A STUDY ON THE ROLE OF CO-OPERATIVE MARKETING AGENCIES IN THE MARKETING OF COCONUT IN KERALA

Thesis
Submitted to the University of Calicut
for the award of the Degree of

Doctor of Philosophy
in Commerce

By

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CERTIFICATE

This is to certify that this thesis entitled "**A Study on the Role of Co-operative Marketing Agencies in the Marketing of Coconut in Kerala**" is prepared by **Ayoob. C. P.** under my guidance and supervision for the award of the Degree of Doctor of Philosophy in Commerce.

He is allowed to submit this thesis to the University.

Dr. K. B. PAVITHRAN

DECLARATION

I, AYOOB, C.P do here by declare that the thesis entitled "**A STUDY ON THE ROLE OF CO-OPERATIVE MARKETING AGENCIES IN THE MARKETING OF COCONUT IN KERALA**" is a bonafide record of research work done by me. I also declare that this has not been previously formed the basis for the award of any degree, diploma, associationship, fellowship other similar title or recognition.

Calicut University
Dated: 12-4-04

AYOOB, C. P.

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AYOOB, C.P

CONTENTS

ABBREVIATIONS USED IN THE STUDY

1 PACS – Primary Agricultural Co-operative Societies

2 SCB – Service Co-operative Barks

3 NAFED – National Agricultural Co-operative Marketing Federation of India Limited.

4 MARKETFED – Kerala State Co-operative Marketing Federation.

5 KERAFED – The Kerala Kera Karshaka Co-operative Federation Ltd

6 CDB – Coconut Development Board

7 NCDC – National Co-operative Development Corporation

8 APCC – Asian Pacific Coconut Community

9 PSS – Price Support Scheme

10 MSP – Minimum Support Price

11 CWC – Central Warehousing Corporation

12 SWC – State Warehousing Corporation

13 FAQ – Fair Average Quality

14 M.T. – Metric Tonne

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INTRODUCTION

Indian economy is predominantly agrarian and agriculture forms an important basis for its economic structure. Apart from providing food for the millions of Indian population, agricultural sector provides 64 per cent of the labour force, contributes nearly 27.4 per cent of Gross Domestic Product and accounts for about 18 per cent of the total value of the country's exports[1].

Agriculture crops can be broadly divided into two categories: food crops and non-food crops. Kerala is a major contributor of the commercial crops in India and due to its historical and climatic reasons the state has developed commercial agriculture rather than food crops. The state has a tremendous record of production and productivity of commercial crops. Even though Kerala is leading in the production of commercial crops, use of these crops is mainly concentrated outside Kerala, either outside Kerala state or in the foreign market. So the price of commercial crops cultivated in Kerala is usually determined by persons and factors situated outside Kerala. The production and productivity of commercial crops of Kerala is normally affected by abnormal fluctuation in the prices of these crops. This happens due to the inefficient marketing structure for the commercial crops. So the marketing support to these commercial crops is very important. Major farm commodities produced in the state are disposed either as industrial raw materials (coconut, rubber, cocoa etc.) or for export (pepper, cardamom, coffee, tea, marine products etc,). The prices of these commodities are subjected to the vicissituatedes of the national and international market over which the producers of Kerala can exert very little influence. Further monopsonic conditions (few buyers and large number of sellers) prevail in these markets. Infrastructure support built upon a community basis would

help empowering the small farmers to transact with adequate market strength[2].

Agriculture is the major means of livelihood security for the rural population of Kerala. It continues to be the most important and single largest sector of the economy accounting for 1/3rd of the State's income. The performance of the sector in the recent past has presented mixed trends. The low growth rate along with the fluctuating trends in performance brings out the vulnerability and weak setting of the Kerala farm front. The agriculture sector of the state can acquire the required resilience only when favoured by a strong infrastructure. Kerala has a unique cropping pattern. It accounts for 92 percent of India's Rubber, 43 percent of Coconut, 71 percent of Cocoa and 75 percent of Arecanut[3]. Among these, Coconut plays an important role in the economy of Kerala in general and that of the Coconut growers in particular, because most of the coconut growers have tiny holdings and they depend on coconut for their livelihood. Even though the state holds virtual monopoly in the production of coconut the marketing facilities available for this is very few and it is facing severe competition in the domestic as well as global market.

There are three entities involved in the marketing system - the producer, the consumer and the middlemen. Each of these has his own interest which often conflicts with the interests of others. The producer, after making a lot of investment in the form of money, labour and efforts would naturally look forward to getting the largest possible return for his produce. The consumer will always try for the product which fulfils his wants and which must be cheap and best. Similarly no products can avoid but only restrict intermediaries in the process of marketing. An efficient marketing system should aim at balancing the conflicting interests of these three parties in such a way that each entity gets a fair deal.

While marketing agriculture produce, the Indian farmers get only a small portion of the value of the produce. A major part of the value is eaten by the middlemen or money-lender. So the position of agricultural marketing is deplorable because the Indian farmers are very poor, illiterate and ignorant. The Government has taken various steps to improve the conditions of agricultural marketing. The need for organizational innovations in the form of 'Co-operatives' in agriculture was realized during the last century. Co-operative marketing and processing societies were started to market the agricultural goods of the farmers. Co-operative marketing would assure reasonable prices and remove all exploitation of the farmers.

Co-operative Agricultural Marketing

Though the production of agricultural commodities in our country has significantly increased, thanks to the Green revolution of the mid sixties and the advanced technologies of the following decades, the benefits are not passed on to the farmers. In spite of increased yield and production, farmers are still left in the lurch. Most of the major ills in the economy could be attributed to the absence of an orderly marketing arrangement for agricultural produce. Biological natures, seasonality, time lag involved in production process, perishability and bulkiness of agricultural commodities have kept the farmer in a weaker position. All India Rural Credit Survey Committee reported that, "Often enough the cultivators position is that of having to bargain if he can, with some one who commands the money, commands the credit, commands the market and commands the transport"[4].

Because of the weak position of the farmers most of the marketing functions are usually in the hands of intermediaries. There is a long chain of intermediaries between the producer and consumer which often takes the lion's share of the consumer rupee. Various sorts of malpractices and

speculation are resorted to by these intermediaries. In 1928 the Royal Commission on Agriculture referred to these malpractices as "nothing less than theft". The profit motive on the part of the middlemen leads to price manipulation and the consequent fluctuation of prices[5].

The benefit of the technological breakthrough in agricultural production could be passed on to the farmers only by providing an efficient marketing system for agricultural produce.

Describing the importance of agricultural marketing, the Marketing Committee of the United Nations Conference on Food and Agriculture has rightly pointed out that "Marketing is the crux of the whole food and agriculture problem. It would be useless to increase the output of food, it would be equally futile to set up optimum standards of nutrition, unless means could be found to move food from the producer to the consumer at a price which represents a fair remuneration to the producer and is within the consumer's ability to pay". In India, the importance of an efficient marketing system as a vital link between the farmer and the consumer was recognized way back in 1928 by the Royal Commission on Agriculture.

Since then various forms of interventions were made by the government in organizing agricultural marketing by the adoption of various administrative and legislative measures. Encouragement of "Cooperative marketing" is one such form of government intervention. It has been recognized that the cooperative form of organization can play a significant and predominant role in improving the present defective system of agricultural marketing[6].

The broad aim of cooperative marketing societies is to strengthen the bargaining capacity of the cultivator so as to secure him better price, to eliminate the superfluous middlemen, to provide him needed finance, to

persuade him to grow better quality of produce and to stabilize price by an orderly and judicious supply of commodities in the market.

Various efforts have been made to expand the network of cooperative marketing societies in the country. The recommendations of the Cooperative planning Committee (1945) to canalize at least 25 per cent of the marketable surplus of agricultural produce through cooperative marketing organization within ten years was seldom enforced. •All India Rural Credit Survey Committee observed that out of 75 districts selected for survey, only 12 districts reported any sales through cooperative organization. Of these 12 districts, only five reported sales of produce through cooperatives exceeding one per cent of total sales through all agencies[7]. The movement was geared up after the report of the survey committee which recommended the establishment of primary marketing societies in all the important markets.

Need for Organized Marketing for Coconut

One of the peculiar features of the Kerala's coconut sector is that it is cultivated in homestead land and most of the growers are tiny or marginal farmers. The coconut cultivation is also carried out in all the districts and in all parts of the districts except some hill areas. So the marketable surplus of the growers are small in quantity and it is not economical for them to bring the produce to the main market which is usually far from their place and moreover, in Kerala there is no well set up market for raw coconut. Coconut is trading as copra in Kerala. This also prevents the growers to get good price for their produce and increase the difficulties. These deficiencies of the coconut growers are exploited by the middlemen and they are taking a considerable part of the value of the produce from the growers. In almost all parts of the state these types of middle men are being employed for collecting the marketable surplus of the tiny holders as raw coconut and they are converting the collected coconut into copra.

Coconut marketing in Kerala is unorganized. An organized coconut marketing system gives certain advantages to the producers such as low assembling and transportation cost, prompt and regular payment, rationalized price structure etc., as it is mentioned by The Royal Commission on Agriculture in 1924 that "the defects and chaotic conditions, prevailing in the markets for agriculture goods, could be removed only by the establishment of properly regulated markets. The over all aim of establishing the regulated market is, to give solution to, and remove the defects which are clear-cut with our marketing system"[8]. The organized marketing system also provides an assured and stable market out-let by developing product lines. Therefore, creation of a sound organizational structure that will provide remunerative market for coconuts produced in the villages throughout the year is the best method to stabilize the price of the coconut and to motivate farmers to increase production and thereby earn increased income.

Importance of the study

Compared with the national level figures, the size of area under coconut cultivation and volume of production of coconut in Kerala during the last decades are much higher, but the share of Kerala towards these two characters shows a declining trend.

The coconut is an important source of cash income supporting a large farming community accounting for nearly 15 percent of the state income and 35 percent of the agricultural income during the year 2000. The state registered an annual growth rate of 5 percent, starting from 4641 million nuts in 1991-92 and ending with a record production of 5496 million nuts in 2000-01. Similarly the productivity increased from 5377 nuts per hector to 5670 nuts per hector[9]. Despite this impressive record, the full benefit of

increased production and productivity could not be taken because of the unstable prices and exploitation of the middlemen throughout the period.

In order to remove these unfavourable conditions in the coconut sector, the government had made policies to organise coconut growers on co-operative lines.

The main agencies functioning in the cooperative sector for marketing of coconut are Kerala State Cooperative Marketing Federation (Marketfed), Kerala Kerakarshaka Sahakarana Federation (Kerafed) and a number of Primary Agricultural Co-operative Societies (PACS) and Service Co-operative Banks (SCB). The general Marketing Federation is dealing large number of items like copra, coconut oil, etc., Kerafed is engaged in the procurement and marketing of coconut and coconut products and the PACS are procuring coconut and copra from tiny holders and marketing them.

Even though cooperative agencies are operating in the Agricultural products markets of Kerala, they have to gain effective control on the market forces. The available marketing agencies are also not entering into the market at the right time. In most of the cases, these agencies are not coming to the help of growers, and so they are reluctant to supply their products. The private agencies and middlemen exploit these situation and they bag a major portion of earnings of the real growers.

So, the study of the problems of grower members and workings of the marketing agencies may help to improve the conditions in total. The main purpose of this study is to examine whether the cooperative movement can rightly be described as a panacea for the ills of the coconut sector in Kerala and can provide fair deal to the growers by way of reasonable return to their investment without creating much hardship to the consumers

Statement of the Problem

The importance of 'coconut' in the Kerala state needs no comments as the name of the state Kerala itself implies it is the land of 'Keram', the Malayalam word of coconut palm. Since the cultivation of these crops started from time immemorial and it is cultivated as homestead farming, no methods of scientific cultivation can be promoted for this crop in the state as it is done in other major coconut producing states, which is why the coconut productivity of Kerala is much lesser than the national average.

Since the yield gives livelihood to the millions of people in Kerala, its cultivation, production, productivity, processing, marketing etc., need special attention from the government. Since the formation of coconut development Board, the area under cultivation of coconut in the state has increased to a greater extent and the productivity has also increased slightly. But this will not give any benefit to the growers, because the government hasn't taken any better steps to market this increased production of coconut. The most important problem of the coconut cultivation is that it is not giving reasonable return to the cultivators. The price of the coconut in the market is not stable. The coconut growers have been experiencing abnormal fall and rise in the price of coconut through out the year. In this situation nobody can predict the price of coconut in the market. The price of coconut is always influenced by the coconut oil. It is paradoxical that even though Kerala is the leading producer of coconut; it has no single large unit of coconut industry in the nature of producing newly developed coconut diversification product.

For the last two to three years the coconut growers in Kerala have experienced severe setback from the crops. The price of coconut have slashed to an all time low and that too in the period when the growers fight for the coconut cultivation due to the attack of new pests "Mandari". Production cost of coconut is high in Kerala due to high labour cost,

increased expense for manure etc. According to the Commission for Agricultural Cost and Prices the production cost of coconut in Kerala is Rs. 3.73 in December 2000 but at the same time it is Rs. 2.52 in Karnataka. During this period the price of coconut was decreased to the minimum of Rs. 2. All these problems leads the farmers tended to neglect the crop and skip operations like irrigation and manuring of trees, the impact of this would be known only after a few years. So a reasonable price and its stability for coconut and copra is needed to encourage continued investment in the crop, which was perennial with long period of gestation[10].

In Kerala state from where more than 95 percent of the total supplies of milling copra in the country emanates, the participation of coconut growers in copra manufacture is quite negligible with the result that primary processing is controlled by a large number of middlemen[11]. This situation has developed mainly because of the fact that majority of the coconut growers being small and marginal farmers, the harvested produce at a time at the disposal of each farmer will not be adequate enough to justify further processing at the farm level. They are, therefore, compelled to dispose of the harvested produce every time to middlemen processors of the respective villages to whom the farmers are invariably indebted. As such the farmers do not receive the benefits of price support measures with copra as the base.

Scope and Coverage of the Study

The study covers the entire state of Kerala. The co-operative marketing systems in Kerala follows two tier system, primary marketing societies in the village level and the state marketing federation at the state level. The primary coconut marketing societies are affiliated to the two apex federations namely, the Marketfed and the Kerafed. There are about 115 general purpose marketing cooperative societies and more than 1500

PACS/SCB with the objectives in their bye-laws for undertaking marketing and processing activities of all agricultural commodities including coconut. Out of this only a limited number of societies are doing coconut trading and moreover most of the Service Cooperative Banks (SCBs)undertakes coconut trading only when the coconut is procured under Minimum Support Price. So the scope of this study is confined to the primary level marketing societies, as they alone have the direct link with the coconut grower members whose problems have to be analyzed and examined. All the input service is routed through the primary societies and the marketing of surplus produce is also done by them. However, it is difficult to analyze the impact of each activity separately. An attempt has therefore been made to analyze the impact of these activities on the coconut producers in the form of marketing of surplus produce, marketing channels preferred, and inefficiencies in the coconut co-operative marketing structure and their problems in marketing. The study also attempts to find out the efficiency of the co-operative societies which are engaged in the coconut marketing. The efficiency assessment is confined to sample societies only. Empirical relationship among the efficiency of the societies and the impact on grower members is also measured in the study.

Since the study is confined to the role of primary co-operative marketing societies in the coconut marketing, the problems of coconut growers studied is also confined to the coconut growers who supplied coconut to such societies i.e. coconut grower members.

Coconut trading in Kerala is undertaken in two forms, either as raw coconut or as copra. Growers are selling their produce in these two forms. So the study has taken into consider both the 'raw coconut' and 'copra' transactions and these two terms are using interchangeably through out the study, which have the same meaning.

Objectives of the study

The main objectives of the study are as follows:

1. To examine the present marketing practices of coconut in Kerala.
2. To identify the factors influencing the efficiency and analyse the efficiency of coconut marketing co-operative societies in Kerala.
3. To examine the extent to which the cooperative marketing agencies have succeeded in regulating the coconut marketing.
4. To identify the market share of state level marketing societies and primary level marketing societies in the coconut market in Kerala.
5. To identify the problems faced by the marketing societies in the procurement, storing and marketing of coconut.
6. To identify the problems faced by the coconut grower members in marketing their produce through the cooperative marketing agencies.
7. To study the attitude of the coconut grower members towards the coconut marketing societies.

Methodology

The study is designed as an empirical one based on survey method. Throughout the study attempt is being made to arrive at the conclusion with the help of inductive and deductive methods. Historical data and statistical information regarding the present position of the industry have been collected through primary and secondary statistics.

Collection of data

Secondary data:- the secondary data used for the study have been obtained from:

1. Annual reports of the Ministry of Agriculture and Cooperation, Government of India.

2. Statistical statements relating to the Cooperative Movement in India published by the National Bank for Agriculture and Rural Development,
3. Statistics for planning by the Directorate of Economics and Statistics, Trivandrum
4. Data Book on Agriculture - 2000 published by Agriculture Division, State Planning Board, Trivandrum.
5. Plan documents for both central and state Government
6. Reserve Bank of India Publications.
7. Kerala 'Economic Review' by the state planning board, Trivandrum.
8. Journals, periodicals etc., dealing with the subject.
9. Documents, periodicals, Books etc., published by the Coconut Development Board, Cochin
10. Various marketing reports and publications of the Directorate of Marketing and Inspection, Ministry of Food and Agriculture, Government of India.
11. Annual Reports of the 'Kerafed' and 'Marketfed'.

Primary data

The primary data required for the study are collected from the cooperative societies dealing with the procurement of copra / coconut and from the coconut growers who supply coconut to these societies. Necessary details have also been collected by holding discussions with various officials of the Kerafed, Marketfed, Nafed, Secretaries and presidents of the various cooperative societies, Managers of the cooperative societies, large scale growers etc., . Discussions are also held with the authorities connected with the district administration, village leaders and academic experts in the field.

Sampling design

As the population to be covered is uniform and spread over different parts of the state, a representative sample of coconut cooperative societies and coconut grower members are taken from the population for the collection of primary data. For the purpose of the selection of sample societies and coconut grower members, a multi stage random sampling technique is used. Since the study is mainly concentrated in the cooperative marketing of coconut/copra and attitude of grower members towards the societies, the sample grower members are selected from the population of growers who are supplying copra to the societies

Selection of Districts

As the first stage, in the sample selection, the state is divided into three regions on geographical basis. The Southern Region includes the four southern districts of Trivandrum, Quilon, Pathanamthitta and Alleppey. Central Region includes the districts of Kottayam, Idukky, Eranakulam and Trichur. The Northern region covers the districts of Palaghat, Malappuram, Kozhikode, Waynad, Kannur and Kasargode. From each of these three regions the largest coconut producing district is selected as the first stage sample. Thus Trivandrum district from the Southern Region, Trichur district from the Central Region and Kozhikode district from the Northern Region emerged as samples. These three districts viz, Trivandrum, Trichur and Kozhikode from three regions contributes 9.3, 10.5 and 18 percent respectively towards the state's total production of coconut ie, 38 per cent of the total production and similarly Trivandrum district contributes 35 percent of the Southern region's production, Trichur districts contributes 47 percent of the Central region's production and Kozhikode districts contributes 35

percent of the Northern region's production. So these three districts can represent as sample districts for selecting co-operative marketing societies and coconut grower members.

Selection of coconut cooperative societies

There are 115 General purpose Marketing Co-operative societies and more than 1500 PACS/SCB in the state with the objectives in their bye-laws for undertaking marketing and processing activities of all agricultural commodities including coconut. Out of the 1500 PACS/SCBs, 898 are affiliated to the apex Co-operative Federation set up for the coconut marketing activities. Kerafed and Marketfed are the two state level federations authorized to undertake coconut procurement in the Kerala state. Most of the primary agricultural co-operative societies (PACS), Service Co-operative Banks (SCBs) and Agricultural produce marketing co-operative societies which undertake coconut marketing in one or the other ways are affiliated to any one or both of the federations mentioned above. So the Kerafed and Marketfed are the affiliating bodies of the primary co-operative societies with regard to the coconut marketing. The Service co-operative Banks and PACS are working almost like agents for procuring coconut or copra for their apex bodies. Only very few numbers are doing processing and marketing activities. Similarly some of the agricultural produce marketing co-operatives are doing processing and marketing activities of coconut and the rest are doing only procurement of coconut for the apex bodies. The co-operative societies whether it is SCB, PACS or marketing societies which are undertaking coconut marketing in any of the nature mentioned above are referred to as coconut marketing cooperative societies for the purpose of this study. Any one of the activities like raw coconut procurement, copra procurement, primary processing of coconut

i.e. raw coconut to copra, secondary processing of coconut i.e. copra to other finished product and marketing of coconut, copra and other coconut products will be termed coconut marketing co-operative in this study.

So the population of coconut marketing societies consists of the societies affiliated to Kerafed, Marketfed and both the apex bodies and samples are selected from this.

Out of the total PACs, SCBs and General purpose marketing societies, only 205 co-operative societies are undertaking active coconut marketing activities. Therefore, the total population of the entire study will be around 205 co-operative institutions. Similarly the coconut marketing cooperatives are spread more or less evenly in three regions, so ten societies from each region was selected as sample, which will constitute around 15 % of the total population of active coconut marketing co-operatives. This also gives an overall picture of the activities of coconut marketing societies in Kerala. While selecting coconut marketing cooperatives, care had been taken to give adequate representation to the Kerafed and Marketfed.

Out of the active coconut marketing co-operatives, 24 societies are in Thiruvananthapuram district, 27 societies in Thrissur district and 30 in the Kozhikode district. From each district selected, 10 societies are selected at random. This selection is made from the list of societies during 2000-'01 obtained from the Kerafed and Marketfed. Thus, altogether 30 societies - 10 societies from Thiruvananthapuram district, 10 societies from Thrissur district and 10 societies from Kozhikode district - are chosen for the study. The details of the population and the samples selected for the study are depicted in the Tables 0.1 and 0.2 given below.

Table 0.1: Sample Design

Sl. No.	Region	Districts Selected	Number of Respondents Selected				
			Coconut Marketing Cooperatives(Affiliation)				Coconut Grower members
			Kerafed	Marketfed	Both	Total	
1.	North	Calicut	6	2	2	10	150
2.	Central	Trichur	6	1	3	10	150
3	South	Trivandrum	6	3	1	10	150
Total			18	6	6	30	450

Table 0.2: Population (Active Coconut Marketing Cooperatives)

Sl.No	Region	Number of Co-operatives undertaking Coconut Marketing			
		Kerafed	Marketfed	Both	Total
1.	North	46	10	13	69
2.	Central	38	9	20	67
3.	South	39	22	8	69
	Total	123	41	41	205

Selection of Coconut Grower members

The selection of coconut grower members is made from the list of grower members who have supplied coconut/copra to the selected sample societies. Fifteen grower members from each sample societies are selected at random. So a total of 450 growers are selected for the study. 150 growers from Thiruvananthapuram district, 150 growers from Thrissur district and 150 growers from Kozhikode district

Field Work and Data Collection Tools

Field survey was conducted to collect primary data from coconut marketing societies and coconut grower members by direct personal interview with the help of structured interview schedules. For this purpose

two sets of interview schedules were prepared, ie, one for the coconut marketing societies and another for coconut grower members. Before finalizing the schedule, care has been given to see that appropriate questions are included so as to elicit relevant information necessary for the study. A pilot survey was also conducted in the Kozhikode district during August 2001. On the basis of the experience from the pilot survey, the interview schedules were revised and redrafted. The schedules used for data collection from societies and coconut grower members are attached as *Appendices I and II.*

Data Analysis

Measurement of Efficiency:

To measure the efficiency of the marketing society "Efficiency Index "is prepared. For the preparation of the index the principles used by the major co-operative institutions like 'Anand Pattern' diary co-operative societies etc. are adopted. However, necessary modification is made to suit the situation in coconut marketing societies in Kerala. Accordingly 12 major indications of the efficiency of the coconut marketing societies are delineated. Details of the operational measures are given in the interview schedule for societies. Information relating to all these indicators of the operational efficiency of the societies is collected from all the sample societies. The collected information is rated on a five point continuum of efficiency structure. The efficiency score of a coconut marketing society ranges from 12 to 60 in this way, the efficiency scores of each society is obtained. Then the mean efficiency score of each society is worked out by aggregating the efficiency scores of each society. This aggregate score is used as "Efficiency Index" for analysis.

With this Efficiency Index, analysis of the efficiency structure of the coconut marketing societies is carried out in:

1. between the region
2. between the societies within the region
3. between the affiliation, and
4. between the societies within the affiliation.

Identification of factors influencing the efficiency

In order to find out the factors influencing the efficiency of the coconut co-operative societies, seven independent factors which are likely to affect the efficiency of coconut co-operatives are drawn from the available literature, these independent factors are listed below:

1. Input supply
2. Infrastructure facilities
3. Link with the apex body
4. Attitude of members
5. Attitude of the management
6. Financial assistance received by the society
7. Government attitude towards coconut co-operatives

The operational workings of these independent variables are measured again by 'Rating Judgment'. For each factor, all the possible statements are constructed and are accordingly rated on a five point continuum. The details of these statements, rating system and scoring pattern are shown in the interview schedule for coconut co-operative societies.

After obtaining the scores for each independent variable, correlation analysis is carried out with the Efficiency Index of each co-operative society. This is done to measure the existing degree of relationship. Influence of Region and Affiliation over the efficiency of coconut marketing co-

operatives is studied to know whether the region in which the coconut marketing societies belong or the apex body to which the coconut marketing societies are affiliated have any influence for their varying degree of efficiency. For the purpose of the study 'Analysis of co-variance Model with seven co-variates are applied'. 'Scheffe Test' is also carried out to see whether there is any interaction between the regions and affiliations over the efficiency structure of the coconut marketing societies.

Measurement of attitude of coconut grower members

The attitudes of coconut grower members towards the coconut marketing co-operatives are studied by identifying the factors which may inspire the coconut growers to supply their marketable surplus to the coconut marketing co-operatives. These factors are identified after discussions with number of coconut growers who had supplied coconut to the marketing societies, the growers who did not supply coconut to the marketing co-operatives, and the officials of the coconut marketing co-operatives and from the available literature. Accordingly, fourteen independent factors which are likely to influence the coconut growers are identified. These independent factors are given below:

1. price paid by the co-operatives
2. Period of Payment:
3. Waiting for Disposal of Coconut
4. Weight and Measurement
5. Allowances taken
6. Nearness to Field:
7. Storage Facility
8. Information and guidance
9. Discrimination
10. Dealings
11. Input Supply
12. Period of Procurement (Regular market)
13. Malpractice
14. Field Procurement

The attitudes of coconut grower members are measured by "Rating Judgement". For each factor, all the possible statements are constructed and are rated on a five point continuum. After obtaining the scores for each independent factor, Chi-square analysis is carried out to measure the significant differences are present among different regions.

Tools of Analysis

For the purpose of data analysis, simple mathematical techniques such as percentages, ratios, averages etc. and statistical techniques like correlation, chi-square, Regression analysis, Scheffe Test etc,.

1) Correlation analysis is used to study:

   a) the correlation between price of coconut and copra.

   b) The relationship between the efficiency structure of coconut marketing co-operatives with that of selected independent factors effecting efficiency.

