (COCOFED) presented an alternative and this programme was called vertical integration of coconut farmer - from production to marketing, to processing to banking and to other collateral endeavours.

Franklin (1982) suggested the Pacific countries to form a sub-regional body to examine their future in coconut oil and copra with a view to forming a 'bloc' which can be a watchguard on all marketing problems, e.g. shipping, freight rates, price, quality, copra destination and future market usage. He pointed out that market intelligence on work in other regions appeared sketchy

and available to only a few people and most copra marketing bodies in foreign countries do not have price stabilization schemes.

Paul (1982) pointed the impact of coconut oil import on the oil milling industry in Kerala. He pointed out that the unexpected import of coconut oil in sizeable quantities caused a steep decrease in price of coconut oil in local markets that has given a severe jolt to the entire economy of Kerala. With the setting up of solvent extraction unit at Irinjalakuda, there was a steady market for copra cake produced by oil mills which gave a fillip to oil milling industry in the State. In order to keep the industry in an even keel, it was necessary that vigorous and concrete steps be taken to restrain the Central Government from pursuing this baneful policy of import of coconut oil in large quantities.

Raveendran (1984) observed the behaviour of coconut oil price during 1983 and found that it had once again captured its unique position and became a premium priced oil. During 1983, coconut oil price always ruled at substantially higher levels than groundnut oil prices.

Materials and Methods

MATERIALS AND METHODS

This study on 'Marketing of Coconuts in Calicut district' is based mainly on primary data collected from a sample of coconut farmers.

Sampling procedure

For this study on marketing of coconuts in Calicut district the method of multi stage stratified random sampling was used. A list of Panchayats in the district was first prepared. From this list, six panchayats were randomly selected. From each of these six panchayats, one ward was randomly selected using a random number table. From each of these six wards so selected, lists of coconut growers were prepared and the growers were grouped into four size classes. Around 25 growers were again randomly selected from each ward, using random number table and this was in proportion to the area which was in proportion to the number of bearing trees in each size class.
The six panchayats so selected were:

Panchayats

Quilandy

Chengottukav

Feroke

Balussery

Unnikulam

Omassery

The size classes were fixed on the basis of the number of bearing trees.

Category	Number of bearing trees
1	10 to 25
2	Greater than 26 to 50
3	Greater than 51 to 100
4	Greater than 101 and above

Those with less than 10 trees were left out on the assumption that they will have little to sell.

Thus 150 farmers were selected in all the six panchayats taken together. The number of respondents taken for the study, category wise were as follows. Category I - 81 farmers, category II - 40, category III - 21 and category IV - 8. In the selected wards if present,

or in the adjacent wards of these panchayats, five village traders each and traditional millers present were contacted. All important markets in the district and a sample of intermediaries functioning in them were also covered. Similarly, all major oil mills in the district were also included.

Collection of data

Primary data were collected from the sample farmers grouped into four categories by personal interview method using a well structured schedule to elicit data from the respondents. Aspects covered included the particulars of land holding, cropping pattern, monthwise details of production and disposal of coconut/copra/ coconut oil and coconut oil cake, monthly prices obtained, type of buyers and place of sale, borrowings from buyers, reasons for the choice of the place of sale and buyer, price fixation etc. Specimen of the schedule is given in Appendix - I. The reference period for the study was the Malayalam year 1159-60 (1984-85). Data collection was done during September-November, 1985.

Similarly, using a separate well structured schedule, around thirty village traders were personally interviewed.

The information collected covered aspects such as total sales turnover of all commodities, monthwise details of trading of coconut, copra and coconut oil, performance of activities, the various charges/costs incurred etc. Specimen of the schedule is given in Appendix - II.

Information was gathered from the major oil millers in the district using a third, separate schedule prepared. It covered the particulars of the mills, cost of the machinery equipments, fuel and lubricants, casual and permanent labourers employed, monthly details of copra, oil cake, oil and marketing costs incurred per tonn of oil and oil cake. A specimen of the schedule is given in Appendix - III.

Tools of analysis

Tabular method was the main analytical tool used for data interpretation. To estimate the degree to which price changes in the villages were associated with changes in the prices in terminal market, correlation coefficients of monthly prices in these markets were worked out. Seasonality of coconut oil prices was estimated through the construction of a seasonal index. The index was constructed using the method of 12 month moving averages by the ratio-to-moving average method.

Concepts used in the study

Some of the important concepts used in this study are explained below.

Marketed surplus

Marketed surplus refers to that part of production which is actually marketed. Even in the case of a commercial crop like coconut the entire quantity produced does not find its way to the market. Part of production is retained for home consumption, payment of wages in kind and for use as seed. Thus, marketed surplus is

$$M_s = P-(S+W+C)$$

Where M_s refers to marketed surplus,

P refers to production,

S refers to seed,

W refers to wages in kind and

C refers to house hold consumption.

Market structure

According to George (1984) market structure could be defined as all the agencies involved either vertically or horizontally in the selling and buying

of the produce. It includes different marketing channels and organizations such as private trade, cooperatives and government as well as their market shares and bargaining power to affect prices. Thus, it is composed of the number and size of the different firms and organisations handling the produce, their form and market share.

Market integration

According to Lele (1973), the inter relation between price movements in markets such as the primary, secondary and terminal could be defined as market integration. The degree to which price formation in one market was dependent on prices in other markets was estimated by calculating correlation coefficients.

Marketing costs

Marketing costs include the expenses incurred by different marketing agencies at various stages of marketing such as costs of transport, handling, processing etc. Beside ~~efficient~~ paid out costs, implicit costs such as depreciation and cost of family labour are also included.

Marketing margins

Marketing margin is the difference between the price paid by the ultimate consumer and the price received

by the farmer. Marketing margin thus defined, is the gross margin. If the various marketing costs are deducted from this, the balance would constitute the net margin. In the present study marketing margin is treated as the difference between the farmers' realization for one hundred coconuts and the price received by the processors for equivalent quantity of coconut oil and its byproducts.

The three methods available for computing marketing margins are (a) by selecting specific lots of the product and tracing them through the marketing system and computing margins at each stage (b) by comparing prices at different levels of marketing, at the same point of time, also known as the concurrent method, and (c) by comparing gross rupee of purchases and sales of each type of marketing agency and the number of units handled.

In the present study a variant of the second method is used for computing marketing margins. Due to their inherent difficulties in obtaining data, the first and the last method could not be adopted here. As for the second method, it was also not possible to compare prices of different stages of marketing at the same point of time on account of the fact that it was not possible from the farmer level survey to obtain information on the exact dates

of sales of coconuts by farmers. Therefore, for the purpose of computing margins, the averages of prices received by farmers and the corresponding averages of prices of coconut products for the corresponding periods have been used.

Results and Discussion

RESULTS AND DISCUSSIONS

This chapter deals with the results of the study and the discussions thereon. As already mentioned in chapter four this study is based mainly on data generated through a sample survey of coconut farmers in selected panchayats of Calicut district. The panchayats selected were Quilandy, Chengottukav, Feroke, Balussery, Unnikulam and Omassery. This chapter is divided into eight sections. In the first place an account of certain general socio-economic features of the sample farmer households is attempted. Marketing practices is dealt with, in section two and marketed surplus in section three. Section four deals with marketing channels and market structure while section five deals with marketing margins. Section six is devoted to the analysis of market integration. Seasonal pattern of products, marketing and prices is dealt in section seven and section eight deals with the role of the Kerala State Coconut Development Corporation.

Literacy and levels of education

Literacy, and more particularly education, plays an important role in development of the rural people. It is therefore appropriate that the levels of literacy and education of sample farmer - households are examined. Table 6 gives the distribution of respondents (heads of households) according to their levels of literacy/education. Out of the 150 respondents, only 15 (10.00 per cent) were illiterate. Thus as against a literacy level of 70.12 per cent for the entire population of the district, the level of literacy of sample respondents was as high as 90 per cent. This higher level of literacy is an expected lines because our sample excludes the most poor like the landless. Again, as is to be expected, illiterates were to be found only in the lowest land holding categories. In fact, as much as 93.33 per cent of the illiterates were found in the lowest land holding group of category.1. Majority of the respondents who were literates (53.33 per cent) had studied only upto primary school stage. Primary school stage is the lowest level of education and as is to be expected again, the lowest land holding category had the largest percentage of respondents in respect of this level of education. Those with middle school level of

Table 6. Distribution of respondents according to the level of literacy.

Particulars	Category				Sample (aggregate)
	I	II	III	IV	
1	2	3	4	5	6
Illiterate	14 (17.23)	1 (2.50)	-	-	15 (10.00)
Primary school	44 (54.32)	15 (37.50)	10 (47.61)	3 (37.50)	72 (48.00)
Middle school	18 (22.22)	18 (45.00)	5 (23.81)	4 (50.00)	45 (30.00)
High school	5 (6.18)	6 (15.00)	5 (23.82)	1 (12.50)	17 (11.34)
College	-	-	1 (4.76)	-	1 (0.66)
Total (percentage)	100.00	100.00	100.00	100.00	100.00

Note: Category I Those with 10 to 25 bearing coconut trees
" II " 26 to 50 " "
" III " 51 to 100 " "
" IV " 101 and above "

Figures in parenthesis indicate percentage to total.

education constituted 33.33 per cent of the literates and 30.00 per cent of the sample. Only a small proportion had high school and college education. From the foregoing, it may be concluded that the level of education of the respondents was fairly adequate to understand written down information relevant to agricultural marketing at the farmer level.

Occupation

In Table 7, the respondents have been grouped in terms of occupations. It can be seen that only 32 per cent of the farmers were exclusively dependent on agriculture. All the others had some other occupation along with agriculture. Considering the fact that the holding size even in the largest size of holding was not large enough to generate a comfortable level of income, it is not surprising that these people combined one or more other occupations with agriculture. Category wise, no clearcut trend is discernible in respect of choice of occupation. However, 50 per cent of those in the largest category were engaged exclusively in agriculture while in the lowest category it was only 30.86 per cent. Among the other occupations, small trade was the most preferred occupation.

Table 7. Distribution of respondents according to occupation

Occupation	Category				Sample
	I	II	III	IV	
1	2	3	4	5	6
Agriculture	25 (30.87)	12 (30.00)	7 (33.33)	4 (50.00)	48 (32.00)
Agriculture + Govt./Private service	8 (9.88)	3 (7.5)	1 (4.76)	-	12 (8.00)
Agriculture + Business/small Trade	20 (24.69)	8 (20.00)	4 (19.05)	2 (25.00)	34 (22.66)
Agriculture + Industry	-	-	1 (4.76)	1 (12.50)	2 (1.34)
Agriculture + Profession	-	1 (2.50)	1 (4.76)	-	2 (1.33)
Agricultural Pension	2 (2.47)	4 (10.00)	1 (4.76)	-	7 (4.67)
Agricultural and Miscellaneous Activities	26 (32.09)	12 (30.00)	6 (28.58)	1 (12.5)	45 (30.00)
Total (percentage)	100.00	100.00	100.00	100.00	100.00

Figures in parenthesis indicate percentage

This is quite noteworthy because it is one of the least capital intensive avocations. Moreover, in the prevailing inflationary climate, it is also the least risky activity. Another noteworthy feature is that the percentage of those who had government/private jobs declined with increase in size of holding and in fact, this group was totally absent in category 4 which is the largest landholding category. It may also be of interest in this connection to note that whereas the average percentage of those who had Government/Private employment was only 8, in a study of coconut growers in Trivandrum district, the percentage of those with government employment was found to be as high as 22.92. (Nair, L.N. 1984).

Land holdings

Details of land holdings of sample farms are given in Table 8. The average size of holding was only 0.23 hectare of which 0.20 hectare (86.96 per cent) was under crops. Size of holding ranged from 0.09 hectare in category 1 to 0.90 hectare in category 4. Among the different panchayats, size of holding ranged from 0.12 hectare in Feroke to 0.29 hectare in Unnikulam. While Feroke is coastal and on urban periphery, Unnikulam is

Table 8. Holding size, net cropped area and gross (in hectares) cultivated area.