   For the purpose of correlation the following formula is used.

$$r = \frac{\Sigma dxdy - (\Sigma dx)(\Sigma dy)}{\sqrt{\Sigma dx^2 - \frac{(\Sigma dx)^2}{N}}\sqrt{\Sigma dy^2 - \frac{(\Sigma dy)^2}{N}}}$$

   where

   r = co-efficient of correlation

   dxdy = sum of the products of the deviation of X and Y series from the assumed mean.

   dx = sum of the deviation of x series from the assumed mean

   dy = sum of the deviation of y series from the assumed mean

   N = Number of observation.

2) To analyse the variation of efficiency structure of the coconut marketing co-operative societies between regions and within regions, variance

analysis is applied and accordingly 'F' ratio is found out by using the following equations.

$$\text{F ratio} = \frac{S_1^1}{S_2^2}$$

Where $S_1^2 =$ all $\Sigma_j n_j(\bar{x}_j - \bar{\bar{x}})^2$

$S_2^2 =$ all Σ_j all $\Sigma_i(\bar{x}_{ij} - \bar{x}_j)^2$

Where $\bar{\bar{x}} =$ Grand mean

$\bar{x}_j =$ mean of the j^{th} column

$x_{ij} =$ i^{th} observation of j^{th} column

$n_j =$ number of observations in the j^{th} column

3) To test significance of the correlation coefficient 't' test is applied by using the following formula.

$$t = \frac{r}{\sqrt{1-r^2}} \times \sqrt{n-2}$$

Where

t = calculated 't' value

r = coefficient of correlation

n = number of observations

4) Step-wise regression analysis is used to identify the most important and least important factor influencing the level of efficiency of coconut marketing societies. The procedure adopted for step-wise regression analysis is given in *Appendix III*

5) Scheffe Test is used to identify the influence (interaction) of affiliations and regions simultaneously over the efficiency of societies. The procedure adopted for the application of 'Scheffe Test' is given in *Appendix IV*

6) to measure the attitude of coconut grower members towards the coconut marketing co-operative societies, fourteen variables have been identified and the attitude towards each variable is again measured by using the statistical tool, Chi square test, with the following formula.

$$\chi^2 = \Sigma \frac{(O_{ij} - E_{ij})^2}{E_{ij}}$$

where

χ^2 = Chi square value

O_{ij}= Observed frequency of the cell in the i^{th} row and j^{th} column

E_{ij} = Expected frequency of the cell in the i^{th} row and j^{th} column

7) Garrett's Ranking Technique:

In order to rank the constraints in marketing faced by the coconut marketing co-operatives and coconut farmers, the Garrett's ranking technique** was made use of. The order of merit assigned by the respondents was converted to ranks by using the following formula.

$$\text{Percent Position} = \frac{100(Rij - 0.5)}{Nj}$$

Where, Rij = rank given to i^{th} factor by the j^{th} individual

Nj = number of factors ranked by j^{th} individual

By referring to the Garrett's table, the percent positions estimated were converted into scores and then for each factor, the scores of various respondents were added and the mean values calculated. These mean values are arranged in the descending order. The constraint possessing the highest mean value is considered to be the most important.

** Hendrey E.Garrett and R.S. Wood worth, Statistics in pshychology and Education, (ombay: Viklis, Fetter and Simons Pvt.Ltd,1969), p13

Period of Study

The period kept in view of the intensive study was from the year 1995 to 2000. However, a larger duration has been considered wherever necessary for analysis in a historical perspective. The field study was conducted during the period from February 2000 to February 2003.

Limitations of the study

As limitations are common to almost all studies based on social survey, the present study is also not without them. Some of the important limitations of the present study are as follows.

Firstly, most of the primary data elicited from the respondents are based on the recall method and are therefore subject to normal recall errors. Although efforts have been made to cross check and verify the accuracy of the data, the possibility of some recall errors still remaining cannot entirely be ruled out.

The second limitation relate to the population of grower members. The attitude of grower members towards cooperative marketing is examined by selecting the sample growers at random from the list of growers who were supply coconut to the societies. Only a limited number of coconut growers supply coconut to the marketing societies. Moreover, while preparing the list of grower members, there is a possibility to avoid such the names of those member growers who may opined against them.

Plan of the Study

The study report is presented in seven chapters besides an introduction chapter.

In the INTRODUCTION, the importance of the coconut sector in the economy of Kerala, statement of the problem, objectives of the study, the scope of the study, methodology, data collection, Tools of analysis used,

Period of study, Limitation of the study and the plan of the report are presented.

The First Chapter LITERATURE REVIEW makes an attempt to review the existing theoretical literature on the coconut sector

In the Second Chapter, PRODUCTION PATTERN OF COCONUT, the area, production and productivity of coconut in the world, India and Kerala are depicted in detail.

The Third Chapter, TRADE IN COCONUT, contains the present marketing structure and practices of coconut trading in general and that of Kerala in particular.

The Fourth Chapter, CO-OPERATIVE MARKETING IN COCONUT - I depicts the history of co-operative coconut marketing and the co-operative marketing structure. It also examines the role of state level co-operatives (viz, Marketfed and Kerafed) in the marketing of coconut in Kerala.

The Fifth Chapter, CO-OPERATIVE MARKETING IN COCONUT - II examines the role of primary level co-operative marketing societies in the marketing of coconut in Kerala, their workings and also measure their efficiency level.

The Sixth Chapter 'PROBLEMS OF CO-OPERATIVE MARKETING IN COCONUT' deals with the problems of coconut marketing societies in Kerala and coconut grower members of the societies. It also gives a brief profile of the coconut grower members and their attitude towards the co-operatives.

The Seventh Chapter, SUMMARY OF CONCLUSIONS AND SUGGESTIONS, summarises the discussions and record the findings.

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Chapter I

LITERATURE REVIEW

REVIEW OF RELATED LITERATURE

I LITERATURE REVIEW

Coconut Sector in India is a growing industry. The production of which was confined to limited number of states during the past periods. But now the area and production of coconut is rapidly increasing through out the country and India ranks first in terms of production of coconut during 2000. There are scientific studies relating to the various aspects of cultivation of coconut and other matters have been made in the country. But no serious study of comprehensive nature relating to the marketing, especially marketing of coconut through co-operatives has not yet been conducted in the country except those pertaining to the price and cost effect and other similar matters. Quite recently, some scholars have examined the marketing and price behaviour of coconut.

Likewise some studies relating to the operational aspects of coconut industry such as primary processing, secondary processing, marketing etc, have also been made. Very recently, efforts have been made by some scholars to examine the marketing channels of coconut and their problems. As a whole important research studies that has been conducted in the coconut sector in India is given briefly in the following pages.

Performance Appraisal of Marketing Cooperatives

In a study conducted in Pali district of Rajastan, Kapde (1979)[1] observed that the impact of marketing society in handling agricultural produce, transportation and processing was insignificant. The failure of these societies, could be attributed to considerable degree of their incapability to adopt the important principles of cooperatives such as open membership, democratic control, service at cost, limited return on capital,

promotion of education, active cooperation among cooperatives and loyalty of the society to members and vice-versa.

Kuttappan (1969)[2] studied the working of coconut processing and marketing cooperatives in Kerala. Twenty one societies were studied with respect to membership, share capital, reserves and funds, storage facilities, working capital and processing and marketing operations of the societies. The study conduced that though the overall performance of these societies was not satisfactory, they provided an excellent opportunity for making their impact felt in the rural economy of the state.

Tewari and George (1971)[3] conducted an opinion survey of producer - sellers in Punjab and Haryana regarding facilities provided by cooperative marketing societies as compared to private traders. Opinions were collected on several aspects of marketing such as credit facilities, storage, transportation, supply of consumer goods and farm inputs on credit, provision of services, personal relationships, price differentials, hospitality and prompt payment of sales proceeds, the study concluded that the cooperative marketing societies need to adopt some of the business practices followed by commission agents to attract customers.

While studying the performance of marketing cooperatives, Mathur (1974)[4] identified the following causes for the limited success of these categories of institutions in India, they were, result of official initiatives, target hunting, poor management, from credit societies, unplanned set up, malpractices, unregulated mark etc., undue emphasis on distribution activities and lack of effective supervision, audit, purchase through private traders and bias towards individual members.

Sathyanarayana Rao (1993)[5] evaluated the performance of Areca marketing co-operatives in Shimoga. He pointed out that because of the weak position of the farmers most of the marketing functions are usually

in hands of intermediaries. There is long chain of intermediaries between the produce and consumer which often takes the lion's share of the consumer rupee. Barring a few successful co-operative marketing societies, the working of most of the societies is far from satisfactory. They hardly perform the functions stipulated in the bye-laws. Important marketing functions like transportation, grading, storing, processing, market finance, risk bearing etc, have been neglected. Most of the societies are suffering from ill management, poor financial structure, inadequate technical staff and outdated business practices. The loyalty of the members is rather questionable. Discrepancy among the members is commonly found.

A critical study of business performance and growth of a co-operative marketing society which has already registered good progress in the area of agricultural marketing could be of a great utility to evaluate whether the co-operative marketing societies follow financial management principles and efficiency in achieving their cherished goals. Such an analysis of financial performance, the relationship and trends among various financial components of business of a marketing co-operative would help the management bodies of such co-operative to increase the efficiency and effectiveness of decision making process. In addition it would also serve as a quick to external agencies and the other co-operative marketing societies to improve their performance.

Patel (1976)[6] pointed out that the major factor responsible for the slow progress in cooperative marketing was that many cooperatives preferred to function as commission agents to avoid the trading risk involved in outright purchases. On the other hand, small producers like to sell their produce on outright basis to get ready cash more easily. Another factor was the investment of a large proportion of capital resources of

marketing cooperatives in the distribution of agriculture inputs rather than in marketing of agricultural produce.

Muniramappa (1982)[7] made an exhaustive analysis of the mechanism of linking of credit with marketing in Karnataka for a period of 12 years (ended 1973-74).

The conclusion was that all was not well with the working of cooperative marketing structure though certain suggestion were made to improve further, ultimately it was the government that could play a vital role in this sphere, further enlightened cooperatives, innumerable agriculturists and others involved have to put the marketing cooperatives on the fight track so that they could become important sinews of rural upliftment and institution of financial viability.

In a study on cooperative marketing societies in India, Singh (1984)[8] opined that during the decade 19 69-78 the cooperative made a commendable progress quantitatively but lacked qualitative improvement. The marketing society accounted for less than 10 percent of the marketed surplus of agricultural produce in the country.

While studying the role of cooperatives in marketing of seed potato in Lahul-Spiti district of Himachal Pradish Moorthy (1987)[9] reported that the producers share is lower in case of cooperative channel compared to the channel of commission agents in Lahul. This was due to the announcement of Rs.5 per bag higher as price of potato by commission agents over the price announced by the cooperative sector.

Mahalingam (1992)[10] in his study on Cooperative approach for effective marketing, distribution and post harvest handlings in Salem district of Tamil Nadu, showed that by way of effective marketing function, the society handled about 98 percent marketed surplus of Cotton, 80 percent marketed surplus of Groundnut and about 70 percent

marketed surplus of other agricultural commodities in the district. He maintained that if one leg of cooperative society is the leg of idealism which includes cooperative values and several responsibilities and the other leg should be of good business management if it has to compete successfully, with the private trade which has profit maximization as its major goal.

Ajoy Mathew (1988)[11], in "A Study of the Coconut Economy of Kerala, 1956-1983", analysed the trend in yield during the period 1955-56 to 1982-83 by breaking the period into five year sub-periods. It shows that six out of eleven districts have witnessed decline in coconut production. The share of marketed nuts in total production was found to be about 79%. The number of nuts marketed declined by more than 18% between 1981 and 1983. Analysis of marketed surplus per acre in relation to size of the coconut gardens gave only a weak correlation co-efficient of 0.003. This implies the marketed surplus is uniformly distributed among different size-groups. Most of the farmers who were interviewed in the present study opined that modern practices have no advantage over traditional methods as far as their impact on profits was concerned.

Marketing:

Selvaraj (1987)[12] viewed marketing as the business activities involved in the flow of goods and services from producer to consumer excluding only those activities that would involve in the change of form. This included the rendering of necessary services of assembling, distribution, storage, transportation, grading, financing, market information, risk bearing etc. through which the producer physically would pass on either from field to factory in the shape of raw materials for further production or to the distant market for distribution among the potential consumers.

Agricultural marketing:

Singh (1984)[13] referred marketing produce to a highly complex mechanism. According to him, it composed of a series of operations, processes and agencies involved in the movement of food and raw materials from the farms to final consumers and the effect of such operations on producers and middlemen. These included buying, assembling, processing, packaging, transporting, storing, financing, risk bearing and selling.

Marketing efficiency:

Devadass (1997)[14] defined marketing efficiency as the transfer of goods from producers to consumers are the lowest cost, consistent with the provision of services and it could be measured as the ratio between the money costs and the degree of services.

According to Jasdanwalla[15], marketing may be broadly defined as the effectiveness or competence with which a market structure would perform its designated functions.

Studies on coconut marketing scenario:

Nimal (1994)[16] identified the absence of a guaranteed price for coconut as one of the biggest constraints in coconut sector. Mostly growers were unable to get a reasonable price for their produce due to heavy exploitation by middlemen in the marketing channel. With the setting up of farmer's groups, coconut growers would gain high bargaining power in marketing and this could further be strengthened with the formation of regional organization networks.

Harikumar (1991)[17] said that trade in coconut was essentially monopsonistic in nature with a large number of cultivators selling to only a few village traders, local copra makers and agricultural cooperative

societies and this was the reason for the cultivators not being able to get a good price and in turn had to face violent price fluctuations. He identified three types of coconut purchasers, viz., merchants/traders, copra makers and agencies of wholesale dealers. Only few farmers resorted to the conversion of coconut into copra and selling it to mill owners directly because of their poor economic position and lack of storage facilities. The three types of marketing channels identified were, (I) producer - village trader - consumer (II) producer - agencies of wholesale dealers/local copra makers - wholesale dealers (mills) and (III) Producer - marketing societies - wholesale traders (mills). In channel I, the price spread was 16 per cent of the price received by the producer and 14 per cent of price paid by the consumers. In the channel II, these values were found to be 19 and 16 per cent respectively and in channel III, the values were only six and five per cent respectively. Thus it could be concluded that marketing though channel III i.e., marketing societies was found to be the most favourable to the farmers.

Bavappa (1976)[18] pointed out that international market price of coconut oil was much lower than the internal market price. He said that quality of products, an important consideration in marketing, was not a problem as far as India saw concerned and that any increase in productivity would 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 the state having stepped in and fixed the retail selling price of oil. He opined that cooperative societies could be thought as a panacea to solve the marketing problems along with technological know how and feasibility

Wijesinghe (1988)[19] identified the annual and seasonal fluctuations in coconut production coupled with the year round static demand for coconut consumption as the root cause for the marketing problems in

coconut. He observed that the coconut marketing sector was constituted by dealers - big and small, wholesalers and retailers and the organized sector by dealers and brokers, he also identified the rampant indiscipline in trading activities, delay or default in the delivery of payments, multiplicity of traders and the absence of a regulatory authority as the other main reasons for the marketing problems. In this context, the establishment of an institution affiliated to a trade chamber representing al sections of coconut industry seemed to be of utmost urgency.

Franklin (1982)[20] pointed out that market intelligence on coconut in major coconut growing areas were found to be sketchy and available to only a few people and most copra marketing bodies in foreign bodies in foreign countries were devoid of price stabilization schemes.

Paul (1982)[21] pointed out that the impact of coconut oil import on the oil milling industry in Kerala is very significant. The unexpected import of coconut oil in sizable quantities caused a steep decrease in price of coconut oil in local markets that has given a severe jolt tot the entire economy of Kerala state. With the setting up of a solvent extraction unit at Trichur, 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 on an even kneel, he remarked that it is absolutely necessary to restrain the Central government from pursuing the import of coconut oil in large quantities.

Martin (1982)[22] based on the market study in Solomon Islands and Pacific island countries, pointed out that major changes in the structure of market have occurred in recent years as farmers have switched from copra to coconut oil exports. Coconut oil prices were overall subjected to increasing downward pressure given a constant demand. A critical strategy would 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.

Venkitaraman (1961)[23] opined 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-operatives with godown facilities and copra processing units. Effective linking up of the marketing societies with service societies on one hand and apex marketing societies on the other would ensure an orderly marketing of nuts collected from growers and a better return to growers for their labour.

Natu (1959)[24] observed that forward trading would enable millers, dealers, exporters and industrial consumers to transfer their risk to others who are prepared to assume these risks in the hope of profit. He concluded that efforts should be mainly directed towards evolving a suitable organizational pattern with different interests in the market, strengthening financial markets and evolving procedures to deal emergencies.

Behru, Ghose and Naik (1995)[25] called for higher private investments in establishing suitable coconut based industries which would enable the farmers to sell the produce at a higher price by encouraging them to use monetized inputs in coconut crop. The introduction of integrated horticultural system associated with dependable market support to small and marginal farmers would enable to stabilize the coconut prices. With the establishment of coconut based industries, besides the value addition, gainful employment in the rural sector could also be achieved.

Kuttappan (1969)[26] examined the working of coconut processing and marketing cooperatives in Kerala. the study revealed that inadequate

working capital, lack of coordination among different types of societies, poor organization, wide fluctuations in prices of copra and oil and spread of small producers over wide area were the bottlenecks affecting the marketing efficiency of coconut.

Venkitaraman (1961)[27] said that without news about markets and commodities sold in the markets, a truly competitive market cannot exist. Information about prices existing in several markets and also of costs of operation of similar types of marketing and processing organizations would help farmers to secure of market information for coconut farmers, were (a) the market news service of state department of Agriculture, (b) quarterly bulletins of the Statistics department (c) the coconut journal published by Indian Central Coconut Committee (d) radio and (e) the business itself. The important uses of market information were (a) to decide the best sales output available (b) to break down the monopolistic practices in markets (c) to make better production and marketing plans and (d) to develop suitable agricultural policies.

Ramkumar,R.,(1998)[28] in his study of "An Economic Investigation of Marketing and Price Behaviour - The Case of Coconut and its Products in Kerala State" analysed the various marketing channels prevalent in the state and the their marketing cost. He also studies the price behaviour of coconut and its products. He find out five marketing channels in the state viz, (1) Farmer-Copra maker-Oil miller- Retailer-Consumer, (2) Farmer-Oil miller-Retailer-Consumer, (3) Farmer-Commission agent-Upcountry consumer, (4) Farmer-Co-operative Society-Kerafed-Consumer, (5) Farmer-Consumer. An analysis of the above channels showed that the Channel (4) was the most efficient. The study also showed that the prices of coconut are guded by prices of coconut oil. Thus the fluctuations in coconut oil prices, which are very frequent, effect the prices of coconut.

Studies on marketing channels, marketing efficiency of coconut and its products:

Venkitaraman (1958)[29] in his study of marketing of coconut products in India estimated that producers share in the consumers price was about 60 per cent. He pointed out that the price which the cultivator received for fresh nuts heavily depended on proximity to marketing and copra content of coconut. He suggested the establishment of regulated marketing, multi-purpose cooperatives, marketing societies, warehousing facilities besides the quality improvement of copra.

Suryaprakash, Venkataraman and Raman (1979)[30] in a comparative study of price spreads 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 varied from 5.86 to 7.0 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.

Renuka Nair (1984)[31] in a study on coconut marketing in Calicut District, Kerala State found that all the sample farmers resorted to farm sales of coconuts to local buyers who were copra makers. Only 61 per cent of the total productions were marketed and nearly 32 per cent was used for home consumption. The marketing costs of copra makers ranged from Rs.16.80 to 23.40 for 100 nuts. The costs of millers averaged Rs.9.41 for copra equivalent of 100 nuts. The net margins of copra makers ranged from 11.48 to 14.33 per cent in the total realization from all products. The same for oil millers constituted 1.21 per cent of the total realizations.

Sahu (1995)[32] in his study on coconut marketing in Orissa identified two marketing channels.

(a) Producer - trader - wholesaler - retailer - consumer

(b) Producer - trader - consumer

For working out the marketing efficiency of the two channels, the Shepherds formula was used. In the regulated market, the share of producer in consumer's price was 62.22 per cent. The marketing cost for 1000 coconuts from producers to consumers worked out to Rs.1700 which was 37.78 per cent of price paid by the consumer. The maximum share of price spread went to retailer as profit (15.89 per cent) followed by traders (6.6 per cent) and wholesalers (2.23 per cent). In the unregulated markets, the producers share in consumers' rupee was 68.57 per cent and the price spread was 31.43 per cent of the price paid by the consumer. The maximum share of price spread went to the traders at 24.61 per cent of the consumer's price. A comparison of price spread revealed that in regulated markets the prouder enjoyed 62.22 per cent of consumer's rupee as against 68.57 per cent in the unregulated markets. The marketing efficiency as per the Shepherds formula was calculated to be 1.65 and 2.18 for the regulated and unregulated markets respectively. This was due to the higher number of intermediaries, higher marketing costs and margins in the unregulated market. However, on the whole, marketing efficiency appeared to be very low in both markets due to higher market margin.

Raveendran (1990)[33] in his study on marketing of coconut and its products in Orissa state found that the marketing channels, linking producers and consumers, consisted of intermediaries' viz. village hawkers, village merchants, commission agents / whole sale dealers and retailers within the state. In the case of inter - state trade, it passed from wholesale dealers / commission agents of the state to the wholesale

dealers / commission agents in the other states.

Khan (1972)[34] 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 as compared to small farms, i.e., 93.04 per cent and 78 per cent respectively. Producer's share in consumer's 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 middlemen operated in the marketing channel.

Arshad (1983)[35] evaluated the efficiency of coconut marketing system by small holders in Malaysia and observed that the efficiency suffered from various inefficiencies in the form of imperfection that existed in market structure, practices and performances. Farm level constraints and lack of marketing facilities had resulted in low quality produce which in turn induced the middlemen to indulge in unethical trading practices.

Castro and Alford (1973)[36] in their study on marketing of coconut farm products in the three provinces of Davan found that all farmers in Davan del Norte and Davao Oriental sold their products as copra while in Davao del, 16 per cent was sold as husked nuts. The main market outlet was the town buyers who in turn served as agents to exporters and processors.

Ali, Naik and Mallick (1995)[37] attempted to identify the coconut market channels, to measure the price spread over time and space and to assess the impact of market regulations in coconut marketing in Orissa. He found that four or less number of intermediaries formed the marketing channels of coconut. Among them, village beoparies, traders, wholesalers and retailers were the notable market functionaries. Nearly 82 per cent of coconut farmers sold their produce in the village itself or in local hats.

Village beoparies were largely responsible for assembling coconut in different wholesale markets of the state. The average marketing costs and margins and producer's share in consumer's rupee for coconuts passing through regulated markets accounted to 17.10 per cent, 23.93 per cent and 58.97 per cent respectively whereas for coconuts passing through unregulated markets accounted to 17.62 per cent, 26.92 per cent and 55.46 per cent respectively. It was found that a coconut farmer would save as much as Rs. 3.50 per 100 rupees worth of coconuts, if he sells in the regulated markets.

Raveendran (1984)[38] in his study on the marketing of coconuts in Lakshadweep islands reported that 20 per cent was consumed locally and the remaining processed into copra. Copra was usually transported to mainland before the onset of monsoon in odams and mechanized boats owned by the Lakshadweep Marketing Federation. He observed that Calicut and Mangalore were the important marketing centres for island copra which always fetched a premium price.

Venkitaraman (1961)[39] found that if the farmers themselves could attend to the required processing their share of the consumer's price would bind to be higher. The main reasons for the apathy of farmers towards copra making were that due to several rainy months, sun drying was not possible and drying by kilns was necessary. Absence of proper drying yards and the perishability of copra on exposure were other factors contributing to this. In this context, he opined that the formation of Coconut Growers Co-operatives could be of great help for pooling the produces of small farmers, arranging for processing of nuts into copra, rendering financial aid from the normal sources available to co-operative societies and arranging for storage, transportation and marketing. Besides setting up of regulated markets for coconuts and copra would go a long way in improving the marketing scenario of coconut.

Sathyanathan (1990)[40] in his study of agricultural cooperatives found that only 46 per cent of the farmers sold their produce through co-operative marketing societies and the remaining were found to be selling to rural traders. He observed that the quantity of coconuts transacted by these societies accounted for only 10 per cent of the total marketable surplus, which was very low at all standards.

Studies of price behaviour of coconut and its products

Thampan and Pankajakshan (1976)[41] observed that the big copra milling establishments in India always find outlets in major markets of the state. In the assembling markets, oil was transacted mainly of upcountry markets through brokers or commission agents. They estimated that nearly 35000 tones of oil were marketed from Kerala annually. Important outside markets were Madras, Bombay and Calcutta from where oil ultimately traded through a large number of wholesale and retail outlets to remote villages of the country.

Babu and Sebastian (1996)[42] analyzed the seasonal price behaviour of coconut and its products in Kerala using monthly state average prices. The seasonal price indices were estimated by the ratio of moving average method. The prices of coconut, copra and coconut oil exhibited distinct seasonal variations with a buoyant phase from November to February for coconut and from August to December for copra and coconut oil. The depressed phase was from March to October for coconut and February to June/July for copra and coconut oil. It was found that the seasonal price behaviour of coconut was being influenced by the seasonality in copra and coconut oil prices, the seasonal trough in coconut prices and vice versa, thereby indicating the prevalence of a distorted market in the state to the disadvantage of coconut growers.

Chatterjee (1978)[43] in his study on marketing of green coconuts at Calcutta market observed that approximately three crores of tender nuts would arrive annually at the college street market and a little greater than 50 lakhs in all other markets in 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 Re. per nut on size.

Satheesh Kumar (1994)[44] studied the efficiency of coconut marketing in Kerala through inter and intra market integration. He made use of secondary data of wholesale prices for 21 years commencing from 1969 for seven selected markets. The results of the analysis revealed a high degree of inter and intra market integration. However, relative differences existed in the efficiency of various coconut products of markets. The canonical correlations results showed that the inter markets integration was brought about mainly by the oil prices so that it became the price leader. This implied that those who controlled and manipulated the coconut oil market would succeed in controlling the coconut economy.

Lakshmanachar,(1960)[45], studied the fluctuations of coconut prices and explained that the size and quality of nuts their availability, imports of copra and oil, middlemen and speculators all contributed to the instability of coconut prices. The main reasons for variations in wholesale process were differences in quality and quantity of nuts produced during different periods of the year and the difference in price itself varied in relation to seasonal demand for it by coir industry. Regulation of imports and licensed warehouses were the suggested measures for stabilization.

The conclusion that could be drawn from this review is that, though the cooperatives made a commendable progress quantitatively, they lacked qualitative improvements. Main reasons for the failure of cooperatives were non performance of various functions stipulated in the by-laws, improper management and poor financial structure.

Shanker, (1984)[46], in his study on performance analysis of primary co-operative e marketing societies observed that if profits are too high then the only way is to increase the competition because a persistent positive profit and would show prevalence of market imperfection due to some causes and restoring competition is the real solution. But this is easily said than one. Several institutional innovations have been tried in the past. Regulated marketing, sanitation and grading, warehousing state trading and even monopoly procurement and distribution and co-operative marketing - all with the view to help farmers get better price for their products. Among them co-operative marketing is specially commended, because it avoids exploitation, encourage mutual help, maintain moral standards and above all promoted a feeling of oneness, among those who participate in it voluntarily and in democratic way.