	Total area in the category	Per farm size of holding	Net cropped area in the category	Per farm per category/Panchayat	Gross cropped area in the category	Per farm per category/Panchayat	Cropping interval
1	2	3	4	5	6	7	8
Category - 1	7.27	0.09	6.15	0.08	11.08	0.14	225
Category - 2	9.79	0.24	9.00	0.23	13.77	0.34	148
Category - 3	9.79	0.47	8.93	0.43	14.30	0.68	158
Category - 4	7.16	0.90	5.59	0.70	6.73	0.84	120
Total	34.01		29.67		45.88		155
Quilandy	4.90		4.35	0.17	5.70	0.23	135
Chengottukavu	4.67		4.11	0.16	6.60	0.26	163
Feroke	3.89		3.09	0.12	5.63	0.23	192
Balussery	5.91		5.45	0.22	8.82	0.35	159
Unnikulam	7.94		7.14	0.29	10.97	0.44	152
Omassery	6.70		5.53	0.22	8.16	0.33	150
Total/average	34.01	0.23	29.67	0.20	45.88	0.31	155

Note: Gross cropped area was estimated by converting the total number of trees/plants in respect of each crop into cropped area on the basis of standard planting density separately and then arriving at the total gross area.

located in the interior and this explains the difference. The total gross cropped area was 154.63 per cent of the net cropped area cropping intensity tended to decline with increase in size of holding.

Cropping pattern

Cropping pattern in the sample holdings can be seen from Table 9, where total cropped area under each category is shown distributed among the different crops. As much as 70.53 per cent of the gross cropped area in the aggregate was devoted to the cultivation of coconuts. Rice which is the staple food was cultivated in 20.68 per cent of the area and was second in terms of importance. In this context it may be mentioned that land used for paddy cultivation is waterlogged for several months during the year and hence such land is specific to rice crop. The percentage of area under coconut was 75.18 in the smallest category as against 66.57 in the largest category. The cropping pattern reveals the highly commercial nature of agriculture pursued by the respondents which implies that markets and marketing in general and of coconuts in particular are bound to play a major role in their economic well being.

Table 9. Cropping pattern of the sample holdings (in hectares)

Gross cropped area for crops	Cate-gory-1	Per cent	Cate-gory-2	Per-cent	Cate-gory-3	Per cent	Cate-gory-4	Per cent	Total	%age to the total gross cropped area	Average per farm holding
1	2	3	4	5	6	7	8	9	10	11	12
Coconut	8.33	75.18	9.53	69.16	10.02	70.12	4.48	66.57	32.36	70.53	0.216
Cocoa	0.05	0.45	0.01	0.07	-		-		0.06	0.13	0.0004
Banana	0.10	0.90	0.09	0.65	0.18	1.26			0.37	0.81	0.002
Arecanut	1.02	9.21	0.97	7.04	1.07	7.49	0.54	8.02	3.60	7.85	0.024
Paddy	1.58	14.26	3.18	23.08	3.02	21.13	1.71	25.41	9.49	20.68	0.063
Total gross cropped area	11.08		13.78		14.29		6.73		45.88	100.00	0.306

Note: Area estimated on the basis of number of trees/plants except in the case of paddy.

Productivity of coconuts

Coconut being the most important crop in the study area, it may be worthwhile to examine its productivity. Data on categorywise and panchayatwise production and productivity of coconuts are given in Table 10 and 11. Average production of nuts per tree was 30 and average production per bearing tree was 36. Production per bearing tree ranged from 33 in category 3 to 37 in category 4. Production per bearing tree did not show any consistent relationship with size of category. Production per bearing tree was highest in Balussery and lowest in Omassery. Low productivity in Omassery is attributable to the fact that this panchayat is a hilly area and is situated away from coastal area.

Table 10. Average production per plant and per yielding plant (categorywise) during 1984-85.

Category	Total production (Number of nuts)	Total number of trees	Total number of yielding trees	Percentage of yielding trees	Average production per tree (number of nuts)	Average production per yielding tree No. of nuts)
1	2	3	4	5	6	7
Category - 1	40815	1472	1172	79.62	28	35
Category - 2	47927	1701	1450	85.24	28	33
Category - 3	56958	1790	1478	82.57	32	39
Category - 4	39552	1165	1055	90.56	34	37
Total	185252	6128	5155	84.12	30	36

Table 11. Average production per tree and per yielding tree - Pancyayat-wise during 1984-85

Panchayats	Total production (Number of nuts)	Total number of trees	Total number of yielding trees	Average production per tree (number of nuts)	Average production per yielding tree (number of nuts)
1	2	3	4	5	6
Quilandy	34917	1000	920	35	38
Chengottukav	25701	835	771	31	33
Feroke	25365	753	671	34	38
Balussery	33740	1082	865	31	39
Unnikulam	36045	1306	979	28	37
Omassery	29484	1152	949	26	31
Total	185252	6128	5155		

Marketing practices in general

Coconuts are harvested either tender or matured and marketed by farmers in different forms such as tender nuts, matured nuts, dry nuts and as copra (edible or milling). Coconut at tender stage is used for its water which is a refreshing natural drink. Mature nuts are used mainly for making copra and they are also used for edible and religious purposes. Copra is used mainly for milling to produce coconut oil, though some quantity is used for edible purposes.

In Kerala the practice of harvesting and selling tender nuts hardly exists. Harvesting is almost entirely, of mature nuts. About 65 per cent of the harvested nuts are used to produce milling copra, of which about 60 per cent is crushed within the state and the balance exported to various other parts of the country (Pankajakshan, 1984). The number of harvests in a year range from 4 to 12, though the most common number is 8. After harvesting, the nuts are collected and heaped in a convenient place in the field or in the court yard of the farmer's house in the case of homesteads. The nuts are generally sold

without husks at the farm to copra makers who are there in varying number in the coconut growing villages. The copra makers get the nuts dehusked and transport the nuts to their premises, leaving the husks behind which the farmer sells to some local retters or other buyers. In certain areas, unhusked nuts are sold to copra makers who get the nuts dehusked in their own premises. The usual mode of transportation is hand cart. In some areas the farmers get the nuts dehusked and take them to the weekly village shantis or sell them to the village merchants who are engaged in merchandising in the village. The copra makers convert the nuts to copra and sell them to either local oil millers or other oil millers. A general idea about marketing of coconuts can be obtained from the chart on the next page.

Prices paid to farmers for coconuts are generally fixed on the basis of prevailing prices of coconut oil and for copra. The latter set of prices in the major markets such as Calicut, Cochin and Alleppey are published in daily newspapers. Since literacy and the level of education in the state is fairly high most farmers are in a position to read newspapers and since there are many

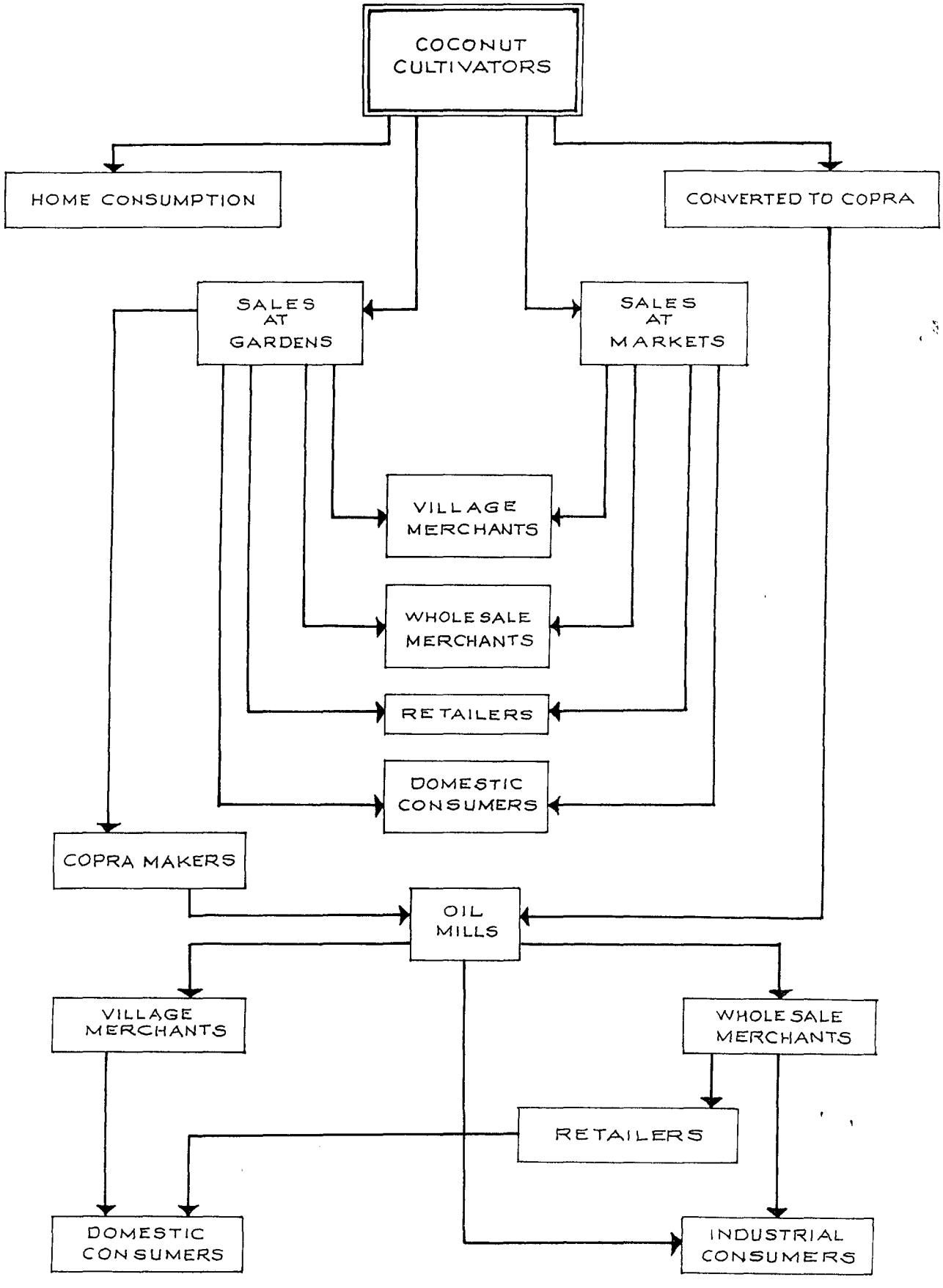

FIG. 1. MARKETING CHANNELS IN COCONUT AND ITS PRODUCTS.

SOURCE · MATHEW, J. 1980 · pp. 12.

newspapers with fairly wide circulation published within the state they have very good accessibility to this medium. Apart from newspapers, information on prices are also broadcast daily over the All India Radio. Though the wholesale market prices of coconut oil/copra, form the basis for fixation of price of coconuts, the actual prices fixed depend upon a variety of factors such as, size of nuts, their maturity, season, the general trend in prices and so on. The copra makers sell the copra on the basis of wholesale market prices, the actual prices being influenced also by the moisture content of copra. The standard moisture content permitted is 6 per cent only. Moisture content in copra is determined usually on subjective judgement and not based on any scientific evaluation.

Farmers' Marketing Practices in the study area

Choice of place of sale

In the study area farmers harvested only mature nuts, and these nuts were sold by them as such. All the sample farmers reported that they generally sold nuts with husks at the farms, though 10 per cent of them also occasionally made copra. In the case of farm sales, the seller has absolutely no botheration regarding handling, transportation etc. and therefore, there need not be any surprise that all the farmers adopted farm sales. It may also be borne in mind that the surpluses available for sale are not large, which if one opts to move out of the farm for sale, would involve waste of time. More importantly, opportunity cost of time of most of the respondents is not zero as is normally assumed. We have already seen that a large proportion of coconut farmers have other activities to look after. Bulkiness of the produce, poor farm to market transportation facilities etc. may also have weighed with them.

During the field investigation the farmer respondents were asked to indicate the reasons for the method of sale adopted by them. Their responses have been tabulated and presented in Table 12.

Table 12. Reasons for selling coconuts at the farm
(Number of respondents)

Categories	Convenience	Better price	Advance received	Miscella-neous	Total
1	2	3	4	5	6
1	39 (48.15)	26 (32.10)	11 (13.58)	5 (6.17)	81 (100.00)
2	20 (50.00)	13 (32.50)	5 (12.50)	2 (5.00)	40 (100.00)
3	8 (38.10)	8 (38.10)	4 (19.05)	1 (4.75)	21 (100.00)
4	4 (50.00)	3 (37.50)	1 (12.50)	-	8 (100.00)
Total	71 (47.33)	50 (33.33)	21 (14.00)	8 (5.34)	150 (100.00)

Note: Figures in paranthesis are percentages

The most important reason stated was 'convenience' which was given by 47.33 per cent of the respondents. Another 33.33 per cent farmers reported 'better price' and 14 per cent 'advance received' as reasons for village sales. Within each category, also 'convenience' was the most important reason. It may be mentioned that although 50 per cent of the farmers reported taking advances from copra makers only 14 per cent reported that as the most important reason for village sales.

Choice of buyers

Though all the farmers sold coconuts to one particular type of buyer, viz. copra maker, there was possibility of choice of buyer because there was more than one such buyer in and around the panchayat wards concerned. Therefore, the farmers were asked to indicate reasons for choice of particular buyer. The answers have been tabulated and presented in Table 13. Here again, the most important single reason was convenience. Distance from farmers' premises to copra makers' premises varied from one to three km which meant that while some buyers are easily accessible, some others are not. Approximately one-fourth of the sellers preferred particular buyers on

Table 13. Reasons for choice of buyers.

Convenience	Better price offered	Reliability	Advance received	Buying provisions on credit	Miscellaneous	Total
1	2	3	4	5	6	7
34.66	24.66	22.66	14.00	0.66	3.36	100.00

account of relatively better price offered by them and 14.00 per cent respondents were bound by advances received. An insignificant proportion of 0.66 per cent sellers were bound by the facility of merchandizing on credit offered by the buyers. A fairly large proportion of 22.66 per cent reported reliability of the buyers as the reason for selling to the particular buyer. By reliability what they meant mainly appear to be not defaulting on payments in respect of credit sales and not retracing from the offered price at a later date on some pretext or the other.

Price fixation

All the respondents were faimiliar with the ruling market prices of coconut, copra or oil. As much as

52.67 per cent of the farmer respondents obtained price information from newspapers and the rest from other sources. Ruling wholesale market rates for copra and oil were stated to be the main basis for price determination at the farmers' level. Apart from these prices, 21.33 per cent stated that size and quality of nuts were also taken into account. Twelve per cent of the respondents stated that they resorted to bargaining.

Marketed surplus

Though coconut is a commercial crop the entire production of nuts does not find its way to the market. Part or whole of harvesting and collection charges are given in kind. Some nuts are also set aside for the purpose of raising seedlings. But the most important claimant of the non-marketed portion is the farmers home itself. Data on production and disposal of coconuts by the sample holdings are given in Table 14. Only 61.46 per cent of the total production was actually marketed. As much as 31.87 per cent was used for consumption in the producer households. Proportion of nuts used in the home was as much as 64.27 in the smallest size of holding

Table 14. Marketed surplus of coconuts per category of the sample farmers

Particulars	Category-1		Category-2		Category-3		Category-4		Sample (aggregate)	
	No.of nuts	Percentage	No.of nuts	Percentage	No.of nuts	Percentage	No.of nuts	Percentage	No.of nuts	Percentage
1	2	3	4	5	6	7	8	9	10	11
Total production	40815	100.00	47927	100.00	56958	100.00	39552	100.00	185252	100.00
Quantity retained for										
a) Home consumption	26232	64.27	16470	34.36	11967	21.01	4368	11.05	59037	31.87
b) Wages	2150	5.27	2759	5.76	2074	3.64	1207	3.05	8190	4.42
c) Nursery	-	-	619	1.29	1880	3.30	1670	4.22	4169	2.25
Total (a+b+c)	28382	69.54	19848	41.41	15921	27.95	7245	18.32	71396	38.54
Marketed surplus	12433	30.46	28079	58.59	41037	72.05	32307	81.68	113856	61.46

and it declined steadily to 11.05 in the largest size. Coconut is an important ingredient in most food preparations in Kerala. In spite of this, the proportion devoted to household use appear to be rather high.

Nuts given as wages in kind for harvesting and collecting varied a little among the different panchayats. In some panchayats like Unnikulam, no nuts were given at all as wages. They preferred to give it as cash, which was normally fixed per tree climbed by the climber. In the rest of the panchayats wages were given both in cash and kind which were ~~somewhat~~ fixed in each panchayat, like 60 paise per tree climbed etc. Number of nuts paid as wages were in proportion to the total number of nuts harvested. It was observed in the sample holdings that the number of nuts and cash given as wages to the climbers were fixed according to certain norms that have been followed for some time. In some of the sample holdings, especially in categories 3 and 4, food was also given in addition to nuts and cash.

Nuts given as wages in kind for collection were given mainly only in categories 3 and 4. In the other 2 categories this practice was observed only in a few

sample holdings. Usually the labourers employed for harvesting, themselves collected the nuts. Number of nuts given as wages were proportionate to the total number of nuts collected. No fixed norms regarding the wages were observed. As is to be expected from the pattern of household consumption, proportion of marketed surplus varied directly with size. While it was only 30.46 per cent in the smallest size group, it was 81.68% in the largest size. It may be mentioned in this context that in the present study we have excluded those households who have less than 10 coconut trees on the assumption that they may not have much marketable surplus. Data presented in the above table seem to support that assumption. If this class of farmers was also included in the study, the proportion of marketed surplus would be still lower, though slightly. However, against this, there is an offsetting element. This element is wages in kind. The wage earners do sell part of the nuts received as wages. If this is also taken into account, which will raise the quantity marketed, the overall proportion marketed, may not be very different from the 61.46 per cent found in the Table 14. One of the reasons for the relatively low (considering the fact that it is a commercial crop) marketed surplus is that coconut is an item of consumption

in the households. Another reason is that productivity is very low. Perhaps, the most important reason is that it is a predominantly small or even tiny holders' crop. As already indicated in the previous section, even in the largest category, the average size of holding was less than one hectare. What is more, almost four-fifths of total production was in holding sizes of less than half a hectare. Market situation for coconut oil, which is the main product from coconuts, in the country for the past several years has been that demand generally exceeded supply. Since the prospects of bringing new area under the crop as well as the prospects of increasing holding size are bleak, the only solution for raising the proportion of marketed surplus is to raise productivity.

Marketing channels and Market structure

Marketing channel is the route taken by goods as they move from the producer to the ultimate consumer. According to George (1984), market structure could be defined as all the agencies involved in selling and buying of produce and it includes different marketing channels and organizations as well as their market shares and bargaining power to affect prices. An important

element in market structure is nature of the product i.e. whether it is homogenous or heterogenous. Structure can be competitive, monopolistic or oligopolistic. Market structure is supposed to influence market conduct which in turn affects performance.

As mentioned elsewhere in this study, the main method of marketing of coconut by farmers was selling mature nuts to copra makers who in turn converted the nuts to copra and sold it as such. A few farmers themselves made copra and sold it. Since coconut oil is the main product from coconuts and since coconuts sold by farmers were almost entirely for making milling copra and oil, in the present study, the movement of coconut from farmers to the mills and then to the consumers will be considered to identify marketing channels.

The channels identified are the following:

1. Farmer - copra maker - oil miller - retailer - consumer.
2. Farmer - copra maker - oil miller - commission agent - wholesaler - retailer.
3. Farmer - copra maker - oil miller - commission agent - industrial user.

4. Farmer - oil miller - wholesaler - consumer.

Channel number four was relatively unimportant. Channel number 1 substantially represents situations where oil is sold within the state. Channels three and four represent situations where oil is sold outside the state. It is understood from market circles that a substantial proportion of oil is sold outside the state. Channels 2, 3 and 4 are involved mainly in respect of sales of oil and copra to buyers in other states. On enquiry in Calicut market it was revealed that the major centre outside the state from where demand for coconut oil emanated was Bombay.

As already mentioned, the first buyers of coconuts from farmers were copra makers who ~~exist~~ operate in coconut growing villages. They made copra from nuts mostly by sundrying and to some extent by smoke drying, for which coconut shells are used as fuel. Generally, they were small traders who resorted to copra making for want of alternative avenues of employment.

Though there were local mills in the panchayats covered in our study, copra makers sold copra to mills at Calicut also.

Among the four channels, identified channels 2 and 3 are reported to be relatively more important in Calicut district. However, it was not possible to obtain any quantitative information on this aspect.

In and around the selected panchayat wards there were some copra makers. On the basis of information obtained from the farmers - respondents, the number of copra makers in or around different selected wards is as given below.

1.	Quilandy	6
2.	Chengottukav	5
3.	Feroke	6
4.	Balussery	7
5.	Unnikulam	6
6.	Omassery	5

These numbers, though not large, seem to be fairly adequate in relation to the quantity of nuts which are likely to be sold from each ward. In any case, the numbers are not too small to leave the producers without enough option with regard to the choice of buyers. As already mentioned above, as much as 50 per cent of the sample farmers had borrowed money from copra traders which

seem to suggest that copra makers compete with each other in buying the available nuts. Moreover, the fact that farmers mentioned different reasons such as convenience, better price etc. for the choice of a particular buyer, it is evident that scope for choice was not restricted. Another point worth noting is that even the relatively larger farmers did not exercise the options of selling copra instead of nuts or selling elsewhere instead of at the farms. Finally, it must also be borne in mind that the daily prices of coconut and its products in wholesale markets are published in newspapers and broadcast through radio. All these suggest that market conduct of buyers of nuts is unlikely to be unfavourable to farmers. As against these factors which ought to have a favourable impact on competition, one must also take into account certain factors which may have an unfavourable impact. The fact that many farmers were 'tied' to copra makers on account of borrowings may have impaired their bargaining ability. Secondly, though quite a large proportion of farmers mentioned convenience as the reason for farm sales and choice of buyer, the fact that the cost involved in adopting other methods is relatively high may prompt the copra makers to appropriate a relatively large share of the 'convenience yield'. Yet another

unfavourable factor is the absence of homogenity in the product. Raw nuts vary considerably in size and weight of copra ~~contained~~ content.

We have already seen that the farmers participated in price fixation with knowledge regarding ruling wholesale prices. The farmers were requested to indicate their subjective reactions to prices received. As much as 92.00 per cent of them felt that the prices which they received were commensurate with the ruling wholesale prices of unhusked nuts. All the farmers in category 4, 95.23 per cent in category 3, 87.50 per cent in category 2 and 92.59 per cent in category one, were of the view that the prices they received were commensurate with corresponding wholesale prices of unhusked nuts.

As stated above, copra makers sell copra mainly to oil mills. Many of the oil mills are small in size. According to Economic Review (1984), of Government of Kerala there were 39 working 'factories' in oil industry in Calicut district. Sale of copra take place at the buyers premises. Prices are fixed on the basis of the previous day's market quotations for copra in Calicut market, taking into account the moisture content in copra. Since

the number of buyers for copra is not very small, copra traders have adequate choice of buyers. This, coupled with the fact that the commodity is fairly homogenous rules out the possibility of the copra makers being exploited by copra buyers and the former in turn is compelled to pass on the burden to farmers. From the foregoing discussions, it appears that the structural characteristics of the market, particularly at the farmers' level, are not likely to adversely affect market conduct to the detriment of the farmer.

Marketing margins

One of the methods of assessing marketing efficiency is to examine the marketing margins. Marketing margins consist of the difference between the price received by the producer and the price paid by the final consumer. Coconut is sold by farmers generally in the form of mature nuts and the predominant form in which it reaches the consumer is coconut oil. In this study marketing margins are worked out from the stage of farmer sales of nuts to the stage of retail sale of oil in Calicut. Since Bombay market is a major market for coconut oil outside the state, margins have been worked out in relation to wholesale

prices of oil in Bombay market apart from Calicut market. After coconut leaves the farm gate, byproducts such as coconut husk, coconut shell, coconut oil cake are made from it apart from the main products of copra and coconut oil. Therefore in working out marketing margins due allowance has to be made for realization from the sale of by-products. Marketing margin in this study therefore refers to the difference between price received by the farmer for one hundred coconuts and the realization by the intermediaries and oil millers for corresponding equivalent quantities of main products and by-products. In estimating this margin, the copra content of coconuts and oil and oil cake contents of copra are crucial variables. Copra content of nuts vary temporally and spatially apart from variations due to size of nuts. On the basis of discussions with knowledgeable persons including copra makers and farmers we have estimated average copra recovery rates for the different panchayats. Oil and cake recovery rate of copra has also been similarly obtained from oil millers. Byproducts such as husk and shell have been evaluated on the basis of average rates prevalent in the concerned villages. Prices of copra, oil and oil cake have been taken from wholesale price quotations. As stated in the chapter on methodology, for working out marketing margins,

a variant of the concurrent method has been used. It was not possible to attempt estimating margins through any other method for want of relevant data. In the concurrent method, margins are worked out on the basis of prices at different stages of marketing at the same point of time. In order to know the margins according to this method, the dates of sale by farmers have to be correctly known and corresponding prices at other stages have to be taken. Since sample farmers have sold nuts on different dates, averaging them and taking corresponding average prices of other products would mean virtually taking average prices of different dates at each stage and not actual prices on specified dates. Moreover, some of the sample farmers could not recall the exact dates of sale perhaps due to the fact that as far as they were concerned the dates were of no consequence. It was therefore thought desirable to take the prices received by farmers during a particular month and corresponding average monthly prices at other stages. Wholesale and retail prices of coconut oil at Calicut obtained from the Directorate of Economics and Statistics were also used for the purpose of working out margins.