Ramkumar (2001)[47], in his study analyses the costs and margins in coconut marketing analysed the marketing of coconut and its products viz., copra and coconut oil in Kerala. The most important problem identified in marketing was the lack of adequate and fair price for coconut and its products and the fluctuation-annual and seasonal- in the prices. Three major reasons were identified. First, price instability led to a decline in the consumption pattern of coconut and coconut oil among its different users in the industrial and household sectors. Secondly, cheaper imports of coconut oil and substitutes like palm oil depressed the local market prices. Thirdly, the presence of intermediaries in the marketing channels led to a low price realisation to the producers. He analysed the costs and margins in various channels of trade and formulated a composite index of marketing efficiency for each channel.

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Chapter II

PRODUCTION PATTERN

- *ORIGIN*
- *AREA AND DISTRIBUTION*
- *SIZE OF COCONUT HOLDING*
- *COCONUT PROCESSING*
- *COCONUT ECONOMY OF KERALA*

II PRODUCTION PATTERN OF COCONUT

The coconut palm is considered as the tree of life. It is one of the most valuable gifts of nature to mankind. The palm is eulogized as *kalpavriksha*, the all giving tree of the *Tree of Heaven* and its fruit as *Lakshmiphal*, the *Fruit of Wealth*[1] . It is botanically known as *Cocos nuciferaL* and belongs to the natural order *Arecaceae* (palmae), an important member of monocotyledons[2]. It serves as a veritable source of food and drink to millions of people in the tropics, the crop is gaining significance as a fiber crop, beverage and a medicinal crop. Coconut palm is means of food security for large population in the world by providing livelihood, especially in developing countries. In India, more than 10 million people depend upon coconut for their livelihood and are associated with heritage of country.

Origin

The origin of coconut tree is a mystery. It may have come from South America, the nut being carried by sea tides and currents from place to place. There are several theories on the origins of the coconut palm and its subsequent dispersal from the place of its origin to other areas, but none of them is totally acceptable. Conflicting theories and controversial opinions to localize the habitat in the old-world tropics are still rife. While the coconut palm is considered to be of pre historic introduction into the Philippines islands, in Sri Lanka its cultivation dates back to 300 B.C. The preponderance of evidence available is in favour of South East Asia in the old world tropics as the most likely place of origin of the coconut palm. It is however generally believed to have come from the Cocos Islands in the Indian Ocean. It has grown in India for many hundreds of years and is cultivated in all hot damp

regions, particularly low-lying sandy areas near the Sea. Mention of the coconut palm in the post-Vedic literature is a clear indication of its great antiquity in India. So it is a traditional plantation crop grown in India for the last 3000 years and thus possesses the longest recorded history in the country[3].

It was the advent of the colonial powers that changed the face of coconut, once a subsistent crop to a commercial one. Use of coconut oil in the production of soap and margarine in the early 19th century in Europe saw an unprecedented demand for it resulting in large scale planting of coconut in the colonies, some times even under threat of punishment to indigenous people. At the beginning of the 20th century Copra was the king among the oilseeds and was even called "green gold"[4].

Economic Importance

Coconut is unique in all respects among other horticultural crops grown in the country as a source of food, drink, shelter and a variety of raw materials for industrial exploitation. The crop assumes considerable significance in the national economy in view of the rural employment and income generation. Major share of the coconut production in the country is contributed by millions of small and marginal farmers who form the backbone of coconut culture. The economy of the region is closely interlinked with the prospects of the crop wherever coconut is grown. With an area of 1.84 million ha. and production of 12597 million nuts, coconut contributes Rs.7000 crores annually to the GDP. India earns more than 300 cores by way of export of coconut products. Copra, the dried kernel of coconut is the richest source of edible oil and the contribution of the crop to the total edible oil pool in India is around 6 per cent. By-products obtained from coconut such as husk, shell, timber and leaves are utilized for making value added products[5].

More than 10 million people in the country depend on coconut cultivation, processing, marketing and trade related activities. In the coastal tracts most of the people depend on coconut for their sustenance and to many people coconut provides the sole income. Since the coconut garden accommodates most of the fruits and vegetable crops besides live stock, the coconut based farming system satisfies the day to day needs of a family in coastal agro eco-system especially in Kerala. The palm contributes a large quantity of biomass too to satisfy the fuel requirements of an average family. It is reported that 30-40 coconut trees would be sufficient to satisfy the fuel requirement of a small family.

Toddy tapping is very common in Kerala and Goa. Vinegar and jaggery can be made from coconut toddy. Coconut timber is used for various purposes in the construction of houses and making furniture. It is also used in the manufacture of handicraft and curious items.

Social Profile of the Coconut Industry

Coconut palm serves the Indians on varied occasions during their life span. In the use of coconut alone, the Indians share a national culture despite their varied cultural societies. The coconut tree is considered as the tree of heaven and its fruit as fruit of prosperity. Despite its confined distribution demand for coconut is spread through out the country. High demand either for edible or non edible purpose induced people of even non-traditional belts which inspire them to plant at least two or three saplings in their homesteads.

As an auspicious fruit, coconut occupies a very important place in Hindu rituals. Both mature and tender nuts find place in religious ceremonies. As mentioned elsewhere the uses of coconut in pujas as not location specific but prevalent throughout the country. In the social and religious ceremonies coconut with husk or without husk, in odds/or in bunches is a common view. In pujas, marriages, festivals, decorations, etc

coconut and coconut palm parts like spindle leaf and inflorescence are quite inevitable. This is more common in southern states especially of Kerala where no ritual or ceremony is performed without coconut and coconut palm products. Thus coconut satisfies the social and cultural needs of people besides contributing in several other utilities. At the same time coconut provides regular income to farmers[6].

Area and Distribution

Whatever be the origin of coconut is, over the centuries it came to be introduced to many other tropical countries and today it is grown in nearly ninety countries spread over as given in Table 2.1

Table 2.1: Area and Production of Coconut during 1998

Region	Area ('000 ha.)	Production ('000 nuts)
Asia	100,303.00	43,322,563.00
Pacific	678.00	2,288,500.00
Africa	653.00	2,250,875.00
America	558.00	3,319,091.00
Total	102,192.00	51,181,029.00

Source: APCC, 1999

As could be noted Asia dominates the world coconut industry with the biggest producing countries accounting for nearly 85 percent of it in 1998. More than 88 per cent of the area and 87 percent of the production is contributed by 13 APCC countries which include Federated States of Micronesia, Fiji, India, Indonesia, Malaysia, Papua New Guinea, Philippines, Solomon Islands, Sri Lanka, Thailand, Vanuatu, Vietnam and Western Samoa. Even among the APCC countries, four major coconut growing countries, viz, Indonesia, India, Philippines and Sri Lanka, together contributes more than 77 per cent to the total production and area in the world. Recent estimates

indicate that the crop is grown in an area of about 11.84 million hectares with an annual production of 56,390.44 million nuts[7]. Table 2.2 gives the area under and the production of coconut in the major coconut growing countries of the world.

Table 2.2: World Area, Production and Productivity of Coconut (2000-01)

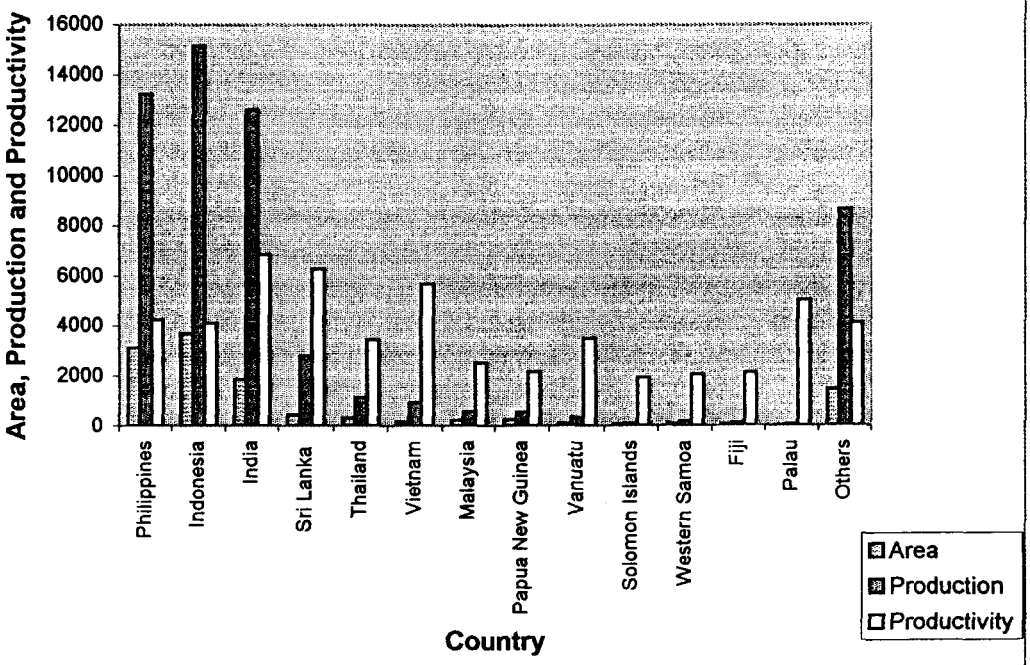
Country	Area		Production		Productivity	
	'000 ha.	(%)	Million nuts	(%)	Nuts/ ha	Index point
Philippines	3120	26.3	13208.0	23.4	4233	1.11
Indonesia	3691	31.2	15160.0	26.9	4107	1.07
India	1840	15.5	12597.0	22.4	6846	1.79
Sri Lanka	442	3.7	2769.0	4.9	6265	1.64
Thailand	326	2.8	1117.0	2.0	3426	0.90
Vietnam	165	1.4	936.0	1.7	5673	1.48
Malaysia	226	1.9	563.5	1.0	2493	0.65
Papua New Guinea	260	2.2	553.0	1.0	2127	0.56
Vanuatu	96	0.8	333.2	0.6	3471	0.91
Solomon Islands	59	0.5	113.0	0.2	1915	0.50
Western Samoa	96	0.8	195.0	0.4	2031	0.53
Fiji	65	0.6	135.5	0.2	2085	0.55
Palau	14	0.1	70.0	0.1	5000	1.31
Other area	1445	12.2	8640.3	15.2	4085	1.07
Total	11845	100.0	56390.5	100.0	3840	1.00

Source: APCC, 2002

India is now occupying premier position in coconut production in the global scenario. From 1995 onwards, India has been catapulted to the position of the largest producer of coconut in the world, ahead of Indonesia and Philippines. But during 2000 the coconut production of India again comes down and she now occupies only third place in the world production of coconut, with a cultivated area of 1840 thousand hectors which formed just 15.5 per cent of the total cultivated area in the world, the production was

12597.3 million nuts, which accounted for 22.4 per cent of the world's production. Indonesia and Philippines share the first and second place in production contributing 15160 MT 13208 MT nuts respectively to the world production (Fig. 2.1).

Fig. 2.1: World-Area, Production and Productivity of Coconut-2001



India is also leading in the productivity of coconut. India is having the productivity of 6846 nuts/ha. from 18.4 lakhs hectors, at the same time the highest producing countries like Indonesia and Philippines have only 4107 nuts and 4233 nuts per hector from 36.9 lakhs hectors and 31.2 lakhs hectors respectively. In 1980s Indian coconut industry experienced serous fluctuations and uncertainty in production and productivity but after 1981, the formation of Coconut Development Board (CDB) helped to boost the production and productivity in the country. But the per capita availability of coconut in India

is as low as 10 nuts per year whereas it is as high as 208 nuts in Philippines, 53 nuts in Indonesia and 124 in Sri Lanka[8].

In India, apart from the population factor, an important reason for this situation is that coconut is not grown in all the states of the country. Coconut is found growing under varying soil and climatic conditions although it is at home in humid tropics having evenly distributed rainfall. Except for subtropics and temperate region coconut is grown in most of the zones which include 19 states and 3 union territories in the country out of 28 states and 7 union territories. In the last two decades coconut area expanded to humid subtropical and peninsular regions and currently it is grown in 1.82 million hectares accounting for 15.5 per cent of the total world area under coconut (Table 2.3).

Table 2.3: Distribution of Coconut in India (2000-01)

Country	Area		Production		Productivity	
	'000 ha.	(%)	Million nuts	(%)	Nuts/ha	Index point
Andhra Pradesh	102.5	5.57	1092.7	8.67	10660	1.56
Assam	20.0	1.14	135.0	1.08	6502	0.95
Goa	25.0	1.36	125.1	0.99	5004	0.73
Karnataka	333.8	18.14	1754.2	13.93	5255	0.77
Kerala	936.3	50.89	5496.0	43.63	5670	0.66
Maharashtra	16.8	0.91	244.4	1.94	14548	2.12
Orissa	17.7	0.96	109.9	0.87	6209	0.91
Tamil Nadu	323.5	17.58	3158.4	25.07	9763	1.43
Tripura	9.1	0.49	7.0	0.06	769	0.11
West Bengal	24.5	1.33	330.5	2.62	13490	1.97
A & N Islands	24.7	1.34	87.2	0.69	3530	0.52
Lakshadweep	2.6	0.15	87.0	0.22	10000	1.46
Pondicherry	2.2	0.12	28.0	0.22	12727	1.86
All India	1839.8	100.0	12597.3	100.0	6847	1.00

Source: Directorate of Economics & Statistics, Ministry of Agriculture, Government of India

There is distinct difference in the pattern of distribution in the country. The major portion of the coconut production in the country comes from the Western Plains and the Ghat region comprising the states of Kerala, Karnataka and Maharashtra followed by the Eastern Coast Plains and hill regions comprising of Andhra Pradesh, Orissa, Tamil Nadu and Pondicherry. Andaman and Nicobar Islands and Lakshadweep and the states of Gujarat are the other traditional coconut areas. Certain tracts of Karnataka and Tamil Nadu and the states of Assam, Tripura, West Bengal, Bihar and Madhya Pradesh are the non-traditional areas where coconut cultivation has made inroads rapidly. In other North Eastern belts like Mizoram, Manipur, Nagaland and Arunachal Pradesh too, introduction of the crop has been successful[9].

Figure 2.2 and 2.3 shows the area and production of coconut the major coconut growing state is Kerala, the Southern tiniest state lying along the west coast. Except in Kerala and a few other small States/Union Territories, coconut was not growing contiguously but was limited to only congenial belts accounting to only an insignificant portion of the total agricultural area. Kerala's contribution to the total area is 50.6%. Other major contributing states are Karnataka, Tamil Nadu and Andhra Pradesh, the three neighboring states. The contribution of these states is in the order of 18.3%, 17.5% and 5.6% respectively thus aggregating the total share of these four major states to 92 per centage. Contribution of other States/Union Territories is only 8 % which include Orissa, Goa, West Bengal and Andaman and Nicobar Islands (Figure 2.2 Area).

Fig. 2.2 Area of Cultivation of Coconut in India

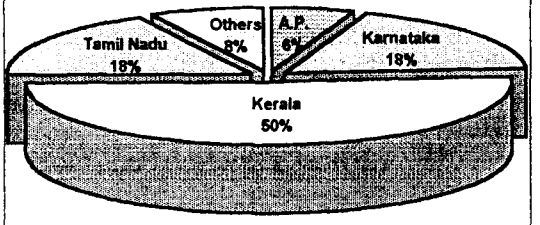
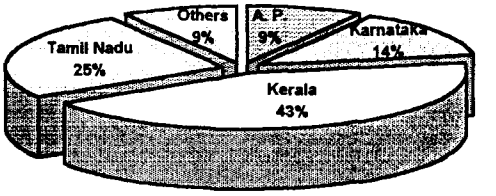
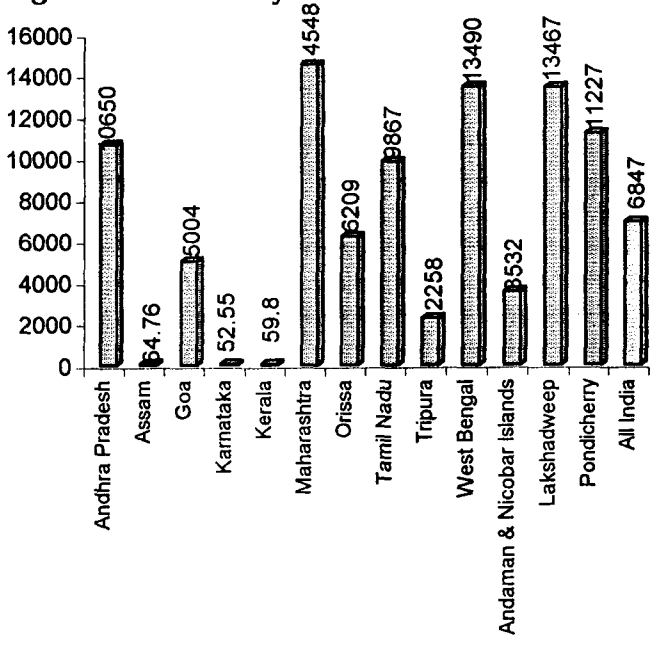


Fig. 2.3 Production of Coconut in India 2001



North Eastern states account for 5.55 per cent. India may take pride for highest productivity of coconut in the world, but there remains a wide gap in potential productivity and actually realized. The average productivity in India is 6847 nuts per hectare (Fig. 2.4) but several coconut plantations in Tamil Nadu and Andhra Pradesh, which are well managed, have a higher productivity ranging from 25000 to 30000 nuts per hector. Thus challenge is to improve productivity which would improve the economic returns to the farmers.

Fig. 2.4 - Productivity of Coconut in India - 2001



Size of Coconut Holding in India

Unlike other commercial crops grown in the country, coconut is essentially a small holder's crop. It is grown mostly in homestead gardens and small holdings. There are about 5 million coconut holdings in the country with 98 per cent of such holdings occupying below two hectares[10]. In Kerala State alone there are about 2.5 million holdings. Details of the size of coconut holdings in the country are given in Table 2.4.

Table 2.4: Size of Coconut Holdings in India

Size of holding (in hectares)	Percentage of holdings of different sizes			
	Kerala	Tamil Nadu	Karnataka	Andhra Pradesh
Less than 0.2	37.1	69.1	52.5	56.5
0.2 ---- 1.0	52.8	26	42.9	41.7
1.0 ---- 2.0	7.9	3.2	3.6	1.8
2.0 and above	2.2	1.7	1.0	

Source: Glimpses of Coconut Industry In India, P.K. Thampan, Coconut Development Board, Kochi, p.3

Coconut Processing

Coconut is an important source of vegetable oil used for both edible and industrial applications. It is estimated that nearly 50 per cent of coconut in India are consumed raw, while the remaining quantity is converted to copra to obtain coconut oil. Coconut meat (kernel), the endosperm of the fruit contains 20 per cent carbohydrate, 36 per cent fat and 4 per cent protein at a moisture content of about 50 per cent. A number of products are derived from coconut of which copra is the most important one. Coconut oil can be extracted either from fresh kernel or from copra. Milled copra yields coconut oil which extensively used for edible and cosmetic purpose, and copra cake is a valuable animal feed. Other products from coconut are the desiccated

coconut, coconut cream, coconut milk powder, shell powder, activated carbon, etc.[11]

Harvesting: Coconut is harvested at varying intervals in a year. The frequency differs in different areas depending upon the yield of the palms. In the West-Cost of India, nuts are harvested 6 to 10 times in an year. In well maintained and high yielding gardens, bunches are produced regularly and harvesting is done once in a month. Coconuts become mature in about 12 months. It is the ripe nut which is the source of major coconut products[12].

Storage and Seasoning: it is a common practice to store seasoned harvested nuts before they are further processed. The advantages of this procedure have been reported as (1) decrease in moisture content, (2) increase in thickness of copra, (3) increase in oil content, (4) greater meat resistance to bacterial slimming while sun drying, (5) easier husking, (6) cleaner and easier shelling, and (7) uniform quality of copra[13].

Husking: Traditionally husking is done manually by skilled workers with the aid of an iron spike driven to the ground. The work calls for skill and is strenuous. Presently CPCRI (Central Plantation Crops Research Institute) has developed a manually operated and power operated coconut dehusker which helps an easy and fast dehusking operation[14].

Copra Drying: Fresh coconut meat contains about 50 per cent moisture which is to be brought down to 5-6 per cent by drying. Drying must be carried out within 4 hours of splitting since coconut meat deteriorates very rapidly due to growth of mould and bacteria. Microbial activity in the form of slime is seen if temperature is only 30°C and relative humidity around 80 per cent. The greasy surface continues to develop and within 48 hrs penetrating mould appears (Nathaneal, 1968). Microbial activity is reported to be more when moisture content is above 20 per cent (Nair, 1984). The methods generally

used for drying of copra are (1) sun drying, (2) smoke drying or kiln drying and (3) indirect hot air drying[15].

The conventional system of copra drying is by spreading the cups on any open surface for sun drying. This operation takes about 8 days and quality deterioration due to deposition of dirt and dust of wet meat is nearly unavoidable. The drying time can be reduced to 3-4 days if proper solar dryers are used. Copra is also dried indirectly with the use of copra dryer which contains drying chamber.

Copra Storage: The safe moisture level of 5-6 per cent cannot be maintained in copra if stored under conditions of high relative humidity and wide fluctuating temperature. The wet copra should not be mixed with dry copra and storage structure should be such that there is minimum fluctuation in temperature compared to ambient to avoid moisture migration effects in the structure.

The walls also should be provided with sufficient number of adjustable ventilators. The floor of the structure should be water proof, smith and easy for cleaning. If the commodity is bagged, it should never be stored directly against the wall, and should be provided with proper tonnage. Marar and Padmanabhan (1960) reported that copra could be safely stored in plastic lined gunny bags even during rainy season[16].

Extraction of Oil From Copra: In the rural areas and villages copra is crushed in the primitive 'chakku' driven by bullocks. The power driven chakkus or rotaries are used in larger establishments and are driven by steam, diesel or electricity. In the organized sector, copra is crushed by expellers. A double crushing unit gives better extraction; hence, series of expellers are preferred. The clean copra is passed to disintegrator, where it is converted into a coarse meal. The meal is heated in the cooker by steam up to 88°C. The pulped copra is fed continuously to the expeller from which the oil and the cake are forced

in different streams. The first expeller gives 50 per cent extraction and the second extracts the remaining, leaving about 10 per cent oil in the cake compared to 70 per cent in copra[17].

Coconut Products and Byproducts

Though, India produces more than 13 billion nuts per annum, the growth of product development and by-product utilization is considerably lower in comparison with other countries like Philippines, Indonesia and Thailand. Therefore, the need of the hour for India is to accomplish product diversification either by technology transfer or development of indigenous technology so that various processed coconut based products can tap both the export and domestic markets. Further, it can also extend the use of coconut products to areas where they are scarcely used[18].

Coconut by-products can be classified as food and non-food products depending upon their end use. The products which are utilized as food in the natural form or after processing into various products include the wet meat or kernel, Coconut water, coconut milk and milk products, desiccated coconut and coconut flour. Among nonfood products, also known as byproducts, coir, coconut pithy and shell assume commercial importance.

Products of Coconut Water: The products that can be prepared from matured coconut water are nata-de-coco, a gelatinous delicacy formed by the action of micro organisms and coconut vinegar[19].

Coconut Honey: Coconut honey is another product from coconut water containing many growth promoting trace elements besides glucose, fructose and laevulose.

Coco Sauce: A tangy sauce can be prepared from coconut water with red chilli, onion powder and little vinegar.

Coconut Lemonade: It is prepared by boiling coconut water, sugar and lemon

juice. It is traditionally a popular drink in Kerala.

Nata De Coco: Coconut water is made into a delicious jelly, nata, a popular dessert. This flavored jelly is served with fruit salad.

Coconut Kernel Based Products

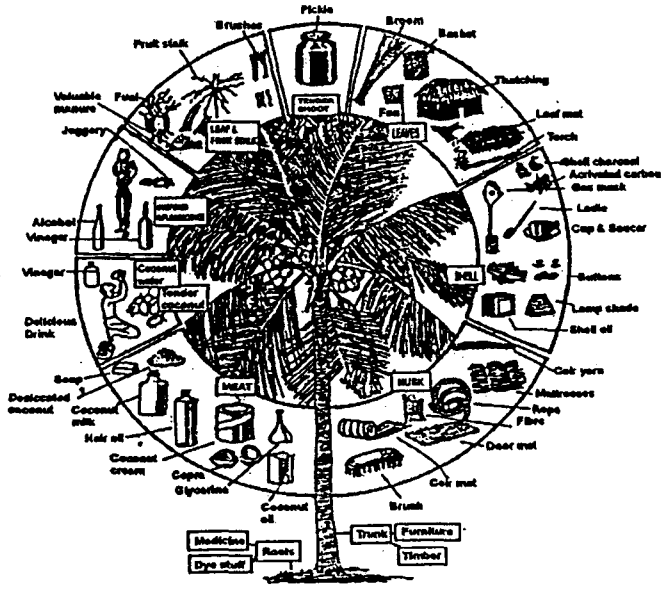
Coconut Milk: Coconut milk and milk products are prepared from fresh matured coconuts. In this process the white coconut meat is ground into slurry from which coconut milk is separated by pressing. This is centrifuged and further processed to get coconut cream, milk powder, etc.

Coco Cheese: This can be prepared from coconut skim milk heated with vinegar. Also, coco cream is mixed with salt to prepare the cheese.

Desiccated Coconut: Desiccated coconut is the white kernel of the coconut, comminuted and desiccated to moisture content of less than 3 per cent. This is a very important commercial product having demand all over the world in the confectionery and other food industries, as well as an ingredient in the fillings of chocolate and candies[20].

Coconut Byproducts: The major coconut byproducts like husk and shell can be converted to value added products like activated carbon, shell charcoal, shell flour and shell based handicrafts. Lack of efficient technologies and unorganized set up are the main reasons for the slow pace of development in this area[21]. Figure 2.5 gives the range of by-products of coconut.

Fig. 2.5: Coconut Products and By-products



Coconut in Kerala

Coconut and Kerala are two inseparably related terms. In fact, Kerala without coconuts and coconuts without Kerala are unimaginable. That the name Kerala itself was derived from the crop reveals the significance of coconut to the state. 'Kera' in vernacular, means coconut and Kerala is thus the land of coconuts. Coconut, in the West Coast of India, is believed to have been brought down from heaven by Parasurama, who himself is according to another legend, the creator of Kerala, the land of coconuts. Hence, the name 'Devavriksha' or 'Kalpavriksha', meaning the tree of heavens came into existence[22].