Margins have been worked out on the basis of prices received by farmers during the Malayalam month of Meenam

which corresponds to roughly 15th March to 15th April. The use of Malayalam month in respect of prices of farmer sales was with a view to facilitate recall on their part and the month of Meenam was the last month for which data have been collected from farmers.

As stated above, one of the crucial variables in a study of marketing margins for coconuts is copra content in coconuts. Copra content per nut varies with the size of nuts, agroclimatic conditions, management of the coconut gardens etc. Table 15 shows copra recovery rates used in the present study which as stated above was arrived at on the basis of discussions with knowledgeable persons. It is also in consonance with relevant data available with CPCRI. (Raveendran, 1984).

Oil recovery from copra varies according to the type of equipment used for oil extraction. Generally expellers and rotaries are being used for this purpose. Rate of recovery is more in expellers which on an average is reported to be 65 per cent and in rotaries it is reported to be 63 per cent of weight of copra. On the basis of total crushing capacity, a weighed average oil recovery rate of 64.40 per cent has been used in this study. Approximately one per cent of the weight of copra

Table 15. Copra, oil and oil cake recovery rates during the month of Meenam

Panchayats	Copra recovery from 100 nuts (kg)	Oil recovery from 100 nuts (kg)	Oil cake recovery from 100 nuts (kg)
Quilandy	17.8	11.46	6.16
Chengottukav	17.8	11.46	6.16
Feroke	17.8	11.46	6.16
Balussery	18.5	11.91	6.40
Unnikulam	17.5	11.27	6.06
Omassery	17.5	11.27	6.06

Note: From 100 nuts the quantity of oil obtained in Quilandy is 11.46 kgs (0.644x17.8) and the quantity of oil cake obtained is 6.16 kgs (0.346 x 17.8) and so on.

is reported to go as waste. Hence the recovery of oil cake assumed is 34.6 per cent. Since copra rate in different panchayats is not uniform, recovery rates of oil and oil cake are also not uniform. Oil recovery rates and oil cake recovery rates in respect of coconuts in different panchayats are also given in Table 15.

It could be seen from the Table that the copra recovery is the highest in Balussery panchayat. Here the soil type which is the red loam and the regular irrigation practices followed contribute to the good quality of the nuts. Hence the quality of the nuts is comparatively better in this panchayat. In Quilandy, Chengottukav and Feroke, all being coastal areas, the copra content is fairly good and does not show any variation. Unnikulam and Omassery being interior areas, the irrigation requirements are not adequately met and so the copra content is a little low.

For the calculation of marketing margins, the marketing costs incurred by the intermediaries, namely the copra-makers and the oil millers were separately worked out. The costs incurred by the copra-makers of the different panchayats are as shown in Table 16.

Table 16. Marketing costs incurred for the various marketing functions of the copra maker in rupees per hundred nuts

Item	Quilandy		Chengottukav		Feroke		Balussery		Unnikulam		Omassery	
	Rupees per 100 nuts	Per cent to the total	Rupees per 100 nuts	Per cent to the total	Rupees per 100 nuts	Per cent to the total	Rupees per 100 nuts	Per cent to the total	Rupees per 100 nuts	Per cent to the total	Rupees per 100 nuts	Per cent to the total
1	2	3	4	5	6	7	8	9	10	11	12	13
1. Transportation costs for coconuts from the farmers premises	4.00	22.52	4.00	22.60	4.10	24.40	4.35	21.82	4.75	22.67	5.50	23.50
2. Dehusking charges	2.50	14.08	2.50	14.12	2.55	15.18	2.75	13.79	2.70	12.89	3.00	12.83
3. Breaking and drying (copra making)	2.75	15.48	2.75	15.54	2.65	15.77	3.00	15.05	3.05	14.57	3.30	14.11
4. Transportation of copra to Calicut market	1.70	9.57	1.55	8.76	1.30	7.74	2.45	12.28	3.00	14.32	4.00	17.09
5. Loading and unloading charges of copra	0.50	2.82	0.55	3.11	0.60	3.57	0.80	4.01	0.85	4.05	0.95	4.06
6. Depreciation on building	1.10	6.20	1.00	5.65	0.80	4.71	1.15	5.77	1.14	5.44	1.25	5.34
7. Cost of fuel (shell)	4.00	22.52	4.00	22.60	4.00	23.81	4.00	20.06	4.00	19.09	4.00	17.09
8. Panchayat Tax	0.16	0.90	0.16	0.90	0.16	0.95	0.16	0.80	0.16	0.76	0.16	0.68
9. Other expenses (Knife, bag etc.)	1.05	5.91	1.19	6.72	0.65	3.87	1.28	6.42	1.30	6.21	1.24	5.30
Total	17.75	100.00	17.70	100.00	16.80	100.00	19.94	100.00	20.95	100.00	23.40	100.00

Transportation costs from the farmers premises constituted the major item in the marketing costs of copra makers. It was found to be highest in Feroke (24.40 per cent) and the lowest in Balussery (21.82 per cent). The cost of fuel (shell) also contributed a large share in the total marketing costs. The transportation charges of copra to Calicut varied considerably among the different panchayats, the highest being in Omassery that accounted for 17.09 per cent of the total marketing costs and the lowest in Feroke being 7.74 per cent of the total costs. This was because of the greater distance towards the market, being a remote area. Feroke being nearer to Calicut, the costs accounted for the minimum. Miscellaneous expenses were observed to be the highest in Chengottukav (6.72 per cent) and lowest in Feroke (3.87 per cent). Not much variation was observed among the panchayats regarding the other items. The total marketing costs were observed to be highest in Omassery which was Rs.23.40 for 100 nuts and the lowest at Feroke which was Rs.16.80. This was however mainly due to the variations in the distance of the panchayats to the Calicut market.

All the copra makers in the panchayats sold the copra to oil mills in Calicut. The oil mills employed both expellers and rotaries for oil extraction from copra. The marketing costs incurred for these were separately worked out and the weighted average of these were calculated to estimate the marketing costs of the oil mills. The costs thus incurred by the millers are shown in Table 17. Costs per kilogram of copra crushed were worked out. This was reworked in which 100 nuts were taken as the basis, for the different panchayats, since the copra recovery and hence the oil recovery varied among them.

Crushing costs came to Rs.15 per quintal of copra crushed. The costs were categorized into two, namely fixed and variable costs as shown in the Table 17. Among the fixed costs, depreciation on building constituted the major share and in the variable costs, that for purchase tax on copra accounted for the highest share in the total costs. Power and lubricants constituted the next highest share in the variable costs. Taxes like purchase tax and additional sales tax accounted for a large per cent in the total costs as shown in the Table 17. Wages also accounted for a sizeable share in the total costs.

Table 17. Costs incurred by the oil miller in rupees for copra equivalent of 100 nuts

Item	Quilandy		Balussery		Unnikulam, Omassery	
	Rs.100 nuts (copra equivalent)	Per cent to the total	Rs./100 nuts (copra equivalent)	Per cent to the total	Rs./100 nuts (copra equivalent)	Per cent to the total
1	2	3	4	5	6	7
Fixed costs						
Depreciation on building	0.36	3.84	0.36	3.74	0.36	3.89
Depreciation on machinery	0.18	1.92	0.18	1.87	0.18	1.95
Variable costs						
Power and lubricants	0.91	9.71	0.91	9.45	0.91	9.85
Maintenance costs	0.40	4.27	0.40	4.15	0.40	4.32
Wages	0.73	7.80	0.73	7.58	0.73	7.90
Gum	0.05	0.53	0.05	0.52	0.05	0.54
Miscellaneous	0.073	0.78	0.073	0.76	0.073	0.79
Taxes						
Purchase tax on copra	5.34	57.05	5.55	57.69	5.24	56.70
Additional Sales Tax	0.89	9.51	0.93	9.67	0.88	9.52
Surcharge	0.43	4.59	0.44	4.57	0.42	4.54
Total	9.36	100.00	9.62	100.00	9.24	100.00

Marketing costs of retailers averaged Rs.12 per quintal of oil and in terms of oil content of one hundred coconuts, it came to Rs.1.38.

The total realization from the products namely oil, cake, shell and husk were worked out both at wholesale and retail prices (of oil only). The farmers price as a per cent of the total realization at both these prices were found out. Similarly the copra makers net margins as well as the oil millers net margins (Table 18) were worked out as a per cent of total realization at both these prices as shown in Table 19.

It could be seen from the table that the farmer's share in the total realization at retail price of oil was 72.43 per cent at Quilandy which was the highest and 70.37 per cent at Balussery which was the lowest as shown in Table 19. Khans study (1972) conducted at Tiptur taluk of Tumkur district in Mysore state as discussed earlier also revealed that the producers share in the consumer's rupee was 71.66 per cent. There was not much variation among the other panchayats. The copra content, being the highest in Balussery, the realization from copra, husk and shell were also high, which enabled the copra makers to get the highest net returns.

Table 18. Gross and net margins of the intermediaries

Panchayat	Selling price of the farmer (Meenam) (in Rs./ 100 nuts)	Selling price of copra maker/ buying price of oil miller	Price paid for 100 nuts plus marketing costs of copra maker	Copra makers realization from copra husk and shell	Copra makers net margin	Selling price of oil miller/ buying price of whole-saler	Price paid for copra plus marketing costs of oil miller	Oil millers realization from oil and oil cake	Oil millers net margin	Costs incurred by the retailer	Selling price of Retailer	Retailers' net margin
1	2	3	4	5	6	7	8	9	10	11	12	13
		(Rs.15.08/ kg of copra)				(Rs.23.05/ kg of oil)						
Quilandy	230.80	268.42	248.56	286.42	37.86	264.15	277.78	281.40	3.62	1.38	19.26	17.88
Chengottukav	230.56	268.42	248.26	286.42	38.16	264.15	277.78	281.40	3.62	1. 38	19.26	17.88
Feroke	229.86	268.42	246.66	286.42	39.76	264.15	277.78	281.40	3.62	1.38	19.26	17.88
Balussery	232.55	278.98	252.49	296.98	44.49	274.53	288.60	292.45	3.85	1.43	20.00	18.57
Unnikulam	226.80	263.90	247.55	281.90	34.15	259.77	273.14	276.74	3.60	1.35	18.94	17.59
Omassery	224.67	263.90	248.07	281.90	33.83	259.77	273.14	276.74	3.60	1.35	18.94	17.59

Table 19. Percentage share of the farmer, copra maker and oil miller in the total realization from oil, cake, shell and husk at wholesale and retail prices in Calicut.

Panchayat	Price received by farmers in Meenam	Total realization by intermediaries from oil, cake, shell and husk at		Farmers price as a per cent of total realization at		Copra makers net margin as per cent of total realization at		Oil millers net margin as per cent of total realization at	
		Wholesale price	Retail price	Wholesale price	Retail price	Wholesale price	Retail price	Wholesale price	Retail price
1	2	3	4	5	6	7	8	9	10
Quilandy	230.80	299.40	318.66	77.09	72.43	12.65	11.88	1.21	1.14
Chengottukav	230.56	299.40	318.66	77.01	72.35	12.75	11.98	1.21	1.14
Feroke	229.86	299.40	318.66	76.77	72.13	13.28	12.48	1.21	1.14
Balussery	232.55	310.45	330.45	74.91	70.37	14.33	13.46	1.24	1.17
Unnikulam	226.80	294.74	313.68	76.95	72.30	11.59	10.89	1.22	1.15
Omassery	224.67	294.74	313.68	76.23	71.62	11.48	10.78	1.22	1.15

Farmers price in relation to the total realization at wholesale price of oil ranged from 74.91 per cent to 77.09 per cent.