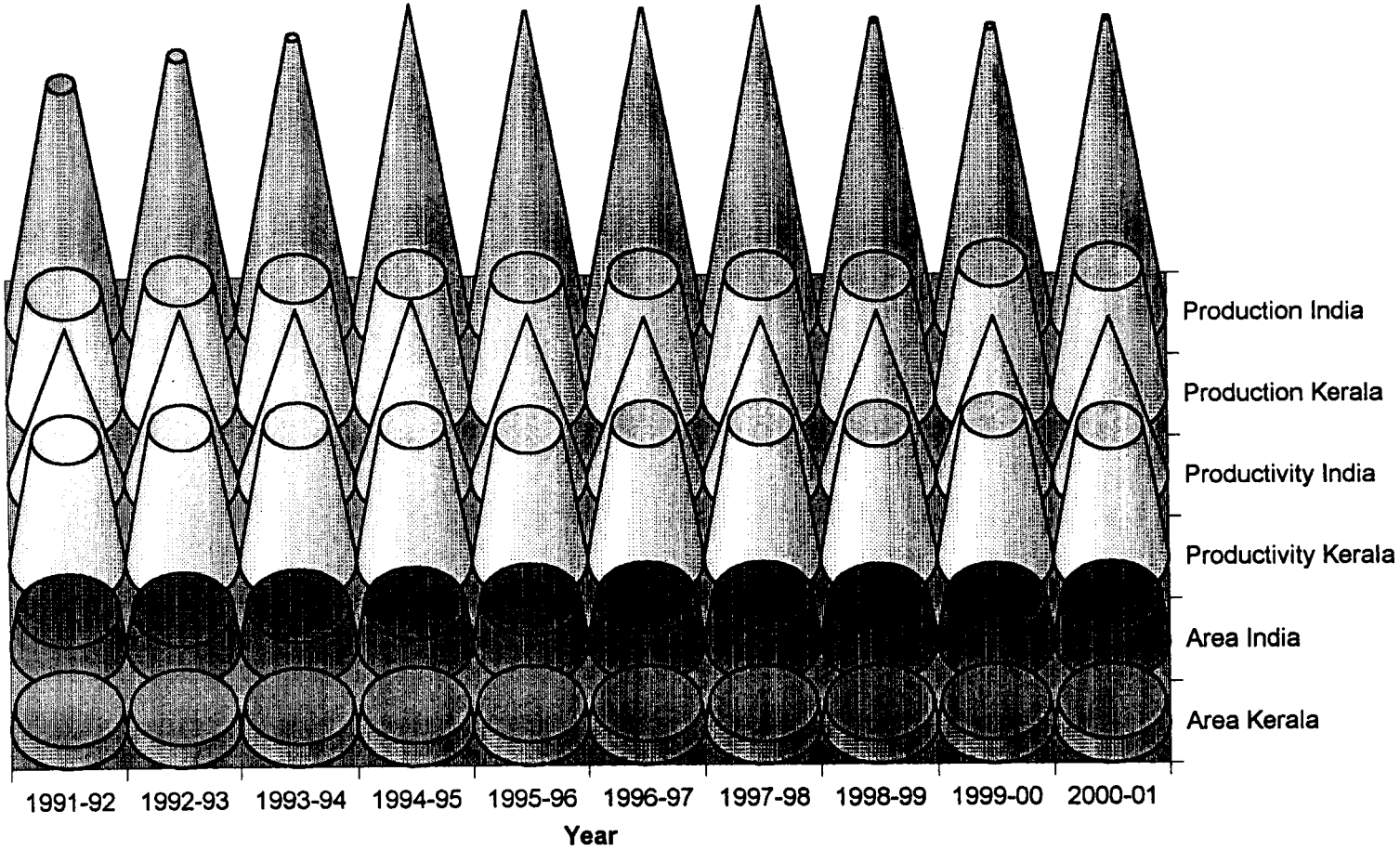
Kerala is the major producer of coconut in the country. But the predominance of Kerala in the coconut front is gradually getting eroded as the other producing states are stepping up their share in area and production considerably. Table 2.5 and Fig. 2.6 give a clear picture of the area, production and productivity of coconut in Kerala and India.

Table 2.5: Area, Production and Productivity of Coconut in Kerala and India

Year	Area('000 ha.)		Production(million nuts)		Productivity(nuts/ha.)	
	Kerala	India	Kerala	India	Kerala	India
1991-92	863	1529	4641	10080	5377	6593
1992-93	877	1538	5124	11241	5843	7310
1993-94	882	1635	5192	11975	5885	7324
1994-95	911	1714	5336	13300	5858	7760
1995-96	914	1833	5155	12952	5638	7066
1996-97	902	1891	5276	13061	5849	6908
1997-98	884	1898	5210	13096	5891	6902
1998-99	882	1755	5132	12536	5817	7145
1999-00	925	1778	5680	12252	6140	6892
2000-01	936	1840	5496	12597	5670	6847

Source: Directorate of Economics and Statistics, Ministry of Agriculture, Government of India.

Fig. 2.6. Area, Production and Productivity of Coconut in Kerala and India



The productivity of coconut in Kerala as on 2000-01 was 5670 nuts/ha. This is lower than the productivity levels in our neighboring states, and even the national average of 6847 nuts/ha. The area under coconut recorded continuous improvement in Kerala during the last decade and it works out to over 9.36 lakhs ha. The trend for expansion in area under coconut is not singular to Kerala but also happening in the neighboring states as well. The future strategy for coconut development should therefore be one of augmenting the productivity of coconut rather than expansion of area. For increasing the productivity, various infrastructural facilities are to be provided in addition to the existing one. The productivity of coconut in Kerala and India is shown in Table 2.5.

Agricultural Sector of Kerala

Agriculture continues to be the core sector in the rural economy of Kerala providing livelihood security for vast majority of the population. The state which accounts for only 1.18 per cent of the geographical area of the country supports nearly 3.9 per cent of her population. The high pressure of human and cattle population has compelled the state to opt for an extensive agricultural strategy quite often leading to situations reaching beyond the carrying capacity of the ecosystem. Kerala thus had a very high degree of land use and cropping intensity even during the pre-independent days, even though published data is available only from the first five year plan onwards[23].

Kerala agriculture has not yet acquired the required stability and resilience although it is gradually moving out of the perpetual stagnancy which it was facing for nearly a decade from the mid seventies. The indications are that The Eighth Five Year Plan target of 2.5 per cent fixed for the sector is likely to be achieved.

The strategy for agricultural development during the Ninth Five Year Plan should be one of maximizing the income from unit of land through a system approach integrating crop, livestock and fisheries. The focus should be on the farmer rather than the commodity and the ultimate objective should be strengthening his income base through appropriate interventions.

Consequently even in the case of crops like coconut and rubber where there was substantial increase in production it was mainly on account of the large scale expansion in area recorded in the recent past rather than any substantial improvement in productivity. In other words even in the case of major crops productivity remains far below the potential. It gives an apparent impression that the farmers in Kerala are not that keen in maximizing the productivity from unit area through better management as much as they show for expansion in area. They seldom realize that the cost of production could be brought down considerably through improvement in productivity and through that route competency of Kerala's farm front could be set at reasonably higher standards.

Distribution of Coconut in Kerala

Among the coconut growing states in India, Kerala state's contribution towards the area and production is predominant. In Kerala state, the cultivation of coconut is spread through out the states. Almost all the districts have coconut cultivation, but its area, production and productivity in a district is depended upon the corresponding geographical situation and climatic conditions.

The differential distribution of coconut in the state is shown in the Table 2.6.

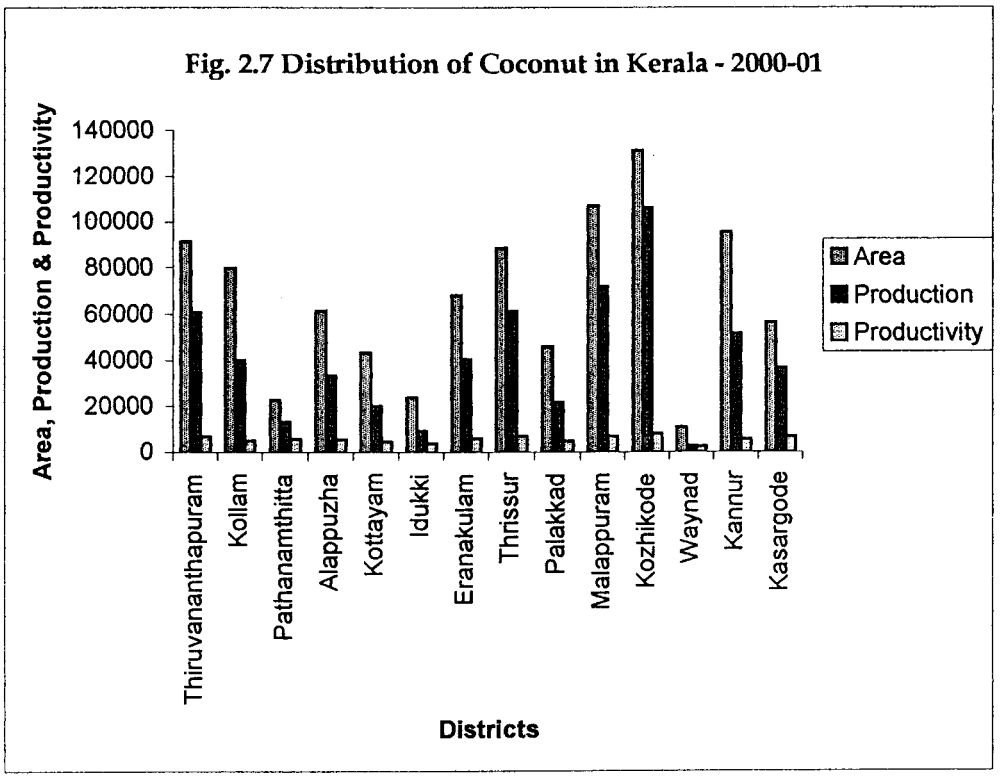
Table 2.6: Distribution of Coconut in Kerala (1999 - 2000)

District	Area (in ha.)	Production (in '0000 nuts)	Productivity (nuts/ha.)
Thiruvananthapuram	91362 (9.8)	60800 (10.7)	6654 *(1.09)*
Kollam	79906 (8.6)	39900 (7.0))	4993 *(0.82)*
Pathanamthitta	22769 (2.5)	13100 (2.3)	5753 *(0.94)*
Alappuzha	61270 (6.6)	33300 (5.9)	5434 *(0.89)*
Kottayam	43272 (4.7)	20100 (3.5)	4645 *(0.76)*
Idukki	23696 (2.6)	9200 (1.6)	3882 *(0.64)*
Eranakulam	68110 (7.4)	40600 (7.2)	5960 *(0.97)*
Thrissur	88307 (9.6)	61000 (10.7)	6907 *(1.13)*
Palakkad	458057 (5.0)	21800 (3.8)	4753 *(0.78)*
Malappuram	107142 (11.5)	71700 (12.6)	6692 *(1.09)*
Kozhikode	131061 (14.2)	105900 (18.7)	8080 *(1.32)*
Waynad	10843 (1.2)	2700 (0.5)	2490 *(0.41)*
Kannur	95257 (10.3)	51500 (9.1)	5406 *(0.88)*
Kasargode	56183 (6.1)	36400 (6.4)	6478 *(1.06)*
State	**925035(100)**	**568000 (100)**	**6140 *(1.00)***

Note: Figures in parentheses are percentage of the total
Figures in italics are index of the total
Source: Economic Review, 2001

The coastal belt of the Kerala state is predominant in the coconut cultivation. Table 2.6 shows the area, production and productivity of coconut in different districts of Kerala. It is revealed that the districts Thiruvananthapuram, Kollam, Alappuzha, Eranakulam, Thrissur, Malappuram, Kozhikode, Kannur and Kasargode, nine out of fourteen districts, have contributed more than 35 percent of their land area for coconut

cultivation. Out of these Kozhikode district with 131061 hectares of area of cultivation and 1059 million nuts of production, ranks first followed by Malappuram district with 107142 hectares and 717 million nuts and Kannur district with 95257 hectares of area and 515 million nuts of production. It is noticed that the three major coconut producing districts are located in the northern part of Kerala. The Southern part of Kerala consists of six districts – Thiruvananthapuram, Kollam, Pathanamthitta, Alappuzha, Kottayam and Idukki – contribute 31.05 percent of the total states' production (Fig. 2.7).



Out of these six districts Thiruvananthapuram district contribute major share of this region with 35.50 percent, rest of the five districts contribute the remaining 64.50 percent of the coconut production of South Kerala. The Southern part of Kerala is known for rubber cultivation. The major part of

rubber production of Kerala state is coming from this region. Districts like Kollam, Pathanamthitta, Kottayam and Idukki are the leaders of rubber cultivation and so they lag in the production of coconut and the geographical location and climatic conditions are also not much suited for coconut cultivation. The Central part of Kerala consists of three districts - Eranakulam, Thrissur and Palakkad. The share of coconut production of this region is 21.72 percent of the state's production. Out of these about 50 percent of the production comes from Thrissur district. As far as Northern part is concerned, 47.21 percent of the state's coconut production is coming from the five districts, that means about half of the states coconut production is contributed by the Northern region consisting of Malappuram, Kozhikode, Waynad, Kannur and Kasargode districts. Kozhikode district leads the production in this region with 40 percent of the region and Waynad district with the states' least production share of only 0.47 percent, lags far behind of other districts. Waynad district is known for spices and other plantations like Tea, Coffee etc. Major part of the state's spices and the plantation crops production are coming from this single district. Since the farmers of this district concentrate on these crops and which yield high return, they neglect the coconut cultivation and moreover the climatic condition is not much suited for coconut cultivation.

The importance of coconut to the economy of Kerala will be recognized from the area utilized by the state for the coconut cultivation. The Table 2.7 gives a clear picture of the land utilization of coconut cultivation.

Table 2.7: Total Cropped Area to Area under Coconut Cultivation (1999 - 2000)

District	Total Cropped Area	Area Under Coconut Cultivation	Percentage
Thiruvananthapuram	**197491**	**91362**	**46.26**
Kollam	212611	79906	37.58
Pathanamthitta	112281	22769	20.27
Alappuzha	**138948**	**61270**	**44.09**
Kottayam	220656	43272	19.61
Idukki	264726	23696	8.95
Ernakulam	227372	68110	29.95
Thrissur	198516	88307	44.48
Palakkad	304507	45857	15.05
Malappuram	264444	107142	40.51
Kozhikode	**232307**	**131061**	**56.41**
Waynad	209061	10843	5.18
Kannur	270249	95257	35.24
Kasargode	148535	56183	37.82
State	**3001704**	**925035**	**30.81**

Source: Economic Review, 2001

Among the coconut growing districts in Kerala, there is wide variation in respect of area, production and productivity of coconut.

Fig. 2.8 Total Cropped Area to Area Under Coconut Cultivation - 1999-2000

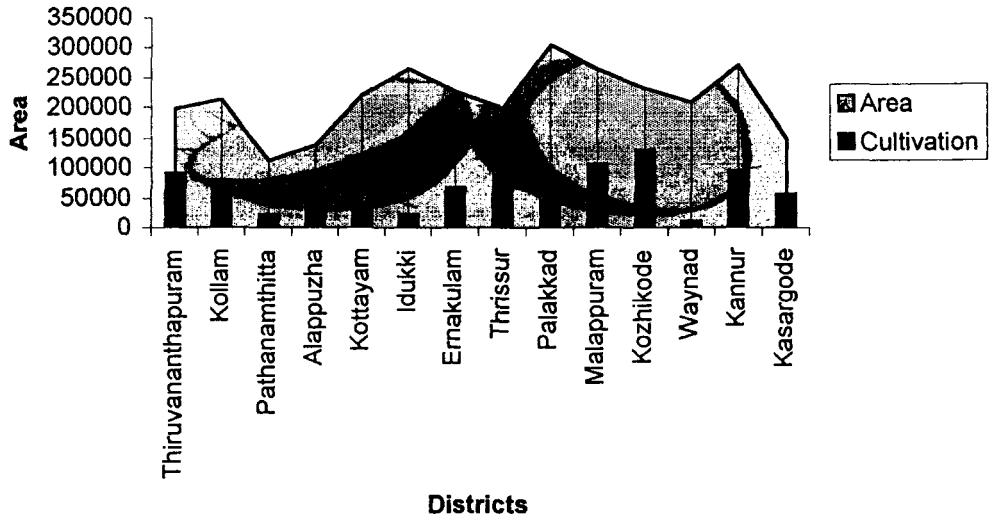


Figure 2.8 shows that out of the total cropped area in the state 30.81 per cent is utilized for coconut cultivation. This indicates the importance of coconut in the agricultural economy of Kerala. In the southern part of the Kerala, Thiruvananthapuram district leads in the area of coconut cultivation with 46.26 percent, in central part, the Thrissur district contributes larger area to the cultivation of coconut with 44.48 percent and in Northern part Kozhikode district have the highest area of 56.41 percent, which is also the largest participant in the area of coconut cultivation in the state. The coastal districts of the state with agro climatic condition in the low and mid land regions are the most suited area for coconut cultivation. The Idukki and Waynad districts contribute only below 10 percentage of their area for coconut cultivation because they are high range area and not suitable for coconut cultivation. The Palakkad district receives only less amount of rainfall and so it is also not suitable for the coconut cultivation. Its contribution is only

15.05 percent of the district's total cropped area. Most of the area of Palakkad district is utilized for paddy cultivation. As far as Pathanamthitta, Kottayam and Eranakulam districts are concerned the coconut cultivable area is lower than the state's average. Since the geographical situation and climatic conditions of these districts are mostly suitable for rubber cultivation and it is more profitable to the farmers, naturally they prefer rubber cultivation to coconut cultivation.

As far as productivity of coconut is concerned, there is wide variation in the productivity of coconut among different districts. Table 2.6 shows the coconut productivity of different districts during 1999-2000. It is evident from the preceding pages that, though Kerala is the major coconut producing state the unit productivity of the crop is low compared to that of other states. Not only the per hectare productivity is low, but the per palm productivity is also the lowest in Kerala. The reasons for the low productivity can be identified by analyzing the productivity of different districts of Kerala. According to the 1995-96 estimates the per palm productivity in Kerala is only 33 nuts against 44 nuts in Tamil Nadu and 54 nuts in Karnataka. In Tamil Nadu and Karnataka, coconut is predominantly an irrigated crop. In Karnataka, wherever unirrigated crop is grown, the holdings are located in valleys or near tanks where copious ground water supply is available within the easy reach of palm roots. Irrigation is not a common practice in Kerala. In holdings where irrigation is practiced, the productivity is far higher than the general level and is also comparable to that of the best maintained gardens in other states. Lack of irrigation facilities and the inadequate attention given are undoubtedly the limiting factors responsible for the poor performance of coconut crop in Kerala. Another factor is prevalence of the devastating disease commonly referred to as the root-wilt disease of coconut.

But it is interesting to observe that despite the incidence of disease in the southern districts of Quilon, Alleppey, Kottayam, Ernakulam, Idukki and Thrissur the per palm productivity in these districts has been consistently on a par with that of the disease free northern districts of Malappuram, Kozhikode, Kannur and Palaghat. Even in Thiruvananthapuram district, which is a comparatively disease free region, the productivity is not very much different from that of the disease affected districts, the Table 2.8 gives the productivity level in the different districts.

Table 2.8: A Comparison of the per palm productivity in the different districts of Kerala State

District		Per palm Productivity	District		Per palm Productivity
1	Thiruvananthapuram	35	8	Thrissur	44
2	Kollam	30	9	Palakkad	38
3	Pathanamthitta	39	10	Malappuram	29
4	Alappuzha	40	11	Kozhikode	33
5	Kottayam	26	12	Waynad	22
6	Idukki	33	13	Kannur	33
7	Ernakulam	37	14	Kasargode	18

Source: Glimpses of Coconut Industry in India, CDB, Kochi

In the northern region of the state disease cannot be considered as the major factor responsible for the low yield. In this region, the differential performance could be attributed only to the pattern of distribution of rainfall and the low coverage under irrigation. The yield data from the disease affected districts indicates that even in the presence of disease, the average productivity of the palms could be maintained at a satisfactory level. In most of the disease affected districts, the distribution of rainfall is fairly well spread, the ground water is more favourably located and the general management practices are comparatively more intensive than in the disease

free northern districts of the state. These observations also highlight the importance of irrigation and other management practices in maintaining a satisfactory productivity level even in the presence of the root-wilt disease[24].

Going back to the differential productivity per hectare of coconut holding among the states of Kerala, Tamil Nadu and Karnataka it is of practical significance to note the differences in the palm population per unit area in the three states. When the average density per hectare is 229 palms in Kerala, the corresponding figure for Tamil Nadu is 319 palms and for Karnataka only 122 palms. In all the states the proportion of the bearing palms is more or less the same, that is roughly two third of the total population. This differential density is very much reflected on the productivity levels also. Despite the high average yield of 54 nuts per palm in Karnataka, the per hectare yield in the state is only 5178 nuts which is not very much higher than that of Kerala. This is mainly due to the low palm population per unit area in Karnataka in comparison to other states. On the other hand, in Tamil Nadu with a comparatively low per palm yield of 44 nuts, the per hectare productivity is nearly 9524 nuts which is much higher than that of Karnataka. This is presumably due to the high palm population per unit area which shows that under proper management conditions a high density, perhaps, may prove to be useful. In that case, it has a relevance to the conditions in Kerala, particularly in those districts where disease is the limiting factor for high productivity[25].

The productivity recorded in the state during 2000-'01 is 5870, which is less than the previous year's productivity. The wide spread attack of Mandari pest which was an exotic mite that appeared all of a sudden in Ernakulam district and its rapid spread affecting over 590 lakh palms could perhaps be the factor responsible largely for the decline in productivity . the pest has

again re-appeared in 2000-'01 as well in spite of the massive spraying organized by the state in association with the local bodies concerned. During 1999-'00, plant protection treatment could be organized with the participation of farmers covering 2.77 crore palms, the cost being shared by the state and the district and Grama Punchayats. The mode of operation of the spraying campaign against the coconut mite set an example of the manner in which the state government and local bodies could combine their efforts towards a common goal.

Growth of Coconut in Kerala

In the Kerala state, the growth in area under coconut achieved during the last 30 years was around 27 percentages, from 730300 ha. during 1971-72 to 925035 ha. during 1999-00, an average of 0.9 per cent per year, this was far below when compared to all India figures. In India the growth in area for the same period was around 65 per cent, an average of 2.8 per cent per year. But the growth in production in Kerala was 40 percent over the same period, which was far higher than the national level of 30 percent. Table 2.9 shows the growth of coconut in relation to area, production and productivity for the last 30 years (1971-72 to 1999-00).

Table 2.9: District-wise Details of Growth of Coconut in Kerala (1971-1972 to 1999-2000)

District	Area (in ha.)				Production (in million nuts)				Productivity (nuts/ha.)			
	1971-72	1981-82	1991-92	1999-00	1971-72	1981-82	1991-92	1999-00	1971-72	1981-82	1991-92	1999-00
Thiruvananthapuram	77300	73515	82907	91362	4755	3550	5210	6080	6151	4828	6284	6654
Kollam	104300	84544	75454	79906	5881	3560	3430	3990	5638	4210	4545	4993
Pathanamthitta	NA	NA	26850	22769	NA	NA	1350	1310	NA	NA	5027	5753
Alappuzha	82100	62118	65254	61270	5485	2950	3060	3330	6681	4749	4689	5434
Kottayam	70100	50751	46012	43272	3387	2000	2170	2010	4831	3940	4716	4645
Idukki	NA	17371	16356	23696	NA	440	720	920	NA	2532	4402	3882
Ernakulam	70400	62317	64359	68110	4125	3440	3700	4060	5859	5520	5749	5960
Thrissur	54700	57312	84789	88307	3457	3810	5460	6100	6319	6647	6439	6907
Palakkad	23200	22916	37090	45857	910	770	1370	2180	3923	3360	3693	4753
Malappuram	68700	57919	99535	107142	3490	2470	5000	7170	5079	4264	5023	6692
Kozhikode	90900	97308	122193	131061	5671	4430	7510	10590	6238	4552	6146	8080
Waynad	NA	3535	5347	10843	NA	40	60	270	NA	1131	1122	2490
Kannur	88600	77012	90113	95257	3388	2600	4990	5150	3823	3376	5537	5406
Kasargode	NA	NA	46802	56183	NA	NA	2380	3640	NA	NA	5085	6478
State	**730300**	**666618**	**863061**	**925035**	**40549**	**30060**	**46410**	**56800**	**5552**	**4509**	**5377**	**6140**

Source: Compiled from Agricultural Statistics 1999-2000, Dept. of Economics & Statistics and Coconut Statistics, Coconut Development Board

From the table, it is revealed that the area under coconut cultivation for the last 30 years shows a declining trend in the southern districts of Kerala, consisting of Thiruvananthapuram, Kollam, Pathanamthitta, Alappuzha, Kottayam and Idukki. But all the other districts which are situated in central and northern parts of Kerala shows an increasing trend in the area except Eranakulam district. Table 2.10 shows the region wise distribution of area, production and productivity of coconut for the last 30 years. The area under cultivation during 1971-72 of the southern region (six districts) were 3,33,808 ha. which was decreased to 3,22,278 ha. during 1999-00.

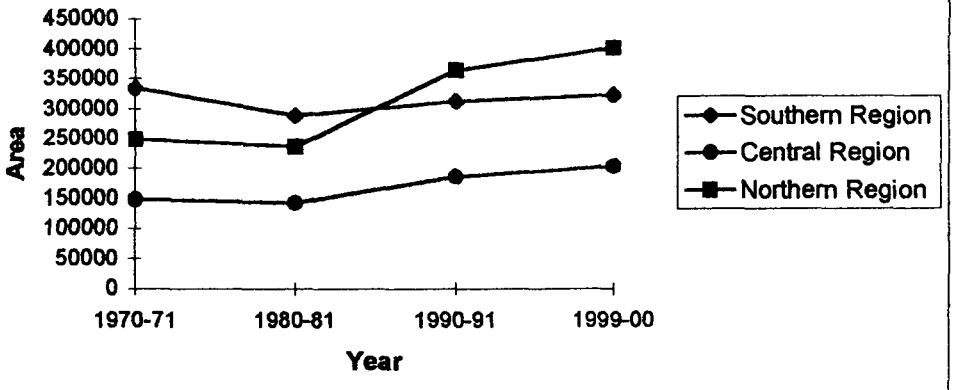
Table 2.10: Region wise distribution of area, production and productivity of coconut (1970-71 to 1999-00)

Region	1970-71	1980-81	1990-91	1999-00	Growth rate
Area					
Southern Region	333800	288299	312833	322275	-3.5
Central Region	148300	142545	186238	202274	36.4
Northern Region	248200	235774	363998	400486	61.35
State	**730300**	**666618**	**863069**	**925035**	**26.66**
Production					
Southern Region	19507	12500	15940	17640	-9.5
Central Region	8492	8020	10530	12340	45.31
Northern Region	12549	9540	19940	26820	113.72
State	**40548**	**30060**	**46410**	**56800**	**40.08**
Productivity					
Southern Region	5825	4052	4944	5227	-10.26
Central Region	5367	5176	5293	5873	9.4
Northern Region	5647	3330	4583	5829	3.2
State	**5552**	**4509**	**5377**	**6140**	**10.6**

Source: Compiled from Agricultural Statistics, Directorate of Economics and Statistics, Trivandrum and Coconut Statistics, CDB, Kochi

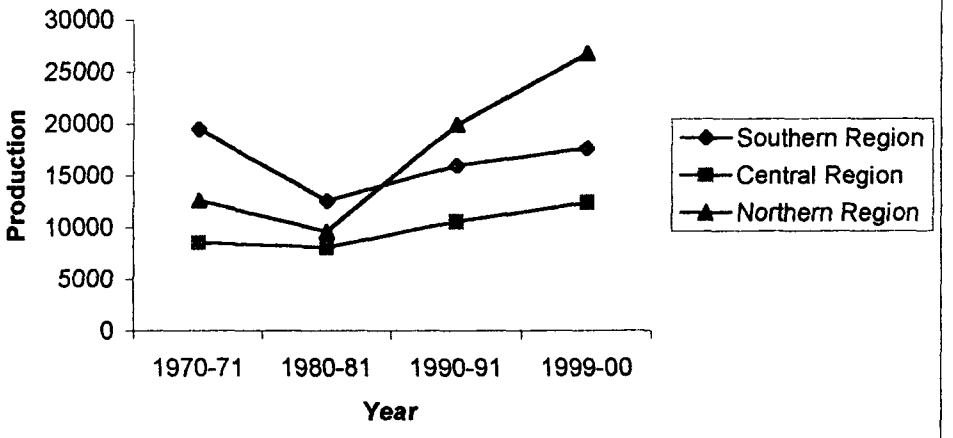
(-3.5) percent growth rate in area in southern region is mainly because of shifting the area under cultivation from coconut to rubber. Out of these, Thiruvananthapuram district shows an increase in area which indicates the district did not go for rubber plantation. Another reason for decrease in area in this region is wide spread attack of root-wilt disease in the coconut palm. Scientists worked in this field could not find out a remedy for this disease for a long period. Growers cut down most of the disease affected coconut palm (Fig. 2.9).