On an average the total marketing costs came to Rs.29.92 for one hundred nuts from copra maker to the retailer of oil at Calicut market. The average realization from the different products at wholesale and retail prices of oil only were Rs.299.70 and Rs.318.97 respectively. Marketing costs constituted 9.98 per cent of the former and 9.38 per cent of the latter. The average price received by farmers per one hundred nuts was 229.21 and this constituted 76.48 per cent of the value of total realization of the products at wholesale prices and 71.86 per cent of realization when oil prices were reckoned at retail level. The total marketing margins were Rs.70.49 upto wholesale stage and Rs.89.76 upto retail stage of oil and wholesale stage of other products. The former was 23.52 per cent and the latter, 28.14 per cent. Needless to say, the margins mentioned above are gross margins. Net margins were Rs.40.57 and Rs.59.84 and these contributed 13.54 per cent and 18.76 per cent respectively upto wholesale and retail level. The major share out of this seems to have gone to copra makers which as seen

earlier ranged from 11.48 to 14.33 per cent which is very high. What is more relevant is to look at the net margin of copra makers in relation to the buying price of coconuts, and this was 16.60 per cent, which was still higher.

Such high margins are indicators of inefficiency in the sense that the copra makers were not paying the farmers a sufficiently high price as warranted by copra and oil prices. However, in the situation which prevailed in coconut products market during the relevant period does not seem to warrant such a conclusion. As mentioned earlier, our study is based on concurrent margins method and the actual margins realized by the intermediaries could be different from the one seen on the basis of concurrent margins, if the movement of prices was upward or downward. During the relevant period, prices of coconut products were declining rapidly and in fact, coconut oil price which found its peak in June 1984 at Rs.3555 a tonne systematically declined to Rs.1556 in December 1985, on account of the import of palm oil. In such a situation, a good deal of uncertainty will be created in the minds of the intermediaries -

much more than what they are used to, generally – regarding the price at which they would be able to sell and yet from what was happening they could be fairly certain that prices in the immediate future would be lower. There has to be a minimum time lag of four days between the purchase of coconuts and the sale of copra and since prices were fast declining, it was almost certain that the copra prices actually realized by copra makers were less than those warranted by the purchase price of coconuts offered by them. Thus, the actual margins realized by copra makers would have been much less than what was shown above.

Earlier we have seen that the farmers were generally of the view that the prices which they received were quite reasonable. But we now find on the basis of objective analysis that they ought to get still higher prices and to the extent that they get less, it is an indication of inefficiency of the marketing system.

The net margin of oil millers was Rs.3.65 on an average and this constituted 1.21 per cent of total realization from all the products at wholesale prices. Oil millers' net margin as a percentage of their purchase

price of copra was 1.36. Though this appears to be low, considering the fact that they were in some sense wholesale dealers, margins could have been slightly less.

Net margin of retailers at Calicut was Rs.17.90 for oil equivalent of one hundred nuts and this worked out to 6.77 per cent of their buying price of oil. This level of net margin also seems to be on the higher side.

The farmers' share and marketing margins that we analysed so far pertain to different panchayats. Among the panchayats margins appear to be fairly uniform, taking into account the differentials in quality of nuts and transport cost. It may also be of interest to see whether there is any discrimination against very small producers in the sense that their share is lower than that of others. Categorywise analysis of farmers' share and marketing margins will reveal this. However, it has been found that average annual price per one hundred nuts received by the four categories of farmers was very close to each other. Thus, the average annual prices were Rs.271.34, Rs.271.41, Rs.271.45 and Rs.271.49 in respect of categories one, two, three and four respectively. It is therefore quite clear that there is absolutely no price discrimination against the very small producers and hence their share in total

realization from the various products of coconut would therefore be same as those of small farmers.

Calicut is one of the major terminal markets in the state from where coconut oil is exported outside the state such as Bombay, Madras, Hyderabad, etc. It would therefore be interesting to examine marketing margins in respect of the relevant marketing channels. However, for want of relevant price data and other details in respect of all such centres, we have confined such an exercise to Bombay market which is considered the most important one. The relevant Bombay market prices have been obtained from the different issues of 'Economic Times', Bombay. In this exercise it is assumed that while oil is exported to Bombay, oil cake is sold locally. The various marketing costs are shown in Table 20.

The various items of cost incurred by the miller are crushing costs, taxes paid, container costs, brokerage, handling and loading charges and transportation costs to Bombay. On an average, the total costs came to Rs.17.80 to 18.49 among the panchayats for the copra equivalent of hundred nuts. It could be seen from the Table 20, that the taxes paid accounted for the highest share, being 36.96 per cent of the total costs. It was

Table 20. Costs incurred by oil miller in rupees for copra equivalent of 100 nuts, on sale outside the state to Bombay

Panchayat	Price paid for copra	Crushing costs	Taxes	Costs for containers	Brokerage	Transportation costs to Bombay	Handling and loading charges	Total costs	Price paid copra for plus costs incurred
1	2	3	4	5	6	7	8	9	10
Quilandy	268.42	2.70	6.66	3.00	0.72	3.44	1.49	18.01	286.43
Chengottukav	268.42	2.70	6.66	3.00	0.72	3.44	1.49	18.01	286.43
Feroke	268.42	2.70	6.66	3.00	0.72	3.44	1.49	18.01	286.43
Balussery	278.98	2.70	6.92	3.00	0.72	3.57	1.55	18.49	297.47
Unnikulam	263.90	2.70	6.54	3.00	0.72	3.38	1.47	17.80	281.70
Omassery	263.90	2.70	6.54	3.00	0.72	3.38	1.47	17.80	281.70
Average	268.67	2.70	6.66	3.00	0.72	3.44	1.49	18.02	286.69
Percentage to total	-	14.98	36.96	16.65	4.00	19.09	8.27		

assumed that oil was sent as consignment sales and so the taxes paid were the same as in the case of sale within the state. The next largest share was accounted for by the cost of transportation which was 19.09 per cent followed by container costs being 16.65 per cent. Crushing costs came to Rs.2.70 for the copra equivalent of 100 nuts which was 14.98 per cent of the total costs incurred. The price paid for copra together with costs incurred ranged from Rs.281.70 to 297.47 for the copra equivalent of 100 nuts among the panchayats, the highest being in Balussery which was Rs.297.47.

The net margin of the oil millers in the case (Table 21) on sale to Bombay was Rs.21.84 on an average and this constituted 6.69 per cent of total realization from all the products at wholesale prices in Bombay as shown in Table 2[illegible]. Comparing with the net margins of the millers in the previous case on sale within the state, where it was only 1.21 per cent on an average, this appears to be very high. This is because of the price difference between the wholesale prices of Bombay and Calicut per kilogram of oil being Rs.25.39 and Rs.23.05 respectively. However as mentioned earlier, with regard to margins of copra makers, actual net margins in respect of sales of oil to Bombay would have been lower. Thus though there

Table 21. Gross and net margins of the intermediaries on sale to Bombay

(In rupees per 100 nuts)

Panchayat	Selling price of Farmer/ Farmers price in Meenam	Selling price of copra maker/ buying price of oil miller	Price paid for 100 nuts plus marketing costs of copra maker	Copra makers realization from copra, husk and shell	Copra makers net margin	Selling price of oil miller/ buying price of wholesaler	Price paid for copra plus costs incurred	Oil millers realization from oil and oil cake	Oil millers net margin
1	2	3	4	5	6	7	8	9	10
		(Rs.15.08/ kg of copra)				(Rs.25.39/ kg of oil)			
Quilandy	230.80	268.42	248.56	286.42	37.86	290.97	286.43	308.22	21.79
Chengottukav	230.56	268.42	248.26	286.42	38.16	290.97	286.43	308.22	21.79
Feroke	229.86	268.42	246.66	286.42	39.76	290.97	286.43	308.22	21.79
Balussery	232.55	278.98	252.49	296.98	44.49	302.39	297.47	320.31	22.84
Unnikulam	226.80	263.90	247.75	281.90	34.15	286.15	281.70	303.12	21.42
Omassery	224.67	263.90	248.07	281.90	33.83	286.15	281.70	303.12	21.42

Table 22. Percentage share of the farmer, copra maker and oil miller intthe total realization from oil, cake and shell and husks on sale to Bombay

(Rupees per 100 nuts)

Panchayat	Price recovered by farmer in Meenam	Total realization by intermediaries from oil, cake, shell and husk at wholesale price	Farmers price as a per cent of total realization at wholesale price	Copra makers net margin as a per cent share of total realization at wholesale price	Oil millers net margin as a per cent share of total realization at wholesale price
1	2	3	4	5	6
Quilandy	230.80	326.22	70.75	11.61	6.68
Chengottukav	230.56	326.22	70.68	11.70	6.68
Feroke	229.86	326.22	70.46	12.19	6.68
Balussery	232.55	338.31	68.74	13.15	6.75
Unnikulam	226.80	321.12	70.63	10.63	6.67
Omassery	224.67	321.12	69.96	10.54	6.67

may appear to be inefficiency in marketing as judged by margins of intermediaries, in fact, it may not be so.

The average prices received by farmers per one hundred nuts was Rs.229.21 and this constituted only(Table 22) 70.20 per cent of the value of total realisation of the products at wholesale prices in Bombay as against 76.48 per cent in the previous case. The average realization from the different products at wholesale level was Rs.326.54 whereas it was only Rs.299.70 in case of sale within the state.

Market integration

To examine the efficiency of a marketing system, one must inevitably look at the degree to which various villages, primary, secondary and terminal markets are related to each other. Price movements among the various markets indicate this inter-relationship. Interrelation between price movements in two or more markets is defined as market integration. The data of the monthly wholesale prices of coconut with husk for 100 numbers and oil per quintal for the year 1984-85 for the twelve months, were utilized for examining the inter-relationship among prices in several markets. Prices at which the farmers sell coconuts at the village site were collected from the different panchayats, and the average prices thus obtained for the sample farmers in each panchayat were used. The wholesale prices of coconut with husk at the wholesale prices of coconut oil at Calicut were also used. The degree of inter-relationship in price movements was estimated by calculating correlation coefficients among the monthly prices in these markets.

The correlation matrix obtained for the prices of the six panchayats (primary markets) and prices at Calicut (terminal market) is shown in the Table 23.

Table 23. Correlation matrix of monthly prices of coconut oil and coconut in different markets (1984-85)

	Calicut (oil)	Calicut (nuts)	Quilandy (nuts)	Chengottu-kav (nuts)	Feroke (nuts)	Balussery (nuts)	Unniku-lam (nuts)	Omassery (nuts)
1	2	3	4	5	6	7	8	9
Calicut (oil)	1.0000	0.91100	0.90639	0.90929	0.90504	0.90628	0.91906	0.92780
Calicut (nuts)		1.0000	0.99938	0.99913	0.99936	0.99948	0.99881	0.99797
Quilandy (nuts)			1.0000	0.99960	0.99901	0.99971	0.99821	0.99697
Chengottukav (nuts)				1.0000	0.99916	0.99916	0.99797	0.99658
Feroke (nuts)					1.0000	0.99889	0.99760	0.99607
Balussery (nuts)						1.0000	0.99837	0.99747
Unnikulam (nuts)							1.0000	0.99942
Omassery (nuts)								1.0000

Note

Critical values at levels of significance

At 5 per cent 0.553

At 1 per cent 0.684

The table shows very high values of correlation coefficients, suggesting high degree of market integration. It will be of interest to note that among the various values of the coefficients, those relating wholesale prices of oil at Calicut on the one hand and coconut prices (wholesale) at Calicut itself and coconut prices received by farmers on the other, show relatively lower values than those among various coconut prices. Apparently, though price movements at coconut mainly go along price movements in coconut oil at Calicut, the former does not go entirely along with the latter. This is to be explained by the fact that while coconut oil price is the most predominant determinant of coconut prices, the latter is also influenced by prices of oil cakes. On the other hand price movements of coconuts in the villages take pace in unison with price movements of coconut at Calicut. From the results noted above, it is very much evident that the level of market integration is very high.

Spatial price differences

Spatial price differences are yet another indicator of marketing efficiency. If the marketing system functions efficiently, spatial price differences of a product will not be unduly higher than transport costs.

The average annual prices of coconuts during 1984-85 at the Calicut and at the different villages are given in Table 24.

Table 24. Annual average prices of coconut with husk

Name of village/market	Yearly average price for 100 nuts
1	2
Calicut	275.42
Quilandy	272.74
Chenkottukavu	272.33
Feroke	272.27
Balussery	274.46
Unnikulam	269.14
Omassery	267.64

One could observe very high uniformity in prices in different places. No doubt, wholesale prices at Calicut market were the highest and this is to be expected because Calicut is a terminal market. Most of the village prices were very close to Calicut market prices and in fact

differences between Calicut prices on the one hand and village prices on the other in all but two cases appear to be less than transport cost. The two villages of exception are farther away from Calicut. Even in respect of these two villages where prices differences are comparatively high they do not seem to be higher than transport costs. (Transport costs of copra obtained from 100 nuts are given in Table 16 dealing with marketing margins. Considering the fact that copra weight of 100 husked nuts is only around 18 kg., transport cost of unhusked nuts ought to be several times the transport cost of copra). Moreover, the quality of nuts in these two villages was not on par with quality of nuts in other villages. Judged from the criterion of spatial price difference, performance of the marketing system ought to be rated as efficient.

Seasonal pattern of products, marketing and prices

Table 25 gives month wise production of coconuts for the sample as a whole. Though coconut is a continuously yielding tree throughout the year, production pattern is not uniform throughout the year. Generally speaking, production is more during the months of Makaram (15th January to 15th February) to Medam (15th April to 15th May). In the study area the peak month was Meenam (15th March to 15th April) during which 16.17 per cent of the total nuts were harvested. As can be seen from Table 26, as much as 44.58 per cent of the total production is concentrated in four months of 15th January to 15th May approximately.

Table 25. Monthwise production of nuts (Panchayat-wise)

Panchayat	Medam (15th April to 15th may)	Edavam	Mithu-nam	Karki-takam	Chingam	Kanni	Thulam	Viri-shikam	Dhanu
1	2	3	4	5	6	7	8	9	10
Quilandy	3901	768	2331	2726	2129	1194	2602	3247	3902
Chengottukav	1820	2590	1218	1970	959	1750	2174	823	2897
Feroke	2366	2078	1475	1633	1159	1535	2036	1318	2760
Balussery	2925	2672	1553	2406	2063	2034	3253	1053	3923
Unnikulam	2980	1908	3060	2678	2141	708	2830	3402	3626
Omassery	2125	1916	1583	2248	1089	1880	1404	2703	3256
Total	16117	11932	11220	13661	9540	9101	14299	12546	20364
Percentage to the total	8.70	6.44	6.06	7.37	5.15	4.91	7.72	6.77	10.99

(Contd.)

Table 25.(Contd.)

Panchayat	Makaram	Kumbam	Meenam	Total	As percentage to total
1	11	12	13	14	15
Quilandy	2304	4363	5450	34917	18.85
Chengottukav	2926	1959	4615	25701	13.87
Feroke	2450	2290	4265	25365	13.69
Balussery	3048	4466	4344	33740	18.21
Unnikulam	1300	5465	5947	36045	19.46
Omassery	1436	4519	5325	29484	15.92
Total	13464	23062	29946	185252	100.00
Percentage to the total	7.27	12.45	16.17	100.00	

Table 26. Nuts harvested in the peak and lean seasons in different panchayats in the year 1984-'85.

Panchayat	Peak season		Lean season	
	Total production	Per cent to annual total	Total production	Per cent to annual total
1	2	3	4	5
Quilandy	16018		18899	
Chengottukav	11320		14381	
Feroke	11371		13994	
Balussery	14783		18957	
Unnikulam	15692		20353	
Omassery	13405		16079	
Total	82589	44.58	102663	55.42

Peak season (equivalent months in Christian Era) - January 15th to 30th, February, March, April and May 1st to 15th.

Lean season - May 15th to 31st, June, July, August, September, October, November, December and January 1st to 15th.

Seasonal pattern of marketing

The monthwise sales of the nuts were separately tabulated as shown in the Table 27. It could be seen that the percentage sales out of the total was the highest during the months of Kumbam, Meenam and Medam being 16.45 per cent in Meenam, 14.39 per cent in Kumbam and 9.02 per cent in Medam. The sales were observed to be comparatively less during the months of Chingam, Kanni and Thulam. This is in conformity with the nature of nut production during these months which were observed to be less as is evident from the previous table. Panchayat-wise, the percentage of sales out of the total was the highest in Quilandy, being 19.7 per cent and the least in Chengottukav, being 14.46 per cent.

Table 27. Month-wise sales of nuts (Panchayat-wise)

Panchayat	Medam	Edavam	Mithunam	Karki-takam	Chingam	Kanni	Thulam
1	2	3	4	5	6	7	8
Quilandy	2551	618	1294	576	629	694	602
Chengottukav	1340	520	1018	970	400	1050	1000
Feroke	1965	1865	1210	1205	930	1010	780
Balussery	1497	1480	502	1105	500	1160	1754
Unnikulam	1540	750	1425	1450	1200	350	1518
Omassery	1380	1306	950	2000	780	1445	807
Total	10273	6539	6399	7306	4439	5709	6461
Percentage to the total	9.02	5.74	5.62	6.4	3.90	5.01	5.67

(Contd.)

Table 27 (Contd.)

Panchayat	Vrishikam	Dhanu	Makaram	Kumbam	Meenam	Total	Percentage to total
1	9	10	11	12	13	14	15
Quilandy	2147	2902	1754	3763	4900	22430	19.70
Chengottukav	2209	1697	1776	1059	3425	16464	14.46
Feroke	975	2085	1971	1790	770	16556	14.54
Balussery	465	2300	2108	3000	3212	19083	16.76
Unnikulam	2160	2060	301	3908	3670	20332	17.86
Omassery	2249	1680	785	2859	2750	18991	16.68
Total	10205	12724	8695	16379	18727	113856	
Percentage to total	8.96	11.18	7.64	14.39	16.45		

Seasonal price variations

Most agricultural commodities are produced seasonally and consumed over the entire year. Hence prices during the marketing season are bound to be lower than during other periods. However, if the marketing system performs its functions efficiently price rise during the lean season would not be unduly higher and price fall during the peak season would not be unduly lower. This is because competition among the buyers for stock holding would ensure that prices do not fall unduly during the peak marketing season. In the present study seasonal variations in prices have been examined on the basis of index of prices worked out through the method of moving averages. Data for the construction of index relate to monthly wholesale prices of coconut oil at Calicut for the nine year period, 1976-'84. Since wholesale prices of coconuts were found to move quite closely with the prices of oil, index for coconuts was not worked out separately. Monthly seasonal indices of coconut oil prices for the period 1976-'84 are given in Table 28. In order to compare these indices with the market arrivals, indices for monthly sales of coconuts for one year have been worked out on the basis of data

Table 28. Seasonal indices of coconut oil prices in Calicut and for monthly sales of coconuts in the panchayats.

Months	Seasonal indices of oil prices	Seasonal indices for monthly sales of coconuts
January	104.43	92.00
February	98.65	173.00
March	89.95	197.00
April	91.73	108.00
May	92.32	69.00
June	99.18	67.00
July	98.12	77.00
August	100.94	47.00
September	103.34	60.00
October	102.35	68.00
November	111.31	108.00
December	104.28	134.00

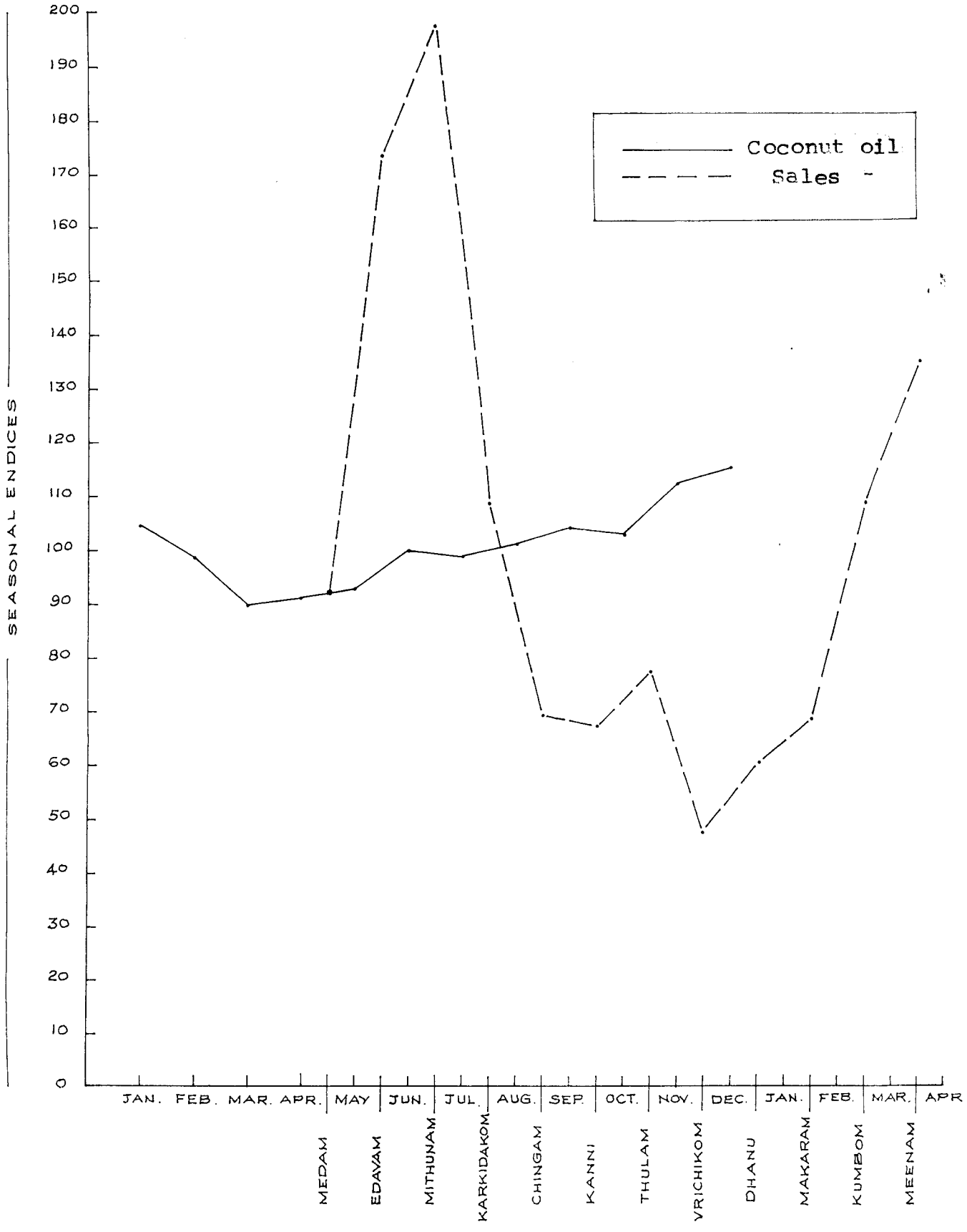

FIG. 2. SEASONAL INDICES FOR COCONUT OIL PRICES IN CALICUT AND FOR SALES OF COCONUTS IN THE SELECTED PANCHAYATS FOR THE STUDY.

obtained from sample farmers (Data on monthly arrivals or production of coconut oil were not available). These latter indices were worked out through the method of percentage of average. Needless to say, since the data on sales of nut pertain to a shorter period of one year and since they also pertain to only the sample farmers, strict comparison between the two may not be appropriate. One cannot observe clear cut pattern in neither series. One striking feature is that the range of the indices of oil prices is much smaller (21.36) than that of range of index for sales (150.00) which indicates that seasonality is much more pronounced in sales of coconuts than in prices of coconut oil. Though this may be an indication of efficiency of the marketing system, the fact is that the size of the range for oil was fairly high. Thus as against the range of 21.36 for coconut oil prices in Calicut observed in the present study, the ranges of indices of groundnut oil prices for the period 1960-'66 to 1966-'67 were 14.07 in Bombay, 12.19 in Delhi and 14.54 in Hyderabad. (Radhakrishnan, 1971). However in the present study, the value of the index just lower than the highest value

was much lower which shows that seasonal high of price did not remain for long. Range of the index, calculated as the difference between the lowest and the one which is lower than the highest was only 14.48. However, considering the fact that in terms of absolute amount of rupees, this would be a fairly large sum, one cannot conclude that seasonal variations in prices were reasonable. Hence on the pattern of seasonal price movements, the marketing system cannot be considered to have performed efficiently.

Role of the Coconut Development Corporation

The Kerala State Coconut Development Corporation Limited a public sector enterprise was established in 1975 with the aim of protecting the interests of a large multitude of coconut growers throughout the state of Kerala.

The major objectives of the Corporation are

1. Development of the coconut industry,
2. Provision of facilities and conditions conducive to development,
3. Modernization of coconut based industry in the state.

Towards fulfilling these objectives, the corporation set up two large integrated coconut processing complexes, one each in the southern and northern regions of the state. The complexes have an annual crushing capacity of 18,000 tonnes of copra each and are equipped with modern sophisticated expellors. The one in the southern region is located at Mamom near Attingal and other at Thiruvangur in Calicut district. For procurement of the raw-material viz. copra, the corporation has

established purchase centres at Balaramapuram, Attingal, Karunagapally, Alleppey, Shertallay, Kottapuram, Tirur, Badagara, Ponnani, Kozhikode, Elathoor and Kuttiadi.