Fig. 2.9 Region-wise Distribution of Area Under Coconut Cultivation 1970-2000



As far as production is concerned the southern region districts show a declining trend from 19,507 lakh nuts during 1970-71 to 17,640 lakh units during 1999-00, around -9.5 percent growth. The first 10 years , from 1970-71 to 1980-81, experienced a sudden fall in production from 19,507 lakh nuts to 12,500 lakh nuts was recovered gradually in subsequent decades. Similarly productivity is also declined from 5,825 nuts to 5,227 nuts during this period. Productivity also shows a sudden decrease in the decade from 5,825 nuts to 4,052 nuts, it gradually increased in the subsequent years (Fig. 2.10).

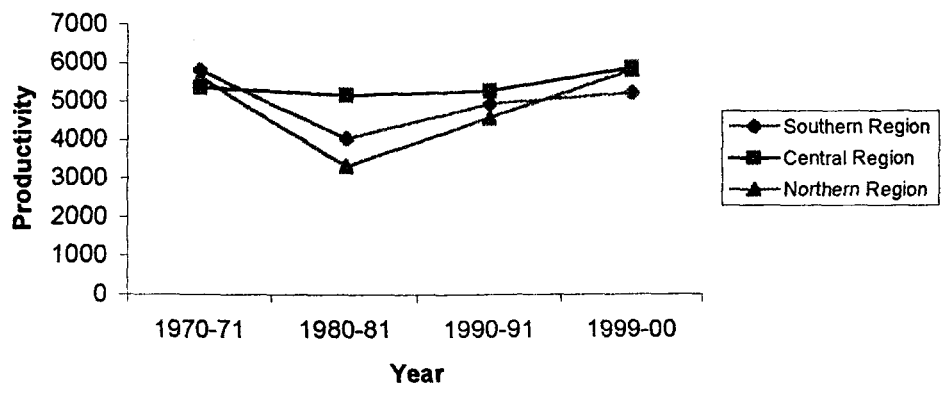
Fig. 2.10 Region-wise Distribution of Production of Coconut - *1970-2000*



The central region achieved a growth of around 36.4 percent in area under coconut cultivation, from 1,48,300 ha. during 1970-71 to 2,02,274 ha. during 1999-00, in the first decade there is a slight fall in the area to 1,42,545 ha., but in the subsequent two decades the area is considerably increased and it reached to 2,02,274 ha. Out of three districts in central region the Eranakulam district showed a negative growth rate in the first decade and a recovering trend in the subsequent years but it did not touching to the first decade's figure of 70,400 ha. The rate of growth in production in this region is going corresponding to the rate of growth of area under cultivation. During the first decade there was a decrease in the production from 8,492 lakh nuts to 8,020 nuts. But after 1980-81 the production of coconut shows an increasing trend and it now reached to 12,340 nuts during 1999-2000, around 45.31 percentage growths in production which is above the state average of 40.08 percentage. For production also the Ernakulam districts shows a declining trend from 4,125 lakh nuts to 3,440 lakh nuts during 1991-92 and 4,060 lakh during 1999-2000 period. Productivity is also increased from 5,367 nuts/ha. during 1970-71 to 5,873 nuts/ha. during 1999-2000.

The northern part of the state is actually the real contributor of the states' area and production of coconut. All the five districts show a tremendous increasing trend in area from 2,48,200 ha. to 4,00,486 ha. during 1970-71 to 1999-00, around 61.35 percentage growth. These districts have the ideal climatic and geographical conditions for coconut cultivation and oil content of the coconut is high in this region. Similar to the southern and central region the northern region also shows a fall in area during 1980-81, this was mainly because of the draught condition reported during this period and the attack of root-wilt disease. All the districts except Kozhikode district, have a declining growth rate in area during the first decade. Production also has the same characteristic of area, there was a production of 12,549 lakh nuts during 1970-71 in this region and it decreased to 9,540 lakh nuts during 1980-81, the production of all the districts is decreased. But the production in the subsequent two decades has increased considerably and it reaches to 26,820 lakh nuts during 1999-2000, around 113.72 percent growth. All the five districts in this region attained more than 25 percent growth in the production of nuts during the last decade of 1991-92 to 1999-2000. Productivity of this region also shows an increasing trend from 5,647 nuts during 1970-71 to 5,829 nuts during 1999-2000 but it was only 3,330 nuts during 1981-82 and 4,583 nuts during 1991-92. it never touches the state average (Fig. 2.11).

Fig. 2.11 Region-wise Distribution of Productivity of Coconut



Coconut Development under Five Year Plans

Coconut is the only crop which has shown a spectacular recovery from its stagnating trend during eighties exceeding the physical targets in Sixth, Seventh and Eighth Five Year Plans consecutively. During the base year of Sixth Plan coconut production was only 3032 million nuts which has steadily increased to 3453 million nuts in Sixth Plan, 4358 million in Seventh Plan and 5906 nuts in the fourth year of Eighth Five Year Plan. But other oil seeds like groundnut and sesamum on the other hand have recorded a declining trend in production in spite of the efforts made in the successive five year plans to increase their production. The latest estimate shows that the production would be around 14,364 tonnes which accounts for only 2/3 of the base level production for sixth Five Year Plan.

Table 2.11: Physical Targets and Achievement Under Selected Indicators of Progress (During VI, VII and VIII Plans)

	Targets (million nuts)	Achievement (million nuts)
Base Year 1979-80	3870.00	3032.00
VI th Five Year Plan	3333.00	3453.00
VII th Five Year Plan	3400.00	4358.00
VIII th Five Year Plan	5000.00	5303.00

Source : Report of the Taskforce on Field Crops , Ninth Five Plan 1997-2002, State Planning Board, TVM.

During the Ninth Five Year Plan separate task forces have been fielded for dealing "plantation crops" and "innovative Agriculture" the Task Force on Field Crops is concerned with small holder crops like rice, coconut, arecanut, pepper cashew, ginger, turmeric etc[26].

Attaining self sufficiency in edible oils is one of the important national objectives of Eighth Five Year Plan. This is sought to be achieved through

systematic improvement in productivity of major oil seed crops cultivated in the country through the popularization of appropriate technologies along with the required marketing support. The Technology Mission on Oil Seeds launched by Government of India in 1986 has been concentrating their efforts in nine annual oil seed crops which include groundnut, sesamum, mustard, soyabean, sunflower, rape-seed, nigerseed, safflower and cotton. Government of India had recently declared coconut also as an oil seed crop even though central assistance under the Technology Mission is yet to be released. The estimated production of oil seeds in the country during 1993-94 is around 21 million tonnes. The central organization for oil industry and trade had estimated the availability of edible oil from major oil seeds produced in the country for 1994-96 as 6 million tonnes which includes 2 lakh tonnes from coconut. Despite a record production of oil seeds anticipated for the year there was a gap of around 2.5 lakh tonnes between supply and demand. The estimate for 1996-97 shows that the gap has further widened to 6 lakh tonnes. All these high-lights the need for augmenting oil seed production in the country.

The strategy for coconut development during the Ninth Five Year Plan should be entirely focused on integrated development of existing coconut holdings aiming at increased productivity through a package of measures comprising of replanting of uneconomic palms with superior cultivars, creation of irrigation facilities and promotion of scientific management under a mixed farming system. Irrigation is perhaps the key input which has the potential for nearly doubling the productivity of palms as well as opening new opportunities for intercropping. The massive programme already initiated by the state government integrating it with enhanced targets for the Ninth Plan.

The state-level intervention should be in the form of market promotion and supply management for stabilizing prices at reasonable levels which are remunerative to growers and affordable to end users.

Coconut Economy of Kerala:

Coconut is the mainstay of Kerala's economy in view of it's multifarious contribution to income and employment. With a coverage of nearly 9 lakh ha., coconut occupies 42 per cent of the net cropped area and provides livelihood over 3.5 million families in Kerala. The Coconut has profound influence on the agricultural economy of Kerala. It is the mainstay of the people with the entire fabric of rural economy having closely woven around it. The contribution of the crop to the annual income of the state is around 15 per cent and to the agricultural income around 35 percent. The processing industries and other activities provide direct employment opportunities to over a million people in the state and also sustain inter-state trading in coconut products amounting to a gross annual turnover of about 5,400 million rupees[27].

Copra crushing is an important traditional small scale industry in Kerala. Till recently the state was holding almost a virtual monopoly in copra production by contributing nearly 95 per cent of the copra produced in the country. In other producing states, the consumption of coconut was largely as tender nuts for drinking purposes and mature nuts for household consumption. This situation is undergoing fast changes in Tamil Nadu, Karnataka and even Andhra Pradesh has already emerged as suppliers of considerable quantity of copra. As per the estimate of the Coconut Development Board the contribution of Kerala in the supply of milling copra in the country accounts for only 77 per cent whereas the remaining 3 southern states together contribute 23 per cent.

In Kerala copra making is a rural industry and about 1150 units are currently operating. Even though the share of Kerala in the total output of copra has come down, there was unprecedented growth in the quantity of copra produced in Kerala during the last 2 years. The production of copra which was more or less static in the range of 3 to 3.50 lakh tonnes till 1987-88 has climbed up to 4.5 lakh tonnes during the subsequent four years. Copra production has found new heights of 5.42 and 5.70 lakh tonnes during 1992-93 and 1993-94 respectively[28]. Compared to the mid eighties the present production in Kerala state alone is nearly 50 per cent more thus creating a real glut in the market. In terms of coconut oil it accounts for nearly 75000 to 80000 tonnes. It is this expansion in supply without corresponding increase in demand which has created the crisis in the marketing of coconut in Kerala during the last two years. Even though the situation has improved recently it is not known how long it is sustainable.

Land Holdings of Kerala

Coconut is essentially a small holders' crop in Kerala with the average size of holding as small as 0.25 ha. Out of 2.5 million coconut holdings about 90 per cent of the holdings covering 60 per cent of the area under the crop are in marginal holdings not capable of supporting an average farm family[29]. In, most of these holdings coconut has been planted without providing the needed irrigation and land development support which are basic to improving productivity. Lack of adequate resources acts as a major constraint in taking up organized efforts for providing such facilities to these holdings. Distribution of operational holdings according to size and the emerging trend over the last three decades are given in Table 2.12.

Table 2.12: Size distribution of operational Holdings

Size of holding (ha.)	No. of holdings		Area occupied by each class (ha.)	
	1970-71	1990-91	1970-71	1990-91
Below 0.02	18.80381	6.35124	538655	8300
Between 0.02 & 0.5 ha.		39.14282		535099
Between 0.05 & 1 ha.		4.66673		336073
Between 1 & 2 ha.	2.6783	2.809	365199	381437
Above 2 ha.	1.56927	1.221	688924	540914

Source: 1) Report of the high level committee on land and water resources

2) Economic Review2001

High pressure of population and the high social values attached to land by the keralites led to extreme subdivision and fragmentation resulting in an average farm size which is sub optimal for providing livelihood security for an average family. The average size of holding which was only about ¼ of the national average is in the process of further deterioration on account of sub division and fragmentation. The size of holding, which was 0.46 ha. in 1980-81 has come down to 0.34 in 1985-86 and further to 0.31 ha. in 1990-91. the marginalization of holdings acts as a major deterrent for optimizing the returns from the available resources by restricting the scope for capital investments. The small size of holdings and their scattered nature of distribution create problems for mechanization, assembling and marketing of commodities including value added processing. The agricultural development policies and programmes in the context of Kerala therefore call for a special orientation for catering to the special needs of the small farm segment. Institutional support of a specialized nature is also necessary for servicing the small and marginal farmers and for safeguarding their interest in trading and marketing. At present there are sufficient institutional support

for the expansion of area of cultivation of coconut and for raising the production and productivity of coconut etc. But due to the abnormal fluctuation in the price of the coconut, marketing of the produce gives no satisfaction to the growers, especially for the small and tiny farmers of Kerala. In Kerala the marketing of coconut is not undertaken in the organized sector. So a detailed restructuring is required in the present coconut sector, which is analysed in the following chapter.

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Chapter III

TRADE IN COCONUT

- *MARKETING STRUCTURE AND PRACTICES*
- *CONSUMPTION PATTERN*
- *MARKETING CHANNELS*
- *PRICE MOVEMENT*
- *FOREIGN TRADE IN COCONUT*

III TRADE IN COCONUT

Stable price and adequate marketing facilities are essential for the development of agriculture. This is especially true of perennial crops like coconut, which involves large investment and long vegetative period. However one of the most distressing features of the coconut economy of Kerala during the past two decades has been the abnormal fluctuation in prices - both seasonal and cyclical, despite the steady increase in production during the same period.

Coconut marketing refers to the marketing of raw coconut, copra, coconut oil and other value added products. Marketing of coconut in raw form is made only in the local market and very rarely in the national - international level, because raw coconut is used mainly for culinary and religious purpose. In Kerala people are using coconut for culinary purpose and they are having at least 5 to 10 coconut palms in their homestead. So trading in coconut for this purpose is insignificant. Then raw coconut is marketed from Kerala and other coconut producing states to non-producing states for religious purpose. The volume of this trade is also insignificant. Similarly tender coconut marketing is also not taken place in a big way when compared to copra and coconut oil marketing in the country. Marketing of value added products of coconut is also not considered in this study.

Copra

The premium product derived from the coconut is 'coconut oil', which is taken from the 'copra'. Copra is produced form the fresh nut and consists of the kernel which has been shelled and dried. The processing of

coconuts into milling copra is concentrated mainly in the Kerala state and to a lesser extent in the island groups of Lakshadweep, Andaman and Nicobar and also in the state of Tamil Nadu. Copra is useful mainly as the source of coconut oil, which is valuable for the production of many kinds of food and industrial products. Generally the coconut farmers themselves process the nuts into copra. The quality of copra produced depends largely on the drying methods used by the producers. In the drying process, the moisture content of the coconut meat has to be reduced to a certain level (5 to6%); otherwise the copra will be of inferior quality. Various methods adopted for converting nuts into copra were explained in the previous chapter. Apart from milling copra, a small quantity of edible copra is also produced in the country, mainly in the states of Karnataka and Andhra Pradesh. The average extraction percentage of copra produced in the country is 62.5 against the corresponding figures of 65 in Western Samoa, 62 in Thailand and Philippines, 61 in Sri Lanka, 58 in Indonesia and 57 in Malaysia[1].

Though the production of milling copra is a traditional rural industry, it does not come under the organized sector but is in the hands of innumerable small processors spread over the main producing centers. In most cases, the processors are middlemen who collect harvested nuts from the small producers for further processing and trading in copra. It is estimated that over 8000 small units are engaged in the manufacture of copra in Kerala state. The copra processors sell the milling copra either to the nearby milling units or in the assembling markets. The major assembling markets for milling copra in Kerala are Alappuzha, Kozhikode, and Badagara. Bulk of the copra entering theses markets are for upcountry sales. The copra is traded chiefly through commission agents of upcountry buyers. Invariably the upcountry buyers are millers from Maharashtra and West Bengal and consequently, no other intermediaries are involved in the transactions. The price of copra is more or less determined by the prevailing

oil price. In general, a basic assumption of 62.5 kilo oil and 35 kilo cake from one quintal of copra is utilized by millers in fixing the producing centers. It finds markets in other areas where coconut is not grown[2].

Classification and Grading of Copra

Several grades and classifications of edible copra are prevalent in the market. The Badagara variety is referred to as "Calicut Gola" in the trade. In Badagara, the balls are classified into five types according to the size. In Karnataka State, four grades of ball copra according to size, are designated as "Mysore", "Madras", "Ras" and "Barik". The sizes of the different grades are not defined in any measurable unit but the balls are classified into the different grades by visual assessment only. Ball copra from Godavari district is referred to as Madras copra which is not as good as Karnataka or Badagara and Kozhikode areas is considered slightly inferior to that of Tiptur area of Karnataka.

The three main grades of edible cup copra in Kozhikode are known as 'Rajpur', 'Madras' and 'Dilpass'. Rajpur copra is considered as the best edible cup copra and is prepared by cutting the copra balls and further drying the halves in the sum for two or three grades according to the whiteness of the kernel. The Rajpur variety comes to the market from September to June. The Madras copra is some what inferior to Rajpur copra and is prepared from nuts in which water has not been fully absorbed. Rejections from Rajpur quality also go as Madras. According to the colour of the skin (testa) Madras copra is classified into two in quality and is prepared from partially dried nuts, stored for three or four months or from fresh nuts.

In Alappuzha, the best cups of sun dried copra with good colour and clean appearance are separated out and classified as edible copra. There are different grades according to the size, colour of outer skin. Etc. which are locally known as 'Rai', 'Mungi', 'Dala' etc.

In Kerala state the best grade of milling copra is known as 'Office Pass' and other inferior quality copra is known as 'Rasi'. Rasi is sometimes classified as 'Thirurassi' and 'Kazhippu'. In Tiptur copra rejected from edible copra is called 'Kavathu'. Moisture is an important factor for judging the quality and millers sometimes differentiate copra on the basis of number of days taken for drying, etc. the term "cutter" dry is used to indicate fully dried copra.

Coconut Oil and Cake

Coconut oil is traded in large scale both in national and international level. The coconut oil is used commercially for edible and industrial purpose. Traditionally, coconut was grown for the oil but over the years, with the changed food habits, gradually the level of utilization of coconut oil reduced, owing to cheaper source of fat available from other vegetable oils. In India, only 32 per cent of the total production is used for oil purpose, yet the price of coconut continues to be dictated by the price of oil. The coconut oil millers are scattered through out the country. They are buying copra from traders and traders are buying copra from growers. The growers convert their raw coconut to copra or they supply raw coconut to the local small buyers. Since most of the growers in Kerala are small and tiny holders this practice of marketing of coconut is taking place through out the country.

The milling industry is traditional to the country with a very slow pace of modernization. Both rotaries and expellers are used for crushing and the average recover of oil is 62.5 per cent in rotaries and 64 per cent in expellers. There are 1,439 milling establishments in India composed of about 121 expeller units and 1,318 rotary units. In Kerala, about 76 per cent of the milling units are located; there is a disproportionate concentration of rotary mills accounting for 77 per cent of the total rotaries in the country. Consequently, the milling sector in the state commands only 54 per cent of

the total installed capacity in the country. On the other hand, Maharashtra with only 28 milling units commands about 29 per cent of the installed capacity[3]. The details of milling units in the country are given in the Table 3.1.

Table 3.1: The Distribution of Milling Units

State	Expeller	Mills	Total	Installed Capacity		
		Rotary		Expeller	Rotary	Total
1. Kerala	79	1,009	1088	1,829	3,868	5,697
2. Maharashtra	25	3	28	3,098	10	3,108
3. Andhra Pradesh	1	129	130	6	349	355
4. Karnataka	2	105	107	21	390	411
5. Tamil Nadu	3	70	73	13	401	414
6. West Bengal	11	....	11	556	....	556
7. Gujarat	...	2	2	....	4	4
Total	**121**	**1,318**	**1,439**	**5,523**	**5,022**	**10,545**

Source: Glimpses of Coconut Industry in India, Coconut Development Board, Kochi, 1988, p.2

In Kerala, most of the expeller units are of recent origin and are not effectively working due to various reasons. Similarly, more than 30 per cent of the rotary units are now idle and in the case of others, the full installed capacity is not utilized. If the existing milling capacity of expellers and rotaries in the state is fully utilized, the entire quantity of copra produced in the state could be crushed locally. Most of the small rotary units have only limited capacity and the production is usually adjusted to equate the demand from the consumers and the retailers of the locality. The bigger milling establishments find outlets in the major oil markets in the state. The important oil markets in Kerala are Cochin and Kozhikode. In the assembling markets, the oil transacted is mainly for upcountry markets.

Here also the trading is through brokers or commission agents. Occasionally, organized end users also enter the markets but this is not a regular features. Similarly, a few of the bigger rotary and expeller establishments do not operate in the local assembling markets but have their own marketing arrangements in the upcountry centers. It is estimated that nearly 46,000 tones of oil are marketed from Kerala annually and the balance utilized for consumption within the state.

Nearly 182,000 tones of milling copra move out of Kerala state for crushing in other states. The crushing units in theses states also utilize the milling copra produced locally. The important outside markets are Madras, Bombay and Calcutta. From these centers the oil is ultimately traded through a large number of wholesale and retail outlets even to the remote villages in the respective states.

The bulk of the oil cake produced in the country is utilized for feeding the cattle leaving only a small percentage for further processing in the solvent extraction plants. There are about a dozen solvent extraction plants in the country.

Even though India has emerged as the leading coconut producing country in the world, unlike other coconut growing countries viz. Philippines, Sri Lanka and Indonesia, the post harvest processing and marketing sector in India has not yet made much progress. Coconut oil milling and manufacture of coir and coir products, the traditional industries are still the main industries based on coconut in the country. While other countries have made much progress in the field of coconut product diversification and by-product utilization, India is still depending on the traditional industries like oil milling and manufacture of coir and coir products. The entire coconut economy in the country depends on the traditional industries. Even though technologies are available to produce an array of food products like coconut cream, coconut milk powder, coconut

milk based consumer products, nata-de-coco etc., our country could not make progress in the coconut product diversification and by-product utilization. In the desiccated coconut manufacturing sector also we are still at its infancy stage. Research and Development efforts on product diversification and by-product utilization have been very limited.

Coconut Marketing Systems of Major Coconut Producing Countries

The marketing system and structure vary from country to country, but in general some broad patterns of similarity in methods, practices and problems of marketing among the countries practically the same state of underdevelopment can be observed. In the context of the traditional, peasant economy of the developing countries of Asia, where most crops are produced on small holdings which are widely scattered, often rather isolated and with poor access to the market, and operated by farmers who lank the resources and the facilities to derive greater returns from their produce, this pattern of similarity is discernible in the inter-relatedness of production, marketing and credit.

Sri Lanka: In Ceylon, the produce of the small-holder finds an outlet as fresh nuts (usually after removal of the husk) for distribution to households, especially in those areas in which production within the respective localities is not sufficient to meet the demand therein. It is here that traders-cum-middlemen come in. The practice is that the producer who has a surplus takes it to the village market or fair, or has standing arrangements with traders of sundry, food and consumption items to take the surplus over for disposal through their normal trade outlets. Nor is it unusual for the middlemen to go to the producers and take over their surplus which they supply in bulk to the traders in the towns, etc.

The prices at which the small producers in Ceylon are able to dispose of his surplus nuts generally vary directly with the changes in the prices

which millers offer for copra. Small producers of the type described in the preceding paragraph have no facilities or incentives for converting small surpluses into copra. In these circumstances, the prices they are able to obtain depend to a large extent on the arrangements which exist in regard to the disposal of their surplus through trade channels; and it is understandable that they are invariably exploited by the traders on middlemen[4].

Philippines: In the Philippines, farmers dispose of their surplus coconuts either by selling the unharvested nuts on a contract basis, or by selling the husked nuts; or, alternatively, they process the nuts into copra and then sell the copra. When coconuts are sold on a contract basis, the buyer often pays an agreed price for the estimated quantity that may be harvested, and bears the cost of harvesting, hauling and marketing the nuts. Another method is for the buyer to pay for the husked nuts, usually on a par 1,000 nuts basis, which have been assembled at the farm or at a convenient place by the roadside. The coconut dealer pays the costs after the sale is made. This is the most common way of selling nuts to processors of desiccated coconut and to copra producers. Quite often, the farmer delivers the husked nuts to the market outlet in his own or a hired vehicle and gets paid after delivery of the nuts. In this case, the transportation cost is included in the over-all negotiation. The desiccated coconut manufacturers usually procure nuts directly from the farmers through their agents on a contract-sale basis. In some cases, the factory buys the nuts from dealers. Some dealers give cash advances to the farmers; this practice often results in a contract sale, since the farmers are forced to sell their crop to theses dealers in return for the credit extended[5].

Indonesia: Coconut and copra in Indonesia are produced by many small holders scattered through out the country, whose financial condition is very

weak. Due to the deterioration of infrastructure and of the credit system in Indonesia, the farmers depend largely on salesmen, whose business is purchasing, selling, transporting, and giving credit to the farmers. Because of their weak financial position, possessing neither the tools of production nor the means of transportation and because of the very bad condition of the roads in the producing areas, the farmers are compelled to depend on middlemen who are in fact not only the buyers of farm products but also the suppliers of goods needed by these farmers. The loans they give to farmers are chiefly loans in kind, such as rice, textile, thread, sugar, cigarettes and other things needed by the farmers. These loans are repayable in the form of coconut produce or copra. From this, it is very clear that the bargaining position of the small farmers towards these middlemen creditors is very weak; this results in the farmers' receiving low prices for their produce. Another cause for the relatively low level of prices they receive is the existence of various kinds of levies, either formal or informal, within the marketing process[6].

Malaysia: The internal marketing of coconuts in Malaysia is done through the sale of coconuts by small holders to dealers who make copra and sell it to mills or exporters, and to dealers or exporters who export half-husked coconuts[7].

India: In the assembling and distribution of tender coconuts in India, the people or agencies concerned are the producers, contractors, internal merchants, retailers and hawkers. The price spread in the marketing of tender coconuts from the producer to the consumer ranges from 56 to 75 per cent. For the marketing of mature nuts, those concerned are the producers, contractors, copra makers, chekku owners(indigenous oil-crushers), village merchants, wholesale merchants and commission agents. Co-operative societies have also recently come into the picture, but their impact is

insignificant. Size is the important factor considered in selling tender coconuts and mature coconuts. In general, marketing procedures for coconuts and coconut products in India have still not developed along efficient lines and need to be improved considerably[8].