The corporation's product that is marketed all over the country is the multifiltered pure coconut oil in the brand name "KERAGEM" through a number of consignment agents located at different parts of the country at Madras, Salem, Sholapur, Bijapur, Ahmedabad, Bombay, Belgaum and Bangalore. For making available the production to consumers within the state, it is marketed in small consumer packs through the Mobile/Retail sales outlets operated by the corporation as well as the net work of Maveli stores operated by the Kerala State Civil Supplies Corporation. The corporation is reported to be shortly entering into allied fields of solvent extraction, manufacture of dessicated coconut, production of refined coconut oil, coconut milk, coconut jelly, cattle feed, biscuit, activated carbon and also bottling of coconut water as a soft drink. These are the immense potentialities which the corporation ought to exploit in the near future.

The processing complex in the northern region, at Thiruvangur in Calicut district was set up in March, 1984. This complex works on continuous three-shift operation.

It purchases copra from the centres like Kuttiyadi, Badagara, Thiruvangur, Elathur, Tirur, Ponnani, Balussery and Perambra. It was reported that the daily purchase from there centres was 50 tonnes. Since the survey was done during September-November 1985 for the period 1984-'85, details concerning the sales and annual production could not be obtained. Moreover, the complex being in its infancy stage, it is too early to evaluate critically the functioning of the corporation in Calicut district.

The processing complex at Mamom near Attingal commenced production in December, 1971 with continuous three shift operations. It is reported that there was about 100 per cent increase both in the production and sales of coconut oil in 1981-'82 compared to that of the previous year. The sales receipt of coconut oil cake and the quantum of copra crushed are reported to have an increase of 185.51 lakhs and 2627 quintals in 1981-'82 compared to that in the previous year. It was indicated that the corporation had to suffer a net loss of Rs.64 lakhs in 1981-'82 because of the steep fall in coconut oil price.

Performance of public sector units of the state in general is reported to be far from satisfactory and there is hardly anything in the air to reverse this state of affairs. Viewed in this environment, it will be a hazardous guess to think that the corporation will be able to fulfil its objectives in the near future.

Summary

SUMMARY

The present study on marketing of coconuts in Calicut district was conducted during September-November, 1985. The objectives were to investigate about the marketing practices and problems with reference to price fixation, to study the market structure and the role of Coconut Development Corporation and to assess marketing efficiency in terms of marketing costs and margins, degree of market integration, spatial and temporal price variations etc. The study is mainly based on data collected from a sample of 150 coconut growers and 20 village traders in six panchayats viz. Quilandy, Chengottukav, Feroke, Balussery, Unnikulam and Omassery. Stratified random sampling method has been adopted for selection of coconut growers, who were grouped into four categories on the basis of land holding. In the first place, six panchayats in the district were randomly selected and from each of them one ward was randomly selected. Lists of coconut growers from each ward were prepared and the growers were classified into four groups on the basis of number of bearing trees they had. A random sample of 25 growers was selected from each ward, in such a way that the number

from each strata was roughly in proportion to the number of bearing trees.

Apart from coconut growers and village traders all major oil millers in the district were also personally interviewed to elicit data. The main tool of analysis was tabular method for data interpretation. However, for studying market integration, correlation coefficients of monthly prices in the primary and terminal markets were obtained. Temporal price variations were studied on the basis of seasonal indices worked out through the method of moving averages.

General socio-economic features of the sample farmer households revealed high levels of literacy. This was as expected. The levels of education of the respondent farmers was fairly adequate at the farmer level being 90 per cent in the total sample. No clear trend was noticeable with regard to choice of occupation categorywise, but it could be seen that only a low fraction (32 per cent) of the sample farmers depended solely on agriculture and that trade though on a small scale, was the most preferred additional occupation, among others due to its less capital intensive activity coupled with low risk. The average size of land holding was only 0.23 hectare and size of holding

ranged from 0.09 hectare in category one to 0.90 hectare in category four.

It was evident from the cropping pattern that as much as 70.53 per cent of the gross cropped area in the aggregate was devoted to coconut cultivation. It revealed the importance of coconut and its marketing in particular. Productivity estimates of coconut revealed that production per bearing tree did not show any consistent relationship with size of holding. On an average it was 36 nuts per bearing tree, showing the highest production in Balussery and lowest in Omassery.

In Kerala, coconut is generally marketed as matured or dry nuts and as copra (edible or milling). The number of harvests in a year varied from 4 to 12, of mature nuts, generally sold with or without husk to copra makers who convert them to copra and sell to the local or other oil millers. About 65 per cent of the nuts are used to produce milling copra of which 60 per cent only is crushed within the state. Prices paid to farmers are generally on the basis of prevailing prices of coconut oil and copra which are published in daily newspapers and broadcast over the radio.

In the study area, it was seen that all the sample farmers resorted to farm sales of coconuts to local buyers who are copra makers. Reason for this method of sale was mainly attributed to the convenience of this method and because of the belief that prices received were reasonable. Convenience, again was the main reason for the choice of buyers indicated by 34.66 per cent of the respondents. Other reasons were relatively better prices, reliability, advances received etc. Regarding price fixation, apart from ruling wholesale market rates for copra and oil which were the main base for determination of prices at the farmers' level, quality and size of nuts were also taken into consideration.

On working out the marketed surplus it was seen that only 61.46 per cent of the total production was actually marketed. It was interesting to note that as much as 31.87 per cent of production of nuts was used for home consumption in the producer households. The proportion of marketed surplus varied directly with size of holding ranging from 30.46 to 81.68 per cent among the different categories. Low productivity and small holding size are the reasons attributed for this commercial crops low marketed surplus.

For the present study, the movement of coconut from farmers to the mills through copra makers and then of oil to the consumers through retailers was considered to identify marketing channels. For all the sample farmers except for a very few, these channels could be identified. The major centre outside the state where there was much demand for coconut oil was Bombay. Copramakers mostly made the copra by sundrying, using shells as fuel, selling it mainly to the mills at Calicut. On the basis of available information it was found that market conduct of buyers of nuts was unlikely to be unfavourable to farmers. Of the factors which could have an unfavourable impact on competition were, borrowings of farmers from the copra makers, heterogenity of the product and the high degree of convenience which farmers enjoyed in villages sales. Ninety two per cent of the respondent farmers felt that prices they received were commensurate with ruling wholesale prices of unhusked nuts. It was found that structural characteristics of the market, especially at the farmers level were not such as to adversely affect market conduct to the detriment of farmers.

Marketing margins were worked out from the stage of sale of nuts at the farmer level to the stage of retail sale of oil in Calicut as also in relation to wholesale prices of oil in Bombay market separately. This was worked out as a variant of the concurrent method using the prices received by farmers during the malayalam month of Meenam (March-April). Marketing margin here refers to the difference between price received by the farmer for one hundred coconuts on the one hand and the realization by the intermediaries for corresponding equivalent quantities of main products and byproducts on the other.

The marketing costs of the copra makers ranged from 16.80 for 100 nuts to Rs.23.40 among the panchayats, the major item accounting in the total costs, being transportation costs from the farms to the premises of the copramakers. The costs of millers averaged Rs.9.41 for the copra equivalent of 100 nuts. Marketing costs of the retailers averaged Rs.12 per quintal of oil and in terms of oil content of 100 nuts, to Rs.1.38.

The average realization from the different products at wholesale and retail prices of oil at Calicut were Rs. 299.70 and Rs.318.97 respectively. Average price received

by farmers per 100 nuts was Rs.229.21 which constituted 76.48 per cent of the value of total realization of the products at wholesale price and at a retail price of oil, it was 71.86 per cent.

Net margins of copra makers which ranged from 11.48 to 14.33 per cent in the total realization from all products appeared to be very high. However since during the period of our study, prices of coconut oil were declining rather rapidly, the actual margins realized by them would be much less.

The net margins of oil millers was on an average Rs.3.65 which constituted 1.21 per cent of the total realization at wholesale prices from all products. The retailers net margin was Rs.17.90 for oil equivalent of 100 nuts, being 6.77 per cent of their buying price of oil. This also appears to be on the higher side. However as stated above, actual margins could be much lower.

There was no discrimination in prices against very small farmers and their per cent share in the total realization from all products, would be same as those of other farmers since the category wise prices received for nuts were very close.

Prices appeared to be more or less uniform among the panchayats, the differences mainly attributable to the differences in nut quality and transport costs.

In the case of sale of oil to Bombay, the costs incurred by the millers averaged Rs.18.02 for oil equivalent of 100 nuts, the largest proportion of which was accounted for by taxes paid. Their net margin in this case was Rs.21.84 on an average, constituting 6.69 per cent of total realization from all products at wholesale prices in Bombay, which was much higher than in the previous case. Margins of millers in this case appear to be very high. However, as stated above, actual margins realized will be much smaller. The percentage share of the farmers was only 70.20 per cent.

The degree of interrelationship of movement of prices was estimated by finding out correlation coefficients among the monthly prices in the villages and the terminal market. Values of the coefficient were found to be very high, suggesting high degree of market integration. Spatial price differences, which is another indicator of marketing efficiency, did not appear to be higher than transport costs.

Regarding the seasonality in production, total production was concentrated in approximately in the four months of January 15th to May 15th which corresponded to the peak months of the malayalam year, namely Makaram, Medam and Meenam. Panchayat wise, total production was highest at Unnikulam. Seasonality was observed to be more pronounced in the monthly sales of coconuts on the basis of data obtained from sample farmers. Seasonal variations in prices have been examined on the basis of index of prices worked out through the method of moving averages. Indices for monthly sale of coconuts for one year were also worked out in order to compare the previous indices with the market arrivals. The pattern of seasonal price movements revealed that the marketing system cannot be considered to have performed efficiently.

The Kerala State Coconut Development Corporation commenced its processing unit in Calicut District only in 1984. Very little details about its unit operations in the district were available. Even then, the Corporation's role has been reported to be far from satisfactory.

The main problems confronting the farmers as was revealed during the course of our investigation, were their small holdings thereby leading to scanty surpluses

and the low income generated from agriculture. The only practicable solution to these problems seem to be creation of farmers organizations. There is very little experience in Kerala with regard to formal cooperatives for organizing production. The few marketing societies which exist are not very active. Though there are some talk at the policy making levels on formation of Anand model societies, it is doubtful whether they will succeed in the present environment. A more appropriate approach seems to be encouragement of informal cooperative activities in production and marketing.

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Appendices

APPENDIX - I

Interview schedule for farmers

Name of the investigator :

Date of interview :

I. Identification

1. Name of the farmer :
2. Address :
3. Actual or approximate location of house :

II. Particulars of land holding

1. Total area held ..... acres ..... cents.
2. Area occupied by crops out of item (1)

III. Cropping pattern

Name of the crop	Area in cents	Total No.of trees/plants	No.of plants/ Trees yielding
1. Coconut			
2. Cocoa			
3. Other perennials			
4. Other crops			

IV (a) Monthwise details of production and disposal of coconut/copra/coconut oil/coconut oil cake during the year 1159-60

	Medam (1159)	Edavam	Mithu-nam	Karki-takam	Chingam (1159)	Kanni	Thulam	Vrishi-kam	Dhanu	Makaram	Kumbam	Meenam	Total (1159-60)
1. Total coconuts harvested (No.)													
2. Nuts given as wages to climber (No.)													
3. Nuts given as wages to assembler (No.)													
4. Nuts used for domestic consumption (No.)													
5. Net surplus (1-2+3+4)													
6. Nuts sold (No.) a) from (5) above b) from old stock (dry)													
7. Nuts converted to copra (No.)													
8. Quantity of copra made (kg)													
9. Nuts converted to oil (No.)													
10. Quantity of oil made (kg)													
11. Quantity of oil cake made (kg)													
12. Nuts stored for sale later													

IV (b) Monthly prices obtained for coconut/copra/coconut oil and coconut oil cake during the year 1159-60.

	Medam (1158)	Edavam	Mithunam	Karkitakam	Chingam (4159)	Kanni	Thulam	Vrishikam	Dhanu	Makaram	Kumbam	Meenam	Total (1158-60)
1. Coconut with husk per (100)													
a) Green													
b) Dry													
2. Coconuts without husk per (100)													
a) Green													
b) Dry													
3. Coconut husk per (100)													
4. Copra (per kg)													
a) Office pass copra													
b) Rasi copra													
c) Rajpur copra													
5. Coconut oil (per kg)													
6. Coconut oil cake (per kg)													
7. Coconut shell (per 100)													

V(a) Type of buyers and place of sale (1158-59)

Product/Buyer	Quantity sold	Place of sale	Distance to place of sale	Transport cost paid by seller	Loading and unloading charges paid by seller	Commission if any paid by seller
Coconut						
a) Oil miller						
b) Copra maker						
c) Village merchant						
d) Itinerant Traders						
e) Consumers direct						
f) Others (specify)						
Copra						
a) Oil miller						
b) Copra makers						
c) Village merchant						
d) Itinerant Traders						
e) Others (specify)						
Coconut oil						
a) Oil miller						
b) Village merchant						
c) Consumers direct						
d) Others (specify)						

Note: Indicate the price for each product sold to different buyers indicating the price advantage/disadvantage in each case (use space below)

V(b) Special reasons of any, for the choice of buyer in order to importance (Give not more than 3 reasons).

1.

2.

3.

V(c) Have you sold to a particular buyer during the past few months or years?

V(d) Special reasons if any, for the choice of place of sale, in order of importance (Applicable to sales away from farm)

1.

2.

3.

V(e) Special reasons, if any, for selling at the farm itself.

1.

2.

3.

VI Borrowings from buyers of coconuts during the past year

a) Do you borrow money from buyers of coconuts Yes/No

b) If yes, how many times during last year

c) Amount per loan

d) Rate of interest, if any

VII Time lag between sale and realisation of value

a) Is there time lag between sale and realization of the amount Yes/No

b) If yes, what is the average duration of time lag (Please indicate in days or months)

VIII. Harvesting and processing charges actually paid

a) Harvesting charge

	Rate	Amount/Quantity given
Nuts		
Money		
Food		

b) Assembling (collection) charges

	Rate	Amount/Quantity given
Nuts		
Money		
Food		

c) Dehusking charges - Rupees per hundred

d) Copra making

	Average No.of days of work during each month for	Hours worked/day				Wages paid for hired labour	
		Family members		Hired labour			
		Male	Female	Male	Female	Male	Female
1. Drying and copra making (Kiln drying or sun drying)							
2. Transportation							
3. Loading/unloading							

e) Milling charges and cost of transport

	Rs.	Distance to mill
i) Cost of transport of copra to mill		
ii) Milling charge		
iii) Cost of transport of oil		
iv) Loading/Unloading charges		

IX. Describe how price is fixed in the case of sale of coconuts.

X. Indicate whether prices received are commensurate with the wholesale market prices (Indicate reasons, if they are not).

XI. Suggest improvements, if any, needed in marketing coconuts.

APPENDIX - II

Interview schedule for traders

Name of the Investigator :

Date of interview :

I. **Identifications**

1. Name of the Trader :
2. Address :
3. Location of business :

II. Particulars of trading branches, if any :

No.of Branches :

III. Total sales turnover of all commodities during the year 1159-1160.

Items	Quantity	Price
1. Coconut		
2. Coconut husk		
3. Coconut shell		
4. Copra		
5. Coconut oil		
6. Coconut oil cake		

IV (a) Monthwise details of trading of coconut, copra, coconut oil etc. during the year 1158-'59

		Medam 1159	Edavam	Mithunam	Karkida-kam	Chingam 1159	Kanni	Thulam	Vrishikam	Dhanu	Makaram	Kumbam	Meenam	Total 1158-59
1. Unhusked nuts purchased	Qunty. Price													
2. Husked nuts purchased	Qunty. price													
3. Copra purchased/ obtained	Qunty. price													
4. Oil obtained	Qunty. Price													
5. Oilcake obtained	Qunty. Price													
6. Coconut sold	Qunty. Price													
7. Husks sold	Qunty. Price													
8. Shells sold	Qunty. Price													
9. Copra sold	Qunty. price													
10. Oil sold	Qunty. Price													
11. Oil cake sold	Qunty. Price													

IV (b) Performance of activities

a) Entirely by family, members
b) Entirely by permanent labourers
c) Entirely by casual labourers
d) Combination of (a) and (b) (Specify in terms of percentage)
e) Combination of (a) and (c) (-do-)
f) Combination of (b) and (c) (-do-)
g) Combination of (a), (b) and (c) (-do-)

1. No.of family members engaged
2. No.of hours per day engaged
3. No.of days per week engaged
4. No.of casual labourers engaged
5. No.of hours per day engaged
6. No.of days per week engaged
7. Wage rate
8. No.of permanent labourers engaged
9. Monthly salary (including value of perquisites)

IV (c) Various charges/costs incurred

1. Dehusking charges per 1000 nuts
2. Drying charges for copra (per 1000 nuts equivalent)

a) Approximate number of hours of work involved

b) Wage payment (including imputed)

c) Other charges, if any (specify)

3. Deshelling charges per 1000 nuts

4. Handling and transportation charges of coconuts from farmers house to buyers premises.

a) Handling charges per 1000 nuts

b) Transportation charges per 1000 nuts

c) Mode of Transport

d) Distance to the buyers premises

5. Handling and transportion charges of copra from copra trader to Oil Mill/Market

a) Handling charges per quintal at own premises

b) Transportation charges per quintal

c) Mode of transportation

d) Handling charges at the other end

e) Distance to the Oil Mill/Market

6. Milling charges

a) Per quintal of copra

7. Handling and Transporting charges of oil
   a) Handling charges per quintal at own premises
   b) Transportation charges per quintal
   c) Mode of transportation
   d) Handling charges at the other end
   e) Distance to the market

8. Brokerage (specify rate)
9. Commission (specify rate)
10. Market cess (specify rate)
11. Licence fee (specify rate)
12. Cost of packing materials
13. i) For copra and cake
      a) Number of gunny bags used
      b) Price per gunny bag of the type used
      c) Average life of gunny bags.

    ii) For Oil
      a) Number of tins used
      b) Price per tin

APPENDIX - III

Interview schedule for Oil Millers

Name of the investigator :

Date of interview :

I. Identification

1. Name of the Miller :
2. Address :
3. Actual or approximate location of the mill :

II. Particulars of the mill

1. Year of establishment :
2. Nature of organization (whether sole proprietor, partnership, private limited, public limited, Govt.owned or Co-operative)
3. Type of Milling equipments used:
4. Cost of machinery equipments:

Particulars	Initial cost	Book value
1.		
2.		
3.		
4.		
5. Installed crushing capacity		
6. Quantity crushed during the previous year.		
a) Own		
b) on hire		
c) Rate of hire		

7. Permanent labourers employed

Designation	No.	Salary per year

8. Casual labourers employed

Designation	No.of wage rate	No.of days employed last year

9. Cost of fuel and Lubricants used last year.

10. Tax rate

11. Any other cost

12. Monthly details of Copra, oil cake and oil

		Medam 1158	Edavam	Mithunam	Karkidakam	Chingam 1159	Kanni	Thulam	Vrishchikam	Dhanu	Makaram	Kumbam	Meenam	Total 1159-60
1. Copra brought	Qunty.													
	Price													
2. Oil produced	Qunty.													
	Price													
3. Oil cake produced	Qunty.													
	Price													
4. Oil sold	Qunty.													
	Price													
5. Oil cake sold	Qunty.													
	Price													

13. Marketing costs incurred per tonne of oil and oil cake	Oil	Oil cake
a) Handling charges		
b) Transportation charges		
c) Market cess		
d) Brokerage/commission		
e) Any other cost (specify)		
f) Distance to the market		

14. Details of other business, if any done by the firm in addition to oil milling (Also indicate turn over during the past one year)

APPENDIX - IV. Monthly prices of coconut oil (per quintal) at Calicut, for the period 1976-'84

Month	1976	1977	1978	1979	1980	1981	1982	1983	1984
1	2	3	4	5	6	7	8	9	10
January	799.00	1290.00	1160.00	1098.75	1272.50	1662.00	1229.00	1918.75	2930.00
February	743.75	1210.00	1095.00	1033.75	1328.00	1572.50	1190.00	1718.75	3108.00
March	726.25	996.25	1076.00	1032.00	1218.75	1360.00	1150.00	1520.00	2988.00
April	802.50	991.00	1086.25	1012.50	1302.50	1430.00	1125.00	1695.00	3106.00
May	761.25	995.00	1095.00	986.25	1370.00	1358.75	1173.75	1757.50	3143.00
June	768.75	937.50	1183.00	1088.00	1496.25	1390.00	1433.75	1881.25	3555.00
July	871.00	980.00	1180.00	1161.25	1595.00	1371.00	1399.00	1998.00	3537.00
August	878.75	980.00	1183.75	1220.00	1594.00	1472.50	1407.50	2147.50	3318.00
September	1061.25	1005.00	1301.00	1253.75	1622.50	1365.00	1488.75	2280.00	3468.00
October	1159.00	1078.75	1277.50	1235.00	1709.00	1321.00	1605.00	2472.50	3512.00
November	1263.75	1190.00	1283.75	1321.00	1822.50	1297.50	1797.50	2652.50	3430.00
December	1336.25	1212.00	1161.00	1268.75	1673.75	1250.00	1825.00	2743.60	3437.00

MARKETING OF COCONUTS IN CALICUT DISTRICT - AN ECONOMIC INVESTIGATION

By

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ABSTRACT OF A THESIS

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ABSTRACT

The present study on marketing of coconuts in Calicut district done in 1985 used the method of multistage stratified random sampling. Six Panchayats were randomly selected and from these, one ward each was again randomly selected. Lists of coconut growers were prepared for each ward and the growers were classified into four on the basis of land holding size. Twenty-five growers were selected from each ward, the number from each strata being roughly in proportion to the total number of bearing trees. Tabular method was the main analytical tool for data interpretation. Apart from this, correlation coefficients were calculated to estimate degree of interrelationship among various market prices and the method of twelve month moving averages was used to compute seasonal indices in respect of coconut oil prices. For working out the marketing margins, a variant of the concurrent method was used.

It was seen that the average size of land holding was very low, being 0.23 hectare. As much as 70.53 per cent of the gross cropped area was occupied by

coconuts. Agriculture was mostly combined with other activities. Farm sales of coconuts was the main method of sale adopted by sample farmers mainly due to the convenience and advances received. Mature nuts were harvested by the farmers who sold it to copra makers in the viscinity as such, who converted it to copra, by sun drying as well as smoke drying and sold it to oil mills at Calicut who sold it to retailers, which was identified as the main marketing channel. The ruling wholesale market rates for copra and oil were the main criteria for price determination at farmers level.

The proportion of marketed surplus varied directly with size, ranging from 30.46 per cent to 81.68 per cent among the different size groups.

Structural characteristics of the market at the farmer level did not indicate any possibility of conduct which was unfavourable to the farmers.

Marketing margins were worked out using the prices received by farmers in the Malayalam month of Meenam (15th March to 15th April) from the sale of nuts and the corresponding retail prices of oil in Calicut and wholesale prices of oil in Bombay. Farmers' share was 76.48 per cent of total realization from different products at wholesale price.

On an average the total marketing costs came to Rs.29.92 (for 100 nuts and equivalent quantity of products) from copra maker to the retailer of oil at Calicut market, accounting to 9.98 per cent and 9.38 per cent of the average realization from sale of different products at wholesale and retail prices of oil respectively. The total marketing margins came to 23.52 per cent and 28.14 per cent respectively at the retail stage of oil and wholesale stage of oil. The net margin of oil millers constituted 1.21 per cent of total realization from all products at wholesale prices and the same was 1.36 per cent of their purchase price of copra. Net margins of retailers worked out to 6.77 per cent of their buying price of oil.

There was no price discrimination against the very small farmers. The average prices received for nuts was almost equal in all size classes.

On sale to Bombay the costs of millers averaged Rs.18.02 for oil equivalent of 100 nuts, their net margin being 6.69 per cent of total realization from wholesale price of oil in Bombay together with the wholesale prices in Calicut for the other products.

Correlation coefficients of monthly prices of coconut in villages and Calicut market were found to be very high indicating that primary markets and the terminal market was high integrated. Spatial price differences of coconuts between villages on the one hand and Calicut market on the other were not significant.

Seasonality in production was seen concentrated in the peak months of the Malayalam year, namely, Makaram, Medam and Meenam. Seasonality was observed to be more pronounced in the monthly sales of coconuts, based on the data obtained from sample farmers. The pattern of seasonal price movements revealed that the marketing system cannot be considered to have performed efficiently.

The Corporation's role was seen as rather insignificant.