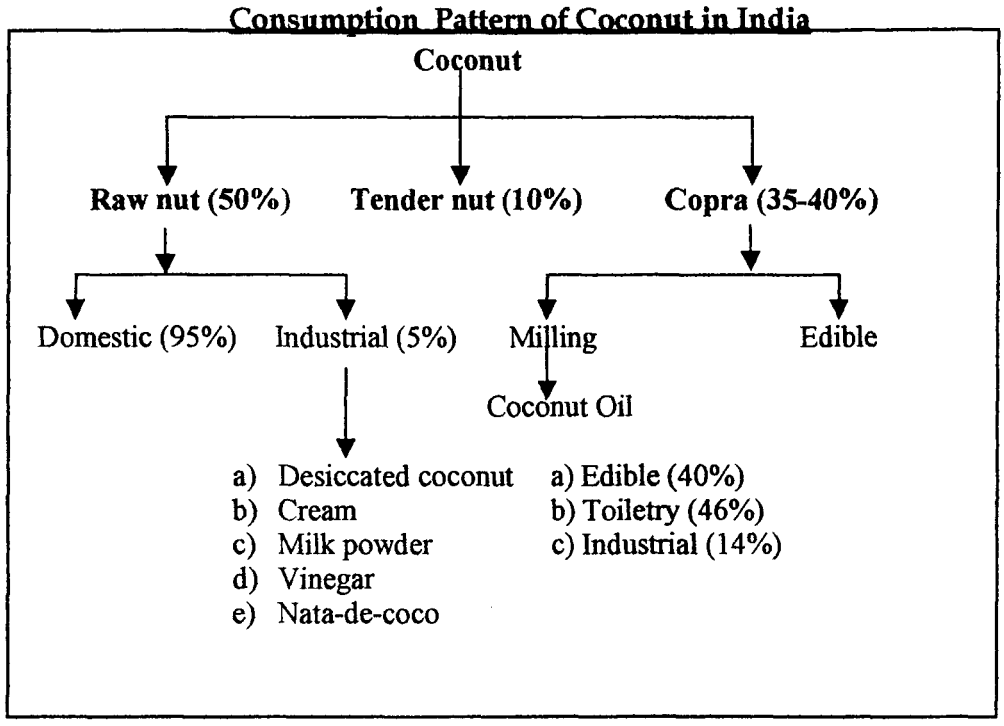
Consumption Pattern of Coconuts

Coconuts are used either for commercial purposes (for the production of copra and desiccated coconut) or as food nuts and for the production of home-made oil. In India, the entire production of coconuts is consumed within the country itself as tender coconuts, mature coconuts, edible copra or coconut oil. Of the total production of nuts in the country, 57 per cent is used as raw nuts and the rest is processed into different products; 43 per cent is converted into copra, of which approximately 20 per cent goes for edible purposes and the balance for milling. It is estimated that 18 per cent of the total production of mature nuts is retained by the producers for their own needs, and that the balance represents the marketable surplus[9].

The coconut utilized for industrial exploitation is roughly 35-40 per cent and that consumed for food and beverage purpose is 55-60 per cent. Milling copra continues to be the major coconut product in India. The consumption of edible copra is mainly confined to North Indian States. Of the 55-60 per cent consumed for food and beverage, 48 per cent is used for edible and religious purposes, and 10-11 per cent as tender coconut. Roughly 30-35 per cent is used for milling copra for oil extraction, 8 per cent for the processed into products like desiccated coconut and coconut cream. In the traditional coconut growing State of Kerala, roughly 40 per cent of the total production of coconut is used as raw nuts and 60 per cent used for making copra[10].

Coconut oil for edible uses is mainly confined to Kerala and to a lesser extent in Tamil Nadu. Out of the total production of coconut oil in

India, about 40 per cent is consumed for edible purpose, 46 per cent for industrial uses. At the all India level, the toiletry sector is the major consumer, since coconut oil is used throughout the country as a hair oil and body massage oil, either as such, or in medicated form.



The studies undertaken in this regard have shown that the total consumption of oil within the state is about 80,000 tonnes. The estimates indicated a consumption of 68,000 tonnes in the households and other establishments for edible purposes. The non-edible toiletry uses in the households in Kerala may be around 12,000 tonnes.

In the rest of the country the total availability of oil for various end uses is around 165,000 to 170,000 tonnes. In the organized food industry, especially in vanaspathi, the use of coconut oil is practically nil, with only insignificant quantity being used in bakery and confectionary units. In the edible sector, the demand for coconut oil is influenced by groundnut,

sesame and mustard oils. Besides, fair quantities of other oils such as sunflower oil, soybean oil, cotton seed oil, etc. are also used for edible purposes. Over 90 per cent of the supplies of groundnut oil, sesame oil and mustard oil are used in the edible sector in one form or other. Bulk of the supplies of other oils is also utilized for edible purposes. Though many oils are used for edible purposes in the households, the influence of one or a group of oils on the demand pattern of other oils is not significant. This is mainly because of the characteristic qualities of each oil and the differential food habits of the population. While coconut oil could maintain the demand in the households, it has lost a considerable portion of the markets in the edible industrial sector consequent on the substitution facilitated by the easy availability of other oils and fats at comparatively cheaper prices. Taking the country as a whole, the consumption of coconut oil in edible end uses is likely to be 1 lakh tonnes or 40 per cent of the total output[11].

In the non-edible sector, soap industry is the only organized area where coconut oil finds bulk use. Even there, the use is very much restricted in the organized sector and intake of any significance is visible only in the unorganised soap units. During the last decade, the use of coconut oil in soap industry has recorded a steep decline from 25-30 per cent to around two percent. The official estimate of the currant consumption of coconut oil in soap manufacture is 20,000 tonnes only against the annual output of about 10 lakh tonnes of toilet and laundry soaps. However, sizeable quantity of the oil may be in use in the unregistered units. As it is, the estimated consumption of coconut oil in all the non-edible end uses in the country is about 1.5 lakhs tonnes or 60 per cent of the total supplies of oil.

In short, coconut oil is considered indispensable and price inelastic for edible and toiletry uses in the household sector and for soap manufacture in the small scale soap units in the rural areas. The normal

price fluctuations do not influence the toiletry demand because slight changes on the expenditure on this small item do not disturb the household budget. In the organized industrial sector, the demand is considered elastic and the use of coconut oil depends very much on the price factor, if the price is very favourable in relation to that of other major oils and fats coconut oil can become a substitute for other oils and fats. Recent studies have shown that about 1.9 lakhs tonnes of coconut oil fall within the range of inelastic demand and the demand for the balance around 55,000 tonnes of oil is influenced by price[12].

Marketing Practices of Coconut in Kerala

In Kerala most of the farmers did not resort to any processing activity after harvesting. Table 3.2 gives the pattern of selling coconut by coconut growers in Kerala.

Table 3.2: Pattern of Selling Coconut by Farmers in Kerala, product-wise

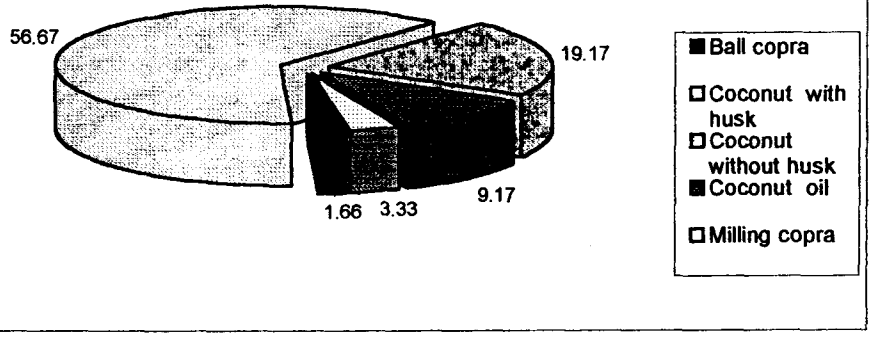
Per cent of farmers selling as					
Coconut (with husk)	**Coconut** (without husk)	**Milling Copra**	**Ball Copra**	**Coconut Oil**	**Total**
(1)	(2)	(3)	(4)	(5)	(6)
56.67	19.17	3.33	1.66	9.17	100

Source: Indian Journal of Agricultural Economics, Vol. 56, No. 4, Oct-Dec 2001

About 77 percent of the farmers sold their harvest as coconut itself. This included farmers who sold coconuts with husk (56.67%) and those without husk (19.17%)[13]. The latter was noticed mostly in parts of Thrissur district where the buyers got the nuts husked by engaging their own labourers. In this process, the buyer resorted to some slight downward

adjustments in his price as compensation for getting the nuts dehusked and for leaving the husks at the farmer's disposal. Only about 24 percent of the farmers undertook any processing activity. This included farmers who sold as milling copra (3.33%), ball copra (11.66%) and coconut oil (9.17%). The pattern of selling coconut by farmers are also depicted in Figure 4.1

Fig. 4.1 Pattern of Selling Coconut by Farmers in Kerala (Product-wise)



The distribution of farmers according to the type of buyers to whom they had sold the product is presented in Table 3.3

Table 3.3: Pattern of sale of coconut in Kerala, buyer wise

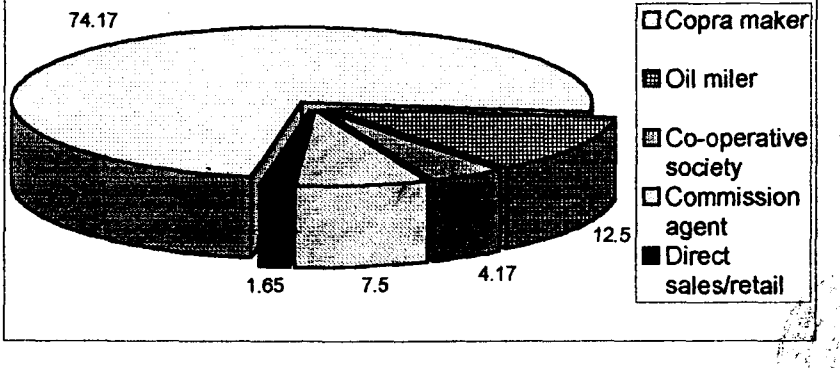
Per cent of growers selling coconut to				
Copra maker (1)	Oil Miller (2)	Co-operative society (3)	Commission agent (4)	Direct sales/retail (5)
74.17	12.50	4.17	7.50	1.65

Source: Indian Journal of Agricultural Economics, Vol. 56, No. 4, Oct-Dec 2001

A majority of farmers - nearly 74 percent -sold coconut to copra makers who purchased nuts from the farmers and converted these to copra. The second major buyer was the oil miller (12.5%), followed by the

commission agent, co-operative society and direct market sales in that order (Figure 4.2).

Fig. 4.2 Pattern of Sale of Coconut in Kerala (Buyer-wise)



Marketing Channels in Coconut Trade in Kerala

Marketing channels are essentially the routes through which the harvested produce reaches the consumer. These channels consist of a number of intermediaries who may either just exchange the produce or change the form of the produce to add value. These intermediaries incurred some costs in their operations as well as earned some profit out of it. Four different kinds of marketing channels were prevalent in the Kerala[14]. They were:

1. Farmer - Copra maker - Oil miller -Consumer
2. Farmer - Oil miller - Consumer
3. Farmer - Commission agent - Upcountry consumer
4. Farmer - Co-operative society - Kerafed/Marketfed - Consumer

In Channel I, the coconut farmers would harvest the coconuts after informing the local copra makers about the day of harvest. The copra maker would in turn visit the farm on the day of harvest with his truck, and transport the harvested produce to his place wherein he would convert the produce into copra and transport the same to the oil mill of his choice for sale. In the oil mill, the millers would mill the copra into oil and sell the

same to the retailer who in turn would sell to the local consumer. Accordingly in Channel I, the copra makers, oil millers and retailers were the prime intermediaries.

In channel II, the farmer himself would convert the produce into copra and transport the copra, at his own cost, to the nearby oil mill and mill the copra into oil at the prefixed charge and sell the oil and oilcake to the miller himself. The oil miller would in turn transport the same to the urban markets for sale. Limited numbers of intermediaries are the main advantages of this channel.

In channel III, the farmer would transact the ball copra instead of milling copra. For this, he would store the nuts for a period not less than 9 months at a place wherein a fair amount of heat would be made available for conversion into ball copra. The ball copra would then be sold to the commission agents at his place. The commission agent would resort to certain processing activities like cutting, drying, sorting and packing. Cutting involved splitting the ball copra into two equal halves. This split copra would then be dried either in sun or by using mechanical dryers (that make use of sulphur as an ingredient) and would be sorted into small and big pieces. These pieces would then be packed in good quality gunny bags and transported to upcountry markets. This edible copra is very much in demand as a dry fruit and also in the preparation of sweets for social and religious purposes in North India states.

In Channel IV, the farmers would transport their harvested produce to the nearby co-operative societies. These societies would in turn convert the nuts into copra and transport them to the godown of Kerafed or Marketfed. The Federations would later mill the copra into coconut oil and market the same in packs and bottles of different capacities.

An examination of the marketing costs and margins in the channels would help us to understand the transactions better and thus quantify the gains and losses of the transacting agents. Table 3.4 shows clearly the

marketing cost of different marketing channels.

Table 3.4: Price spread for coconut in different marketing channels

(Rs./1000 nuts or equivalent of copra or coconut oil)

Item	Channel I	Channel II	Channel III	Channel IV
1. Price of coconuts received by farmer	3,997.53	3,953.30	7,512.30	5,020.00
	(69.83)	*(72.25)*	*(89.22)*	*(89.94)*
2. Marketing costs of farmer	16.13	1,163.43	901.98	118.35
	(0.28)	*(21.26)*	*(10.71)*	*(2.12)*
3. Actual (net) realisation of the farmer	3,981.40	6,212.47	6,610.32	4,901.65
	(69.55)	*(113.54)*	*(78.51)*	*(87.82)*
4. Marketing cost of the maker (C!/commission agent (C3)/co-operative society (C4)	573.22	-	760.25	188.03
	(10.01)		*(9.03)*	*(3.37)*
5. Realisation of the copra maker (C1)/commission agent (C3)/co-operative society (C4)from copra,	5,199.12	-	8,420.15*	5,397.93
	(90.82)		*(100.00)*	*(96.71)*
6. Marketing margin of the copra maker (C1)/ commission agent(C3)/co-operative society(C4)	628.37	-	147.60	189.70
	(10.98)		*(1.75)*	*(3.4)*
7. Marketing cost of the oil miller	204.37	104.50	-	280.45**
	(3.57)	*(1.91)*		*(5.02)*
8. Marketing margin of the oil miller	733.21	114.50	-	277.19
	(12.81)	*(2.09)*		*(4.97)*
9. Realisation of oil miller from oil and cake	5,724.70	5,471.55	-	5,581.46
	(100.00)	*(100.00)*		*(100.00)*
10. Producer's share of the consumer's price (in %) (price spread)	69.83	87.94	78.51	89.94
11. Total marketing cost	793.72	1,267.93	1,662.23	586.83
	(13.86)	*(23.17)*	*(19.74)*	*(10.51)*
12. Total marketing margin	1,361.58	114.50	147.60	466.89
	(23.71)	*(2.09)*	*(1.75)*	*(8.37)*

Source: :Indian Journal of Agricultural Economics, Vol. 56, No. 4, Oct-Dec 2001

Notes:-

i. Assumed copra recovery rate/1000 nuts = 15.12 %; Assumed oil recovery rate/1000 nuts = 65 %.

ii. Figures in parentheses denote percentages to the final price.

iii. The figure 113.54 in the third row is due to the non-inclusion of husk and shell price in the final price.

* Only for copra ** Here the oil miller is Kerafed.

In channel I, the gross price received by the farmer was Rs. 3,997.53 per 1000 coconuts and it constituted 69.83 per cent of the final price. The assembling charges incurred by the farmer after the harvest of nuts were also included as the marketing costs of the farmer as it fell outside the purview of the harvesting charges. The net price received by the farmer amounted to 69.55 per cent of the final price. The total marketing costs incurred by the copra maker accounted for 10 per cent of the final price. The marketing costs of the copra maker consisted of the costs in transporting the nuts from the farm to his place, dehusking, breaking the nuts, drying, deshelling the copra and transporting the copra to the oil mills. The total realisation of the copra maker from copra, coconut husks and coconut shell formed 90.82 per cent of the final price. The miscellaneous costs included 2 per cent purchase tax on coconut oil and oil cake, brokerages and market cess. The total marketing cost of the oil miller formed only 3.57 per cent of initial price, while the marketing margins earned by the copra respectively. Considering the magnitude of the marketing costs, the marketing margins were relatively higher which an indicator of inefficiency in marketing was. The producer's share of the consumer's rupee was only 69.83 per cent.

In channel II, i.e., Farmer - Oil miller - Consumer, the functions carried out by the copra makers in channel I were bypassed with the farmer himself carrying out these functions. He converted the nuts into copra, milled it and sold it to the oil miller. The costs incurred by the farmer for the above functions formed 21.26 per cent of the final price. The net realisation of the farmer was Rs. 5,049.04, which formed 87.94 per cent of the final price. This is a major advantage of this channel. If the farmer had sold as coconut itself, he would have obtained only Rs. 3,953.30 per 1000 nuts. This meant that he obtained an additional amount of Rs. 1,095.74 per 1000 nuts after entering into the first stage of processing, i.e., copra making. This was due to the exclusion of the marketing margins of the copra maker and oil miller and

also due to the additional amount realized through the sale of husks and shells. The marketing cost of the oil miller was Rs. 104.50 per 1000 nuts equivalent oil, which included the transporting cost incurred by him in taking the oil to the urban market. His margin was only 2.09 per cent of the final price. The producer's share of the consumer's price was found to be 87.94 per cent.

In channel III, i.e., Farmer - Commission agent - Upcountry consumer, the farmer himself converted the nuts into copra (ball copra) and sold to the commission agent, who exported it after processing to upcountry markets like Mumbai. The final price used here was the price of 'Rajpur Copra' in the Mumbai market and not coconut oil as in the case of other channels. The marketing cost of the farmer constituted the costs of copra making, transporting costs to the commission agent's place, loading and unloading charges and the interest lost had he deposited the amount realized by the sale of coconuts at the harvesting stage itself. (The period of selling as ball copra was 10 months after harvest). The cost of copra making was 37.76 per cent of the total marketing cost. The share of the producer in the consumer's price was found to be 78.51 per cent.

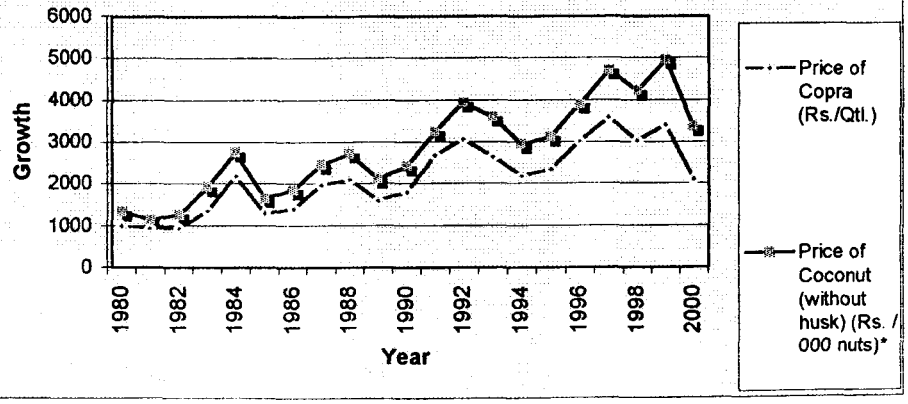
The IVth channel was Farmer - Co-operative society - Kerafed - Consumer. In this channel, the farmer after the harvest transported the nuts to the societies for selling. The net realisation of the farmer for 1000 nuts was 87.82 per cent of the final price. The marketing cost of the society accounted for 3.37 per cent of the final price. Further, the society as a middleman provided better working conditions to the workers by way of medical aid. The marketing margin was only 3.40 per cent of the final price. This was another indication of efficiency in the channel. The total marketing cost of Kerafed to whom the societies sold the copra was Rs. 280.45 per 1000 nuts equivalent copra. The final realisation of Kerafed was Rs. 5,581.46 for 1000

nuts equivalent, which meant that the marketing margin of Kerafed was Rs. 277.19 for the same quantity. The producer returns per consumer's rupee was 89.94 per cent.

Price Movement in Coconut

The most distressing features of the coconut economy of Kerala during the past two decades, has been the abnormal fluctuation in prices - both seasonal and cyclical, despite the steady increase on production during the same period. As could be seen from the Figure 4.3 (Detailed Table is given in *Appendix V*), coconut prices exhibited four peaks and four troughs during the past two decades. Such variations in prices make difficult supply management, demand satisfaction and optimum use of resources. As coconut production in Kerala is a small farm enterprise, price variation affect the income of a large number of small cultivators and consequently their purchasing power. Further, studies in India and elsewhere have shown that agricultural production is responsive to price changes[15]. Hence, the producer should be assured of a reasonable price to increase the production and avoid shortage in future

Fig. 4.3 Annual Average Whole Sale Price of Copra and Coconut (Without husk) - 1980 - 2000



A review of price trend during the two decades reveals that the period 1980 to 2000 witnessed four peaks and four troughs, each cycle covering an average of four years duration. The fluctuations during the later period appear to be more violent than earlier. The average price of copra rose by 119.7 per cent from Rs. 995 per quintal in 1980 to Rs. 2186 in 1984 and declined to Rs. 1300 in the next year itself (-40.5%). Then it gradually picked up and reached Rs. 2,099 per quintal in 1988, (the rate of increase was 61.5%) and again declined to Rs. 1595 in 1989(-24%). The next peak was recorded in 1992 at Rs. 3,055 per quintal (increase 0f 91.5%) and then after a set back during the next two years, the price was gradually picked up during the subsequent years and it reached to an all time maximum of Rs. 3572 during 1997, then the same characteristic of declining trend shows in 2000 by declining the price to Rs. 2,102. The linear trend of prices during the period 1980 to 2000 shows an average rate of increase of Rs. 144.6 per year. However, frequent fluctuations in prices have been one of the distressing features affecting the cultivators of this crop. The yearly variability of prices during this period has worked out to 37.16 (Table 3.5). It is interesting to note that the variability coefficient was 30.24 during 1980 to 1990 as compared to 19.68 during the period 1990 to 2000. Almost the same characteristic of price variation was reported in the coconut prices also. It will be more clear from the *Appendix V*. The market intervention programmes implemented from time to time since 1986 might have helped to reduce the price variation during the later period.

Table 3.5: Coefficient of Variation in the Prices of Coconut and Copra

Years	Price of coconut (Rs./100 nuts)			Year	Price of Copra (Rs./Qtl.)		
	Mean	S.D	C.V		Mean	S.D	C.V
1980 To 1990	1917.9	557.2	29.05	1980 To 1990	1478.9	447.14	30.24
1990 To 2000	3665.36	728.90	19.89	1990 To 2000	2710.36	533.32	19.68
1980 To 2000	2833.24	1089.87	38.47	1980 To 2000	2124.43	789.5	37.16

Source: Computed from secondary data.

Variation in Retail Price

Table 3.6 shows that the prices of coconut and coconut oil witnessed unprecedented fall. Price of coconut declined by 42.1% from Rs.616.79 for 100 numbers in 1999 to Rs.357.14 in 2000 and that of coconut oil by 42.68% from Rs.61.13 per Kg in 1999 to Rs.35.04 in 2000. Such a sharp fall in the prices of coconut oil had a shattering impact on the agrarian economy of Kerala.

Table 3.6: Average Retail price of Coconut and Coconut Oil during 1995 to 2000

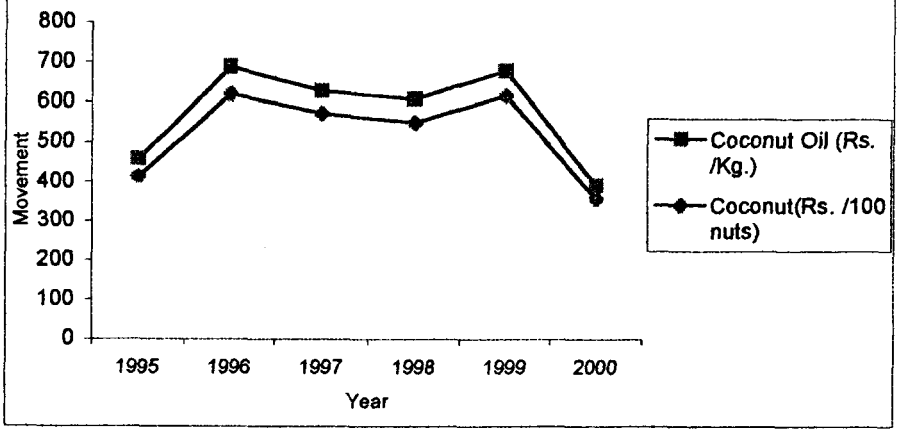
Year	Coconut(Rs./100 nuts)	Coconut Oil (Rs./Kg.)
1995	413.57(----)	44.30(----)
1996	620.00 (49.90)	67.91 (53.3)
1997	571.92 (-7.75)	56.81 (-16.35)
1998	548.93 (-4.02)	59.21 (4.22)
1999	616.79 (12.36)	61.13 (3.24)
2000	357.14 (-42.10)	35.04 (-42.68)

Source: Economic Review 2000, State Planning Board, Trivandrum

Note: Figures in parentheses shows % change over previous year

From the Fig. 4.4, it is clear that both the products shows the same characteristics of price fluctuation except the price of coconut oil during 1998, which shows an increase of 4.22%, but at the same time coconut price shows a decreasing trend by -4.02% (Table 3.6).

Fig. 4.4 Average Retail Price of Coconut and Coconut Oil - 1995 to 2000



Price in Relation to Seasonal Variation in Production

Coconut prices also exhibited seasonal variations which are partly the result of weather induced variations in production. Besides, religious ceremonies, festivals etc. have also some impact on the demand for coconut and consequently its price. Seasonal fluctuations are regular and predictable to a certain degree. Therefore, strategies based on seasonality will help to reduce problems of price changes. As may be seen from Table 3.7 and Fig. 4.5, the seasonal index of coconut prices was lowest for the month of July (92 points) and highest during December (112 points). The price usually remained above the average during November of March and below the average during March to September. It is significant that the seasonality in prices is correlated with the seasonality in production of coconut and yield of coconut. It is noted that nearly 26 per cent of the production is during the

months, April-May when the price reaches its seasonal bottom (Table 3.7). Indices of production and price of coconut/ copra for the last 20 years are given in *Appendix VI*).

Table 3.7: Seasonal Indices of Prices, Production & Yield of Coconut

	Index of		
Months	**Price***	**Production#**	**Yield (in %)+**
January	104.25	76.80	6.40
February	107.84	92.40	7.70
March	102.42	117.60	9.80
April	96.73	169.20	14.10
May	96.24	140.40	11.70
June	94.45	117.60	9.80
July	92.37	98.40	8.20
August	92.50	92.40	7.70
September	97.35	78.00	6.50
October	99.76	67.20	5.60
November	104.53	78.00	6.50
December	111.58	72.00	6.00
Average	100.00	100.00	100.00

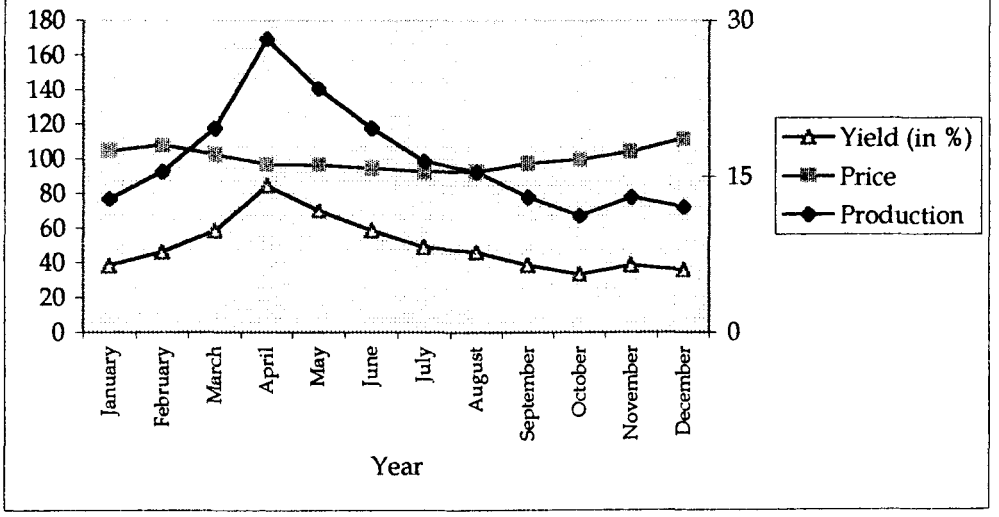
**Source: Economics & Statistics*

#Source: Kerafed (1995)

+Source: Coconut Statistics, CDB, Kochi

Thus, analysis of the trend and seasonal pattern of price behaviour of coconut indicates that changes in supply (production) have significant influence in determining the price levels.

Fig. 4.5 Seasonal Indices of Prices, Production & Yield of Coconut



Price in Relation to Demand

Reliable estimates of demand for coconut and coconut products are not available. The demand for coconut originates from two sources:

1) Culinary purposes either as raw nuts or in processed form.
2) Industrial use as raw materials for soaps, toilet preparations, ayurvedic and pharmaceutical industries etc.

Although, data regarding various end uses of coconut are not available, according to trade estimates, nearly 60 per cent of the coconut produced in Kerala are used for consumption as raw nuts and 40 per cent is converted into copra, most of which is crushed for oil. It is estimated that about 4 lakh tonnes of coconut oil are produced annually in India of which nearly 30 per cent is used for edible purpose and the remaining 70 per cent for industrial use, such as manufacture of soaps, hair oil, cosmetics and food processing industries[16]. Unfortunately, during the past few years, the demand for coconut oil declined owing to different reasons. Its use for

cooking purposes declined mainly due to a wrong concept of its relation to coronary heart disease and partly due to its relatively high price as compared to competing cooking mediums.

Similarly, the industrial use of coconut oil also declined mainly due to its high prices. Availability of cheaper oils has replaced coconut oil in many industrial applications, especially in soap industry. Since the lower fatty acids present in coconut oil give profuse lather to obtain good soap, coconut oil can be incorporated upto 25 per cent along with other oils. But due to price factor, its use has been reduced to the extent of 5-10 per cent of the total fatty acid content except in the case of baby soaps. According to trade circles, the demand for coconut oil for industrial use is very much elastic at prices ranging between Rs. 2,500 and Rs. 3,000 per quintal. If prices remain stable and competitive, the use of coconut oil in soap industry can be increased substantially.

Price Behaviour of Coconut Oil

In India, the demand for coconut oil is steady over short periods and the prices also maintain the general trend. International prices do not influence the domestic prices. Unusual behaviour in certain years is more related to the changes in the overall supply position of oils and fats in the country than to any other single factor. Whenever there is any significant deficit in the overall supply position of oils and fats in the country, the coconut oil price is the first to react benefiting the coconut growers. Normally, coconut oil prices command a premium over other oils and fats and are not influenced by the availability and price behaviour of any individual oil in the country.

Marketing condition began to change since the beginning of this decade with the emergence of Tamil Nadu as a competitor in this field. Phenomenal changes are visible since then in the cyclical fluctuations in prices during season and lean periods. Table 3.8 presents the situation in a proper perspective.

Very often, coconut oil prices exhibit unpredictable daily fluctuations causing concern to the producers, processors, traders and end users. Further, the variations in the prices observed within a month do not maintain any uniform pattern over different months. It may be as low as one per cent in some months and as high as 24 percent in some other months. This uncertainty in the price development always breeds an element of risk for all categories of processors.

Coconut oil prices, in general are influenced by demand and supply, availability of cheaper substitutes, overall availability of other vegetable oils and import policy of the Government. Coconut oil prices generally command a premium over that of other vegetable oils in the country. The variations in prices observed during season and lean periods do not maintain any uniform pattern over years. The fluctuations vary from year to year, season to off-season depending upon availability and demand. Table 3.8 will reveal the nature of fluctuation during the last decade.

Table 3.8: Highest and Lowest Prices of Coconut Oil at Kochi Market (Rs. per quintal)

Year	Month	Highest (Rs.)	Month	Lowest (Rs.)
1988	December	3650	May	2825
1989	January	3225	July	2080
1990	November	3950	January	2240
1991	November	5500	March	3200
1992	January	5400	February	3900
1993	February	4900	December	3200
1994	November	3750	May	2960
1995	September	4400	March	2995
1996	December	6500	March	3600
1997	January	6825	October	4375
1998	December	5600	May	3800
1999	November	5888	March	3832
2000	April	3691	September	2790

Source: Coconut Statistics, CDB, Kochi (2001)

Table shows that the months from November to February give highest prices for coconut oil and March to May gives least prices but there are some exceptions in certain years. It shows irregular fluctuations in the prices of coconut and its value added products.

The high price premium and the erratic behaviour in prices have promoted both economic and technical substitutions in many end uses where coconut oil was once considered indispensable. A study of the demand behaviour of coconut oil shows that when prices rule low, coconut oil can command an increased demand for edible use in Kerala[17]. Of late with the availability of Palmolein at less than half the prices of coconut oil,

many consumers have gradually switched over to Palmolein. Even when the prices of all other edible oils show a slippery slope, coconut oil price remains at higher level. Palmolein was widely used in Kerala during the early eighties. Though subsequently the demand fell, now Palmolein is making a come back due to its large scale imports and low price

While all other edible oils are ruling 30-40 per cent lower than the previous year's price, coconut oil prices are 25 per cent higher than during the period last year. For example, groundnut oil prices were ruling at Rs.5000 per quintal during the period last year, compared to the ruling price of July 1999 at Rs.3600. Like wise Soya oil prices were ruling at Rs.4000 in 1998 compared to Rs.2300 in 1999 and sunflower oil price at Rs.4200 in 1998 compared to Rs.2300 in1999. The Palmolein prices were at Rs.4000 in 1998 and in July 1999 it was at Rs.2000.

One of the factors for this high price of coconut oil even during easy availability of low priced Palmolein in the state is the decline in the production of coconuts by about 10-15 percent in the land of coconuts.. Moreover, Kerala's share in the total production of copra in the country has declined to 55 percent from 90 percent a few years ago. Another factor is the demand for refined coconut oil from the industrial sector such as biscuit, paint etc.

In earlier years, groundnut oil used to determine the price trend of other edible oils such as, mustard, rapeseed, sunflower, Soya oils and imported Palmolein, whereas, coconut oil moved in a separate direction of its own according to demand and supply. This significant change in the edible oil scenario in the country has come about due to changes in Governments' policies. Edible oil imports are now allowed under OGL, which has led to the markets being flooded with low priced edible oils, such as Palmolein and sunflower oil. As such the preference of consumers is

shifting to low priced oils. Because of this, groundnut oil has been displaced from its role as the trend setter in the market[18].

As already stated, about 46,000 tonnes of coconut oil moves out of Kerala for use in other states. But in other states, especially in Maharashtra where the milling copra obtained from Kerala is crushed, substantial quantity of oil becomes available over which the oil markets in Kerala have no control. Consequently, there is always a price difference between the Cochin and Bombay quotations. The prices are invariably high at Bombay and for different years the price premium is found to vary from 5 to 10% over that quoted at Cochin. This price premium can place the millers and traders in Maharashtra at a very advantageous position compared to their counterparts in Kerala even after covering the additional expenses like tax differences, commission, transporting and other incidental expenses. Naturally, the oil prices at Cochin and other centers in Kerala are determined by the Bombay quotations and the demand from upcountry centers[19].

The inter-relationship between the price behaviour and the demand for coconut oil in the industrial sector could be summed up as follow[20]:

1. Price is the major factor affecting the demand for coconut oil
2. Owing to the uncertainty reflecting both on the supplies and prices, coconut oil is not considered dependable by the organized end users.
3. Though vulnerable to substitution, the special qualities of coconut oil enable it to enjoy a preferential treatment where product quality is important.
4. By minimizing the price fluctuations and ensuring stability in the supplies at prices not very much higher than those of other oils and fats, particularly groundnut oil, the present demand could be improved substantially.

Coconut Oil Market at Cochin

Cochin is the leading coconut oil market in the country from time immemorial. The Cochin Oil Merchants' Association is an apex body and represents all segments of copra, coconut oil trade and industry in the state. Transaction of ready coconut oil is done in Cochin generally through the registered brokers and between members of the Association. In some cases transactions are also done between the buyers and sellers directly. Such transactions are not recorded with the Association and hence rates of such transactions are not quoted by the Association. Transactions entered into between a buyer and sellers who are members of the Association are only taken into consideration for the purpose of giving rates by the Association. Moreover, the delivery of the goods shall be within the limits of Cochin Corporation. Except on Sundays and other public holidays, the market remains open between 10.00 a.m. and 4.00 p.m. and on Saturday between 10.00 a.m. and 1.00 p.m. The rates of the last transaction done before the closing time are given as the closing rate of the day. The brokers after taking offers from both the buyers and sellers negotiate the rates with the buyers who are mainly agents of up-country dealers usually quote the price in consultation with their principles. The brokers have to inform the Association about the details of the transactions, such as the name of the buyer, seller, and date of delivery and quantity, on the same day in the prescribed form[21]. (Average wholesale price of coconut oil in the important markets of Kerala are given in *Appendix VII*).

Foreign Trade in Coconut

Even though India is one of the largest producers of coconut in the world, she has a substantial deficit in domestic production of coconuts in relation to domestic consumption. India contributes more than 24 percent of the world production of coconut. However, the share of India in the world

production of copra is less than 13.8 percent. At the same time, Philippines which shares nearly 24 percent of the world production of coconut, accounts for 43 percent in the world production of copra. Similarly, Indonesia which accounts for 24 percent of the world production of coconut, shares 22.7 percent of the world production of copra. The high rate of domestic consumption is largely responsible for the lower production of copra in India in comparison to Philippines or Indonesia[22]. Another reason for the high rate of consumption of raw coconut in India may be attributed to the population factor and wider usage for religious purposes. Table 3.9 indicates the trend of production and export of copra in the world.

Table 3.9: Production and Export of Copra of the Important Coconut Producing Countries *(in million MT)*

Year	India		Philippines		Indonesia		Sri Lanka	
	Production	Export	Production	Export	Production	Export	Production	Export
1990-91	0.465	Nil	1.883	0.081	1.392	Neg.	0.061	0.008
1991-92	0.450	Nil	1.890	0.034	1.100	0.010	0.055	0.006
1992-93	0.550	Nil	1.900	0.027	1.127	0.009	0.041	0.005
1998-99	0.755	Nil	2.300	....	1.400	.....	0.102	.....

Source: Indian Coconut Journal, Vol. xxx No.5, September 1999, p46

Major players in the international trade of coconut products are Philippines, Indonesia, Sri Lanka, Malaysia and Thailand, and very recently Vietnam has also entered into the international arena.

Philippines exported 0.034 million MT of copra, Indonesia and Sri Lanka exported 0.010 and 0.006 million MT of copra respectively in 1991-92. But no countries have exported any quantity of copra during 1998-99. The entire amount of copra produced in India is consumed internally.

Export trade in India in coconut products is practically restricted to coir products and its share in the world market is 23 percent. Sri Lanka controls 72 percent of the world coir export. The exports from India are coir

yarn (50%) followed by mat and matting (48%). Rugs, curled fibre, etc. make up the rest of the export.

In other commodities, India has no regular export trade except of course in oil cake which is also on the decline mainly because of the unfavorable shipping cost and low international price of the product. When import of copra was allowed, export of the resultant cake was made compulsory. The low returns from the export trade in cake were compensated by allotting imported copra to various users at a price much below the domestic price. The world export trade in copra meal is now almost equally shared by Indonesia and Philippines. In the coconut oil export trade, Philippines have the monopoly position controlling 60 per cent. Similarly, desiccated coconut export is controlled by Sri Lanka and Philippines. From India, a small quantity of coconuts is exported to the Middle East and some copra and oil to Bangladesh and Nepal as part of trade agreement. The figures of export of coconut, copra, coconut oil and cake for the last 10 years are given in the Table 3.10.

Table 3.10: Export of Coconut Products from India (1991 to 2001)

(Value Rs. In lakhs)

Items	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01
Coconut	0.16	1.17	2.30	13.22	15.47	23.81	35.96	57.55	76.76	169.13
Copra	Nil	Nil	2.81	2.50	0.04	64.29	0.79	18.63	7.00	58.41
Dessicated Coconut	1.45	1.45	2.53	0.04	29.02	122.64	69.86	89.22	98.26	31.28
Coconut Oil	33.87	92.91	228.49	379.20	392.38	554.33	1020.58	649.71	1306.47	1630.23
Oil Cake	Nil	Nil	45.44	Nil	Nil	1.49	3.15	4.20	1.02	85.54
Shell Products	7.55	7.55	91.60	186.27	35.86	73.57	43.44	179.01	444.21	767.60
Coir & Coi Products	7411.63	9595.31	12936.75	17164.02	20684.64	21259.00	23893.00	29219.00	30305.00	31366.25
Total	7454.66	9698.39	13309.92	17745.25	21157.41	22099.13	25066.78	30217.33	32238.72	34108.44

Source: Director General of Commercial Intelligence and Statistics, Calcutta (2002)

Table shows that total export of coconut has increased from Rs.7454.66 lakhs to Rs.34108.44 lakhs during a span of ten years. In the year 1996-97 the value of total coconut products (excluding coir) exported from India was for Rs.22099.13 lakhs, in which Rs. 554.33 lakhs was the contribution of coconut oil and Rs. 122.61 lakhs was contributed by desiccated coconut powder. The other exported items include copra (Rs.64 lakhs) and shell charcoal (Rs.63 lakhs). But it is surprise to know that during this period we have imported coconut oil worth Rs.130 lakhs.

In the year 1997-98 the value of total coconut products exported from India was for Rs.25066.78 lakhs. The total global demand for desiccated coconut powder alone is 1.6 lakhs tonnes. But the Indian production capacity is 35,000 M.T. per year[23]. So Indian production capacity is 22 percent of the global requirement which can be easily increased to 50 percent, and export also can be simultaneously increased.

India's total export of all products put together in the year 2000-01 was Rs.34108.44 lakhs, and the share of coconut products was less than 0.1 percent. This is a parameter which shows our miserable position in the export trade and this makes us to think seriously to find out the ways and means to increase this figure at least within another 2 years. All these figures show that no serious attempt was made in the past to penetrate into the international market either by the Governmental agencies or by the processors. Details of the export of other coconut products from India is given in *Appendix VIII.*

Import of Coconut

India had imported coconuts and desiccated coconuts up to 1972-73 and 1974-75 respectively. By this year India has achieved self sufficiency in coconuts and so enough industrial units have started to produce desiccated

coconut. The details of import of coconut and other coconut products into India for the last 20 years are depicted in Table 3.11

Table 3.11: Import of Coconut Products into India

(Value Rs. In lakhs)

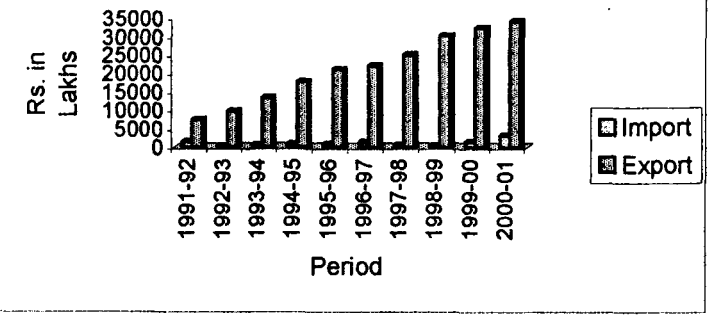
Items	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01
Coconut	Nil	Nil	Nil	Nil	Nil	Nil	5.21	Nil	0.04	21.98
Copra	10.62	Nil	52.35	1.74	Nil	Nil	172.95	Nil	Nil	Nil
Dessicated Coconut	Nil	Nil	Nil	Nil	Nil	Nil	10.30	Nil	0.33	6.58
Coconut Oil	134.48	155.72	534.69	783.13	809.47	1297.80	382.59	432.78	1346.93	1682.92
Oil Cake	Nil	Nil	Nil	1.40	0.59	0.47	Nil	Nil	16.53	1486.04
Shell Products	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	1.30	Nil
Total	1451.10	155.72	587.04	786.27	810.06	1298.27	571.05	432.78	1365.13	3197.52

Source: Compiled from Coconut Statistics.(2001), CDB, Kochi

The Table shows that India had been imported coconut during the year 1997-98 and 2000-01. Similarly copra was also imported during the years 1991-92, 1993-94, 1994-95 and 1997-98. the value of such import was negligible. But India has been importing coconut oil all the years, and the amount of such import is increasing from year to year except during the years 1997-98 and 1998-99. The value in import of coconut oil increased from 134.48 during 1991-92 to Rs.1682.92 during the year 2000-01.

A comparison of the import and export of coconut and its products in terms of value as shown in the Figure 4.6 gives a true picture of foreign trade of coconut of India.

Fig. 4.6 Total Import and Export of Coconut and Its Products - 1991-92 to 2000-01



The factors determining the export quantum of any commodity is its abundance and the international price relative to the domestic prices. India and Indonesia are comparatively larger countries and their domestic demand for oils and fats is more than the supplies. The tendency, therefore, is to consume the entire production within the country itself. The internal prices of coconut products in India are more than double the international prices as could be seen from the Table. 4. 12

Table 3.12: Prices of Coconut Products in the Major Coconut Producing Countries as on 02-04-2001 (in Indian rupees)

Country	Copra/tonnes	Coconut Oil/tonnes
India	19750	29700
Indonesia	5350	8500
Philippines	5850	11000
Sri Lanka	15840	28000
International price		
Copra	US$200	
Coconut Oil	US$300	

Source: Mathrubhumi Daily, April 02, 2001

On the other hand, the internal prices in the major exporting country such as Philippines are less than the international prices and they stand to gain by exports. Consequent to these, the export trade of India in coconut products is confined to coir and coir products.

The most important problem identified in marketing was the lack of adequate and fair price for coconut and its products and the fluctuation – annual and seasonal – in the prices. The presence of intermediaries in the marketing channels led to a low price realisation to the growers. The marketing channel consisting co-operative marketing societies is found to be the best channel, which gives more margin to the coconut growers. So their role in the coconut marketing in Kerala has to be studied to know how far they are influencing the coconut industry. A detailed study of this matter is studying in the next chapter.

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Chapter IV

CO-OPERATIVE MARKETING IN COCONUT - I

- *HISTORY*
- *CO-OPERATIVE MARKETING STRUCTURE*
- *NAFED*
- *MARKETFED*
- *KERAFED*
- *PRICE SUPPORT SCHEME*
- *ROLE OF STATE MARKETING FEDERATION*

IV CO-OPERATIVE MARKETING IN COCONUT - I

COCONUT MARKETING THROUGH STATE MARKETING FEDERATIONS

It is seen that a number of intermediaries absorb a greater proportion of the price paid by the consumers. In this chapter an attempt is made to evaluate the state level co-operatives to know, how far this system has succeeded in regulating the coconut marketing in Kerala.

Co-operative marketing societies by acting as an agency in marketing of coconut can help the growers by reducing, if not eliminating, the various malpractices such as arbitrary deduction from the real prices of the produce, manipulation of weights etc,. It can also increase the growers' share in the consumers' price by the elimination of a large number of middlemen. But various problems forbid the societies in doing the business effectively and the grower has to depend on other agencies. An attempt has been made in this chapter to present the existing structure and working of coconut marketing societies in the state level and their role in the coconut marketing of the state.

The presence of middlemen in the marketing channels, prevented farmers from obtaining a higher share of the final product price. Trade in coconut was essentially monopsonistic in nature with a large number of cultivators selling to only a few village traders, local copra makers and agricultural co-operative societies and this was the reason for the cultivators not being able to get a fair price.

The role of co-operatives is very relevant and it is a must in the case of coconut in Kerala as the coconut holdings are very small and coconut is not generally cultivated on a plantation scale in Kerala. Coconut cultivators are not well organized unlike in the case of plantation crops like rubber, tea, etc. a solution to this is that coconut farmers should get organized through co-operatives so that they will have knowledge and participation in the disposal of their produce to their satisfaction.

History of Co-operative Coconut Marketing in India

The idea of coconut marketing through co-operative societies in India has come into existence by the enactment of Indian Coconut Committee Act, 1944. One of the purposes for which the coconut improvement fund could be utilized under this Act, is the promotion and encouragement of co-operative effort among the coconut growers and in the coconut industries. As the trade in coconut and its products is to a large extent controlled by middlemen, the primary producers do not receive the full benefit of the prices.

There is no separate scheme for the marketing of coconuts and its products. Under the Second and Third Five Year Plans, considerable importance has been given for the development of Co-operative Marketing. Co-operative marketing aims at the elimination of intermediaries, with a view to securing a reasonable price to the cultivators.

Kerala State has taken a lead in organising the Coconut Marketing Co-operative Societies, with the following objects:-

" (1) To arrange for the sale of agricultural produce of the members or purchased by the society, to the best advantage;

(2) To advance loans to members on the security of their produce, raw or processed;

(3) To rent or own godown and processing yards to facilitate storage, processing and sale of goods;

(4) To process raw material belonging to the members or purchased by the society;

(5) To arrange for packing and grading of the agricultural produce of the members;

(6) To supply to members, through their local society or otherwise, manure, seed and implements, etc. required for their farm business, and essential domestic requirements;

(7) To encourage thrift, self-help and co-operation among the members;

(8) To act as agent of primary credit societies, for recovery of production loans given by them to their members; and

(9) To undertake all other activities calculated to further the objects mentioned in Nos. (1) to (8) above"[1].

The membership is limited to (a) a class consisting of co-operative institutions, (b) a class consisting of individual cultivators and sympathisers and (c) a class consisting of traders, commission agents, merchants, etc. having dealings with the society. The (c) class members, however, do not have any right to vote or to participate in the management. Eleven such co-operative societies were functioned in the state. The details of these societies are given in Table 4.1.

Table 4.1 : Coconut Marketing Societies in Kerala State during 1950

Sl.No.	Name of Society	Membership	Paid up capital	Working capital
	Trivandrum district			
71.	Kadakavoor Coconut Marketing and Processing Society No.4219	450	21,860	21,860
	Kollam district			
2.	Chavara Coconut Marketing and Processing Society No.4291	205	20,430	21,419
3.	Perinad Coconut Marketing and Processing Society No.Q49	272	20,100	43,500
4.	Quilon Marketing and Processing Society	273	20,000	20,000
5.	Ezhukone Marketing and Processing Society	200	20,000	20,000
	Alleppey district			
6.	Shertallai Taluk Coconut Marketing and Processing Society No.4218	210	21,546	22,645
7.	Mavelikara Taluk Coconut Marketing Society	281	21,170	21,170
	Trichur district			
8.	Anthicad Copra Marketing Society No.4199	203	21,426	40,651
9.	Chowghat Copra Marketing Society No.73	361	20,310	21,310
10.	Cranganore Copra Marketing Society	265	20,090	20,404
	Cannanore district			
11.	Neleswar Coconut Growers Co-operative	368	22,670	1,55,350

Source: Government of India: Reports on the Marketing of Coconuts and Coconut Products in India, Directorate Marketing and Inspection, 1962

It may also be mentioned here that an amount of Rs. 10,000 was given as Government assistance to each of the above societies. These societies collected the produce of the members for processing. Some of them had been permitted to make outright purchases to a limited extent. These societies are doing processing to a small extent. Some of them had an idea of starting oil mills.

Coconut and copra Marketing Co-operative Societies are also reported to be functioning at Tiptur and Arsikere centres, in Mysore State.

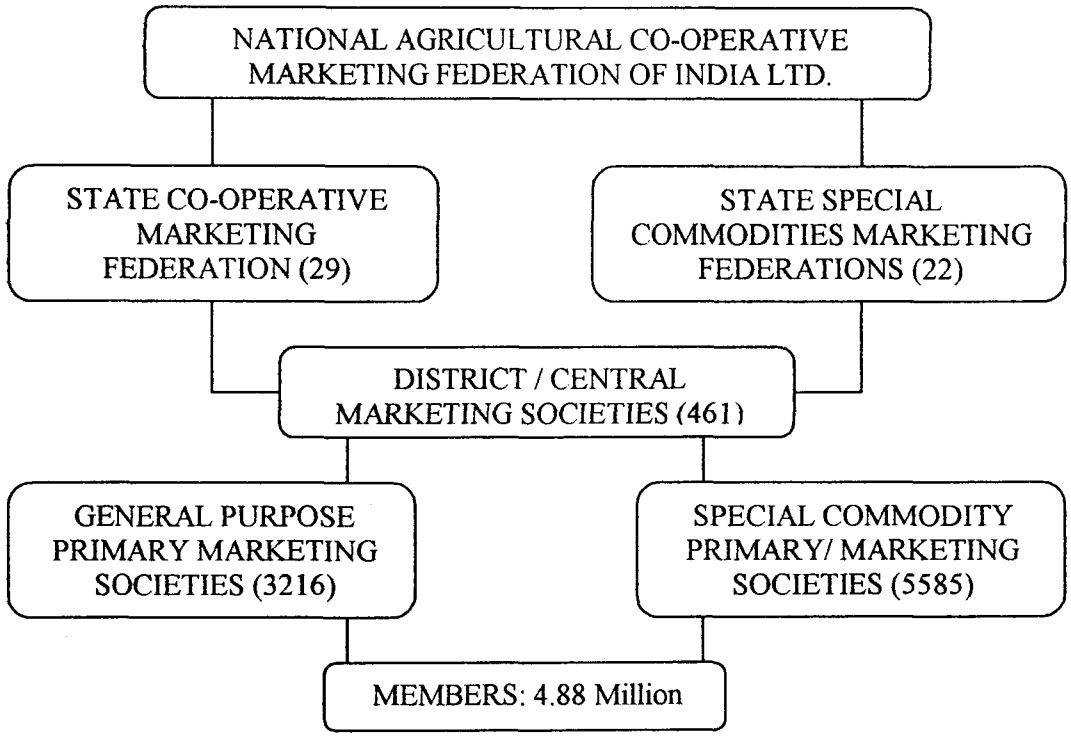
In Andhra Pradesh three Co-operative Marketing Societies, one each at Amalapuram, Kothapeta, and Razole in East Godavari district, were started in March 1959. The Membership of these societies at the end of 1960 was 211 at Amalapuam, 215 at Kothapeta, and 125 at Razole, with a paid up share capital of Rs. 9,180, Rs.8,490 and Rs. 15,990 respectively. These three societies had been sanctioned a Government loan of Rs. 5,000 each, and a subsidy of Rs.21,000 each, for the construction of godowns and installation of *chula*-copra dryers. In Orissa the only Coconut Growers' Co-operative society is the Sakhigopal Coconut Growers' Co-operative society Ltd., at Sakhigopal in Puri district. It has 263 members with a working capital of Rs.10,000. Only growers are allowed to become members. It handles about 2 lakh coconuts per year. In West Bengal, there are two co-operative societies, dealing with coconuts along with other commodities. Their share capital is reported to be Rs. 1,500 each, with a membership of 60 and 90 respectively[2].

Present Structure of Co-operative Marketing Societies

In India, marketing co-operatives were first conceived as a three tier structure with primary cooperatives at the village level, state federations at the state level and the National Federation at the all India level. Figure 4.1 gives the present structure of agricultural marketing co-operative societies in India and its membership pattern.

Agricultural Marketing Co-operatives

Figure 4.1: Present Structure of Co-operative marketing societies in India



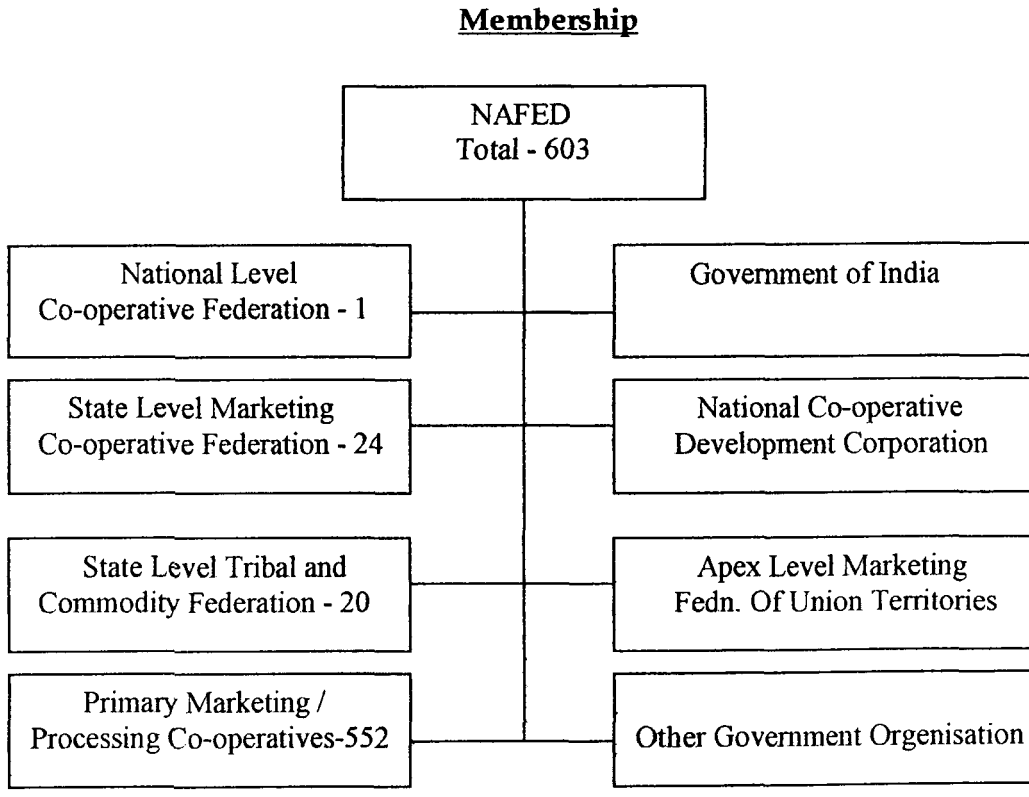
The Figure 4.1 given above shows that the networks of the co-operative marketing societies in the country are very wide and it can support wide range of commodities. About 4.88 million farmers of the country have become the members of the primary level marketing societies and all the state government have the apex level marketing societies, which are acting as the connection link between the primary level marketing societies and the Nafed[3].

National Agricultural Co-operative Marketing Federation (NAFED)

The National Agricultural Co-operative Marketing Federation of India Limited (NAFED) came into existence on October 2, 1958 to coordinate

the marketing strategy on a nation – wide basis for various commodities, particularly those which are grown in more than one state. In areas where lower level co-operative units have not been able to help the grower, Nafed has stepped in. The role of Nafed in coconut marketing is confined to the market intervention programmes at times when there is severe price depression in coconut market price. So that prices can be stabilized at a reasonable level, benefiting thereby not only the producers but also the consumers.

Fig. 4.2 : Membership Pattern of NAFED



Main Functions of Nafed

- Marketing and processing of Agricultural produce in the Country and Exports

- Nodal agency of Government of India for price support operations
- Undertakes inter-state trade to stablise consumer prices in agricultural commodities

State Co-operative Marketing Federation -Functions

- Marketing and processing of agricultural produce.
- Coordinate member societies in marketing.
- Price support and market intervention operations as an agency of NAFED. Provide remunerative prices to farmers for their produce

District / Central Marketing Society - Functions

- Coordinate primary agricultural produce.
- Undertake inter district trade in agricultural produce.

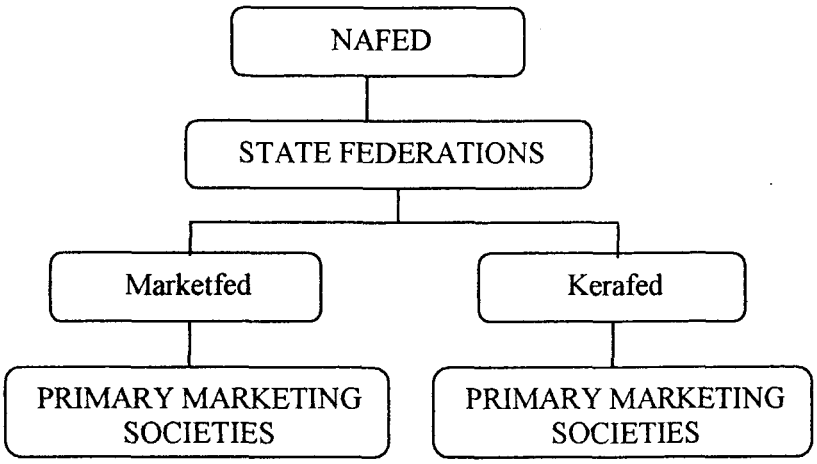
Primary Marketing Society - Functions

- Procurement of agricultural produce.
- Price support and market interventions operations in association with national state marketing federations.
- Advance loans to their members by pledging their produce.
- Sale of agricultural commodities to the cooperatives and consumer organizations.
- Distribution of fertilisers and other agricultural inputs.
- Provide godown. Cold storage and processing yard facilities to members.

Just like other agricultural products, co-operative marketing of coconut in India is undertaken by the NAFED. Nafed is procuring

coconut/copra through the respective state federations and state federations are procuring coconut for Nafed through their member societies in the village level. The structure of coconut co-operative marketing in India is presented in Figure 4.3.

Fig 4.3: Structure of Coconut Marketing Societies in India



Co-operative Agricultural Marketing in Kerala

Kerala is one of the few states where there was an effective implementation of land reforms which drastically turned around the land ownership system and accelerated the social transformation process in the state. After land reforms, a number of co-operative societies were set up to make cheap credit available to the farmers for cultivation. However, these societies did not address any issues in marketing like procurement, price stabilization and post-harvest processing. The cropping pattern in Kerala being dominated by highly market oriented cash crops like coconut, rubber and spices, the farmers were often lift helpless during adverse market conditions. Growing more market dependent crops required that the small farmers be more protected from market fluctuations and exploitation from intermediaries. Co-operative marketing was the best solution for this.

However, the potential of the co-operative sector- one of the largest mass movements in Kerala covering nearly on-third of the population-in the field of marketing, was not fully utilized. Such institutions not being in place, exploitation of the small farmers continued.

The main agencies functioning at present in the Co-operative sector for marketing of agricultural produce and the institutional network established by them are[4]:-

a) The Kerala State Rubber Marketing Federation Ltd. (RUBBERMARK)

b) The Kerala State Rubber Co-operative Ltd. (RUBCO)

c) The Central Arecanut and Cocoa Marketing and Processing Co-operative Ltd. (CAMPCO)

d) The Regional Agro-industrial Development Co-operative of Kerala Ltd. (RAIDCO)

e) Cashew Apex Industrial Co-operative Society (CAPEX).

f) The Kerala State Co-operative Marketing Federation (Marketfed)

g) The Kerala Kera Karshaka Co-operative Federation Ltd. (Kerafed)

Producers of agricultural commodities, co-operative credit societies and the government form members of marketing societies. Traders are also admitted as nominal members. Growth of membership is not encouraging. For a variety of reasons, it is desirable and necessary to aim at involving a sizable number of individual growers as members.

Out of the state federations, explained above, only the Marketfed and the Kerafed is dealing coconut.

MARKETFED

Marketfed was established in the year 1942 as a District Whole sale Co-operative Store and later on in the year 1960 it has been converted into an apex society of marketing societies and the area of operation extends to the whole of Kerala state. The membership is open to all the marketing societies in the state. At present it has a total membership of 116 consisting of 115 marketing societies and Government[5].

Objectives

Since its inception as an apex body for primary marketing societies in Kerala, it has been striving to provide better marketing facilities, fair prices for their producers, even direct purchase of the commodities whenever required, elimination of intermediaries and middlemen, uninterrupted supply of agricultural inputs at fair prices and on easy terms of payment and finally exploring and establishing export markets for our traditional agricultural commodities like pepper, cardamom etc.

With the paramount motive of welfare of farmers, Marketfed is now successfully handling a variety of Agricultural commodities like spices, copra, arecanut, rubber, cashew etc., and inputs like fertilizers, pesticides etc.

Coconut Marketing Activities

Marketfed is a pioneer co-operative apex organization in the field of copra procurement and marketing on a well organized way. Marketfed entered into this field in early 1978 by starting procurement of copra through a few of its affiliated marketing societies in the State. Later more and more primary co-operatives including service co-operatives were brought into its procurement network. Sometime back, before the entry of Marketing Federation some primary marketing societies were formed to deal with

coconut and copra. But due to lack of professional approach in marketing and due to lack of working capital after meeting the initial investment on construction of godowns, yards, smoke houses etc. they utterly failed to fulfill their objectives. The individual efforts of the society were not sufficient to face the stiff competition and the unhealthy and unfair trade tactics of private trade which was well established for a very long time enjoying the monopoly in this trade. But Marketfed's entry in a well organized way with professional approach in marketing proved that co-operative sector could break the monopoly of the well established private trade and could succeed in the field of procurement and marketing of copra. Marketfed's presence in the market and its arrangements to procure copra from the rural areas through primary co-operatives helped to reduce the flow of stock to terminal markets where the business malpractices and exploitation of farmers by private trade were severe and to assure reasonable rate to coconut growers and copra producers for their produce. Marketing Federation is very strict to the principle that its entire procurement of copra is done through co-operatives and that entire sales are affected to the processors like oil mills only. By this procedure Marketfed is avoiding the middlemen to a great extent in the copra trade and reducing the gap between the producer and the manufacturer. As a result of this, the producers, the manufacturers and the consumers are benefited and they get better satisfaction. Marketfed always gives preference of the sales of copra to oil mills within the state so as to provide more employment opportunity in the State and to help the flow of more income into the state by selling coconut oil - a value added product outside Kerala. But this has some limitations as some of the local mills are not prepared to furnish necessary sales-tax declaration and to effect prompt payment.

Federation started procurement of Copra in 1978 with the objective of ensuring reasonable price to coconut growers and revitalizing defunct primary marketing societies. It started procurement as a pilot scheme in Kollam district and subsequently extended to other districts. Thus it could bring 75 primary co-operatives including 40 primary marketing societies in the federation's regular procurement net work within a short period. It was further strengthened by engaging about 150 primary marketing and service co-operative societies during 1985-86 for the procurement of copra under Kerala State Government Price Support Scheme and Central Government Market Intervention Scheme[6].

During 1978-79 Marketfed procured 1225 MT of copra worth Rs. 89 lakhs. Then it gradually made progress in the procurement operation and during 1985-86, procured 22000 MT worth Rs. 27.69 crores[6]. Even though the quantity handled by the Federation is not substantial when compared to the then total production of about 3 lakh tonnes of copra in the state it could emerge as the largest single dealer in copra and that could make good impact in the market inside and outside Kerala. In this context, it may be remembered that copra trade was a monopoly of private traders who are traditionally well established in the field.

During the year 1994-95 Marketfed procured 13003 tonnes copra amounted to Rs. 30 crores including 10188 tonnes copra valued Rs. 24 crores under Price Support Scheme covering five districts viz. Kottayam, Idukki, Trichur and Palaghat and transferred to the nodal agent. It may be noted that comparatively low coconut producing area was only allotted by the Government to the Federation even though it had sufficient infrastructure and expertise to cover entire state. In the year 1995-96 Federation procured 4564 tonnes of copra valued Rs. 11.67 crores. In addition to this it had

procured 942 tonnes of copra from five districts viz. Palaghat, Trichur, Ernakulam, Idukki and Kottayam allotted to the Federation by the Government under the Price Support Scheme. The market rate has then gone up above the support price fixed by the Government and for further procurement under Price Support Scheme was not possible.

Federation entered in the field of crushing Copra in 1989 and marketing of coconut oil and cake. Sales are done both in bulk and in small consumer packs as value added product. Commodities handled by the Marketfed during 1995-96 to 1998-99 were shown in the Table. 4.2

Table 4.2: Commodities Handled by Marketfed (1995-96 to 1998-99)

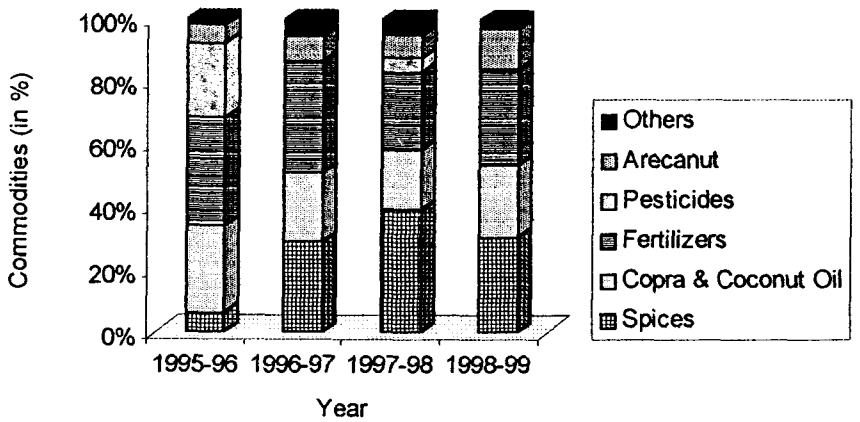
(Rs. In Lakhs)

Sl. No.	Particulars	Sales			
		1995-96	1996-97	1997-98	1998-99
1	Spices	335 (6.5)	1263 (29.0)	2341 (39.5)	1077 (30.6)
2	Copra & Coconut Oil	1419 (27.5)	950 (21.8)	1119 (18.9)	806 (23.0)
3		1777 (34.3)	1540 (35.4)	1470 (24.8)	1055 (30.0)
4	Fertilizers	1235 (24.0)	31 (0.7)	264 (4.5)	21 (0.6)
5	Pesticides	295 (5.7)	346 (8.0)	439 (7.4)	462 (13.0)
6	Arecanut	103 (2.0)	224 (5.1)	288 (4.9)	98 (2.8)
	Others				
	Total	5164 (100)	4354 (100)	5921 (100)	3519 (100)

Source: Marketfed

Table 4.2 shows that the spices and fertilisers are the important commodities handled by the federation. Coconut comes next to these commodities; about 20-25 per cent of the commodities handled by the Marketfed are copra and coconut oil it will be clearer from the Figure 4.4 given below. But when compared to the total production of copra and coconut oil the share of the federation is very nominal.

Fig. 4.4: Commodities handled by Marketfed (1995-96 to 1998-99)



Federation in the absence of own crushing facility crushing is done on job work basis. Thus the co-operative sector is now well organized in the field of copra business because of the initiative taken and good beginning rendered by Marketfed to mobilize the co-operatives in this field. The co-operative sector could get better respect in the market and it is now well recognized in the field of copra and coconut oil business.

The price Support Scheme of copra of Kerala State Government in 1985, which was first of its kind for copra, was implemented by Marketfed. In this Scheme Marketfed suffered a loss as it offered price higher than market rate, i.e. Rs. 1200 per quintal was offered when market rate was Rs. 950 per quintal and the stock had to be kept for a long time to avoid fall in price due to flow of stock into the market. By implementing the above price support operation Marketfed not only could arrest the fall in price but also raise the rate to Rs. 1310 per quintal within two months of this operation and could give hope to farmers for the better future of their produce. Subsequent to the above price Support Scheme for which finance resources were limited, Government of India came forward in January 1986 at the request of the State Government to implement Market Intervention Scheme for which also

the Marketfed was the operational agent of the NAFED. Since sufficient funds were available for this Scheme the procurement could be carried out continuously and more successfully. This helped the market go up even during the peak season in April, 1986. After this the market rate never came down to the level prevailed during 1985-86. This also shows how the co-operative organizations with wide spread network, strong infrastructure, professional approach and expertise can help the farmers. MERKETFED could do the business to the tune of 25,000 MTs of copra in a year. Marketfed is capable of doing much more than this provided sufficient funds are available in time[7].

Marketfed diversified its activities by starting the production of coconut oil in 1989 and marketing it under the brand name 'ASHWATHI' in and outside Kerala in bulk as well as in consumer packing.

Copra procurement details of the Marketfed for the last ten years and the estimated share of the marketable surplus of coconut of the federation in the state is given in the last part of this chapter

KERAFED

Kerafed (Kerala Coconut Grower's Federation) is an apex State level co-operative federation of coconut growers in Kerala, implementing an Integrated Coconut Development Project in the State since 1988.

The project with an outlay of Rs. 93.40 crores financially supported by Government of Kerala, European Economic Community and National Co-operative Development Corporation aims at assisting the coconut growers in the State by bringing them under the co-operative sector and to provide them with all supplies and services to elevate their standard of living through increased productivity, stable market conditions and value additions. 900 Primary Agricultural Credit Societies (PACS) situated all over

the State are the grassroots level units implementing the various project components such as agricultural extensions/farmers' educational programmes, organizational support to member PACS by way of share capital assistance, managerial subsidy and assistance for storage and copra procurement[8].

Objectives

The main objectives of Kerafed are:

1. To provide an impulse effect on internal production of coconut in Kerala state.
2. To develop the agricultural potential of Kerala state.
3. To strengthen the co-operative movement.
4. To secure the marketing of coconut and its products including by-products, and
5. Thus to augment the income base of 30 lakh coconut growers in the state by integrating production, procurement, storage, processing, marketing and product diversification aspects of coconut.

Activities

Activities of Kerafed encompass assisting the grower members of member PACS as well as the member PACS for increased production and improved processing of coconut / copra and marketing the products to facilitate direct realisation of the value addition. To enumerate the activities, they are[9]:

1) Strengthening 900 PACS each with 3000 grower members on an average.
2) Organization of extension activities and demonstration farms.

3) Training of farmers and PACS management teams
4) Strengthening of coconut seedling production programme.
5) Provision of copra drying and storage facilities to selected PACS
6) Supply of testing and weighing equipments to PACS
7) Establishment of three copra processing plants each with a capacity of 200 tonnes per day, of which one will be an integrated complex with 200 tonnes per day solvent extraction plant and 20 tonnes per day vegetable oil refinery.
8) Venturing into product diversification option, and
9) Organisation of a commodity growers' federation at the state level.

Kerafed's Role in Processing and Marketing

Primary processing of coconut to make copra is a practice that can fetch value addition to the coconut growers. One of the thrust areas of Kerafed's extension programmes is to convince the growers of the above and to make them produce copra. With 900 PACS ready to procure the copra so produced, the growers need not have any apprehension regarding marketing.

The member PACS can procure copra as well as coconuts from the growers. Kerafed takes copra from these societies and has a strong procurement network. The copra thus procured undergoes secondary processing at Kerafed's own units. Out of the three processing plants envisaged, the first one with a staggering capacity of 200 tonnes per day is fully operational at Karunagappally in Kollam district. Work on the other two units at Kozhikode and Ernakulam is fast progressing. Since the copra requirement is presently confined to only one unit, Kerafed is marketing the

surplus copra available to local millers within the state and also to upcountry buyers.

Kerafed is selling coconut oil in bulk all over the country. It is also selling coconut oil in consumer pack under the brand name 'KERA' in pack sizes of 1000 ml., 50 ml., 200 ml. and 100 ml. known for its purity, long shelf life, reasonable price, stringent quality control at the production level and state-of-the-art technology behind its production, KERA has now become a household name in Kerala. In the three other states where KERA has been launched in Karnataka, Tamil Nadu and Andhra Pradesh - it has already become popular. Arrangements are nearing completion for marketing KERA on a national scale. With the global market in view, export of coconut oil to Middle East countries is being explored.

Market Intervention Programme

Kerafed has a built-in system to procure copra on a regular basis through the member PACS. In addition, whenever there were crisis times Kerafed had responded by intervening in the market. In 1989, 1990 and 2000 under the support price operations for copra declared by Government of India, Kerafed was authorized as the representative of NAFED to procure copra in the State. During the middle of 1993, when the copra traders in the state and the transport operators went on strike, Kerafed had geared up its procurement machinery and ensured that these strikes did not adversely affect the coconut growers in any way. The performance details of Kerafed for the last five years are given in the Table 4.3.

Table 4.3: Performance Details of Kerafed (1995-96 to 1999-00)

(All Quantities are in MT and Values in Rs. Lakhs)

Activity	1995-96	1996-97	1997-98	1998-99	1999-2000
Copra Procured					
Quantity	4069	7749	5240	7174	13518
Copra Crushed					
Quantity	10460	8161	6203	7420	10324
Sales					
a) Copra:					
Quantity	3798	941	NIL	22	NIL
Value	952	246	NIL	44	NIL
b) Coconut Oil:					
Quantity	7673	4905	4308	5003	5109
Value	2614	2478	2402	2685	3321
c) Coconut Oil Cake:					
Quantity	375	2721	2348	2193	3313
Value	29	260	220	181	339

Source: Kerafed

Table 4.3 shows that the copra procurement were highest in the year 1999-00 period but the sales is comparatively less, which was mainly because of the unprecedented fall in the market price of coconut and massive procurement operation undertaken by the federations under PSS.

The same was happened in 1998-97 also. But the quantities procured during the other years were less because of the leading market price of copra and the preference of private traders by the coconut growers. Table further shows that the sales of copra taken place only in the initial periods but little or no copra trading were taken place in the last periods, which may be due to the setting up of new coconut oil plant by the Federation.

There are wide disparities in the expected and actual procurement of copra by the federations i.e. during 1998-99 it was targeted to procure 12,000 MT of copra but the federations procured only 7174 MT. Similarly, in 1999-00 the targeted procurement was 15,000 MT but they procured only 13,518 MT, the major part of this procurement was under PSS and given to the NAFED.

Copra procurement details of the Kerafed for the last ten years and the estimated share of the marketable surplus of coconut of the federation in the state is given in the last part of this chapter

Copra Procurement under Support Price

As coconut farming is a small farm enterprise in Kerala, the wide fluctuation in the coconut prices adversely affects the coconut farmers. Keeping the fluctuation trend in coconut oil and the frequent price decline in view, the Government of India has been declaring Minimum Support Price for copra since 1986. Table 4.4 gives the details of the support price declared by the Central Government since 1986 and the corresponding market price of copra.

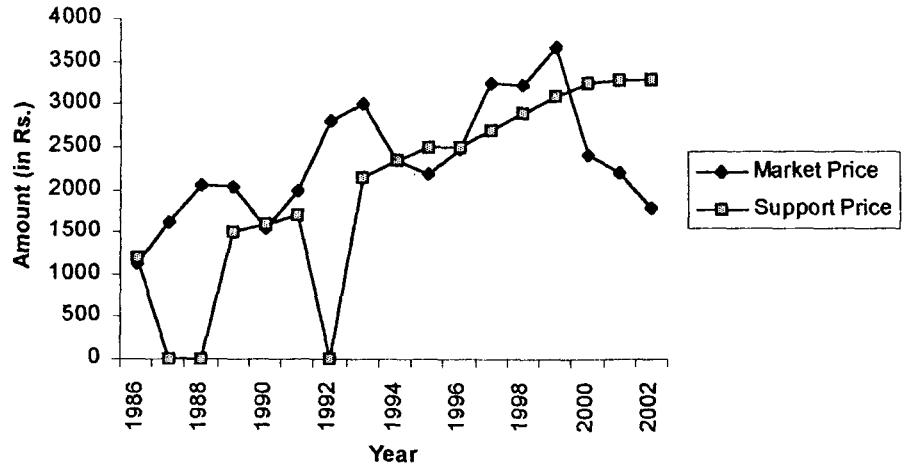
Table 4.4: Market Price and Support Price of copra since 1986

Year	Market Price	Support Price	Difference
(1)	(2)	(3)	(2)-(3)
1986	1123	1200	-77
1987	1611	Not declared	NA
1988	2060	Not declared	NA
1989	2038	1500	538
1990	1546	1600	-54
1991	1999	1700	299
1992	2805	Not declared	NA
1993	3006	2150	856
1994	2348	2350	-2
1995	2183	2500	-317
1996	2471	2500	-29
1997	3258	2700	558
1998	3226	2900	326
1999	3670	3100	570
2000	2400	3250	-850
2001	2200	3300	-1100
2002	1800	3300	-1500

Source: Compiled from Coconut Statistics (2001), CDB, Kochi and various News Papers

Table 4.4 indicates that the support price declared by the Government exceeds the market price only during the year 1995 and after 2000. During the years 1986, 1990, 1994 and 1996 the difference was less than Rs.100. In the rest of the periods it was less than the market price. Figure 4.5 gives a clear picture of the variations in market price and support price of coconut.

Figure 4.5: Variations in Market Price and Support Price Since 1986



The coconut industry comes into a critical situation after 1999. it experiences a continuous fall in the market price, which have not seen before. This may happens because of the GATT agreement and discriminating policy of the Central Government which facilitate import of the substitute product, Palm oil and even coconut and coconut products from the foreign countries where cost of production of coconut and other coconut products are very low. The state Government and coconut growers of Kerala state always demand for a higher Support Price because the support price will not be sufficient for meeting the cost of production of coconut in the state.

NAFED, the apex organisation at the Central level is the nodal agency for the procurement. A review of the procurement activities of Nafed during 2000 season reveals that though Nafed has procured 0.229 million MT (Table 4.5) of copra and 5,929 MT ball copra from major coconut growing states; it has not made any impact in the open market[10]. The price was always ruling far below the support price fixed by the government. As majority of the farmers are selling coconut as it is, the procurement operation had not

benefited the farmers as envisaged. Only the middlemen were getting benefited. It is also observed that the copra procured by Nafed was kept in the godown as it is after deterioration this has taken for processing during the season 2001. This has made a negative impact in the open market resulting a further crash in prices. As such fixing of support price and procurement activities is not the real solution for the crisis in the coconut industry. Being a perennial crop and harvested round the year, the MSP and procurement operations of copra cannot be compared with other seasonal crops. Table further shows that even though Kerala is the major producer of coconut in India, the quantity of procurement of copra from the state is very less when compared to the quantity procured from Tamil Nadu. About 2849 M.T of copra has been procured from Kerala during the period 1999-00. In the year 2000-01 the quantity procured has increased to 84,385 M.T (Table 4.5). Procurement in the remaining years is very nominal.

Table 4.5: Purchase of Copra by NAFED during 2000-01 under PSS

(Qty.in MT)

State	Million copra	Ball copra
Tamil Nadu	112,023	Nil
Kerala	84,385	Nil
Karnataka	Nil	5929
Lakshadweep	1,260	Nil
A & N Islands	5,531	Nil
Goa	988	Nil
TOTAL	2,28,812	5929

Source: XXXIX COCOTECH Meeting, 1-5 July 2002, Pattaya, Thailand, p.23

Irregularities in the Coconut Procurement through Cooperatives

During 2000-2001 there was an unprecedented fall in the market price of coconut and as a result NAFED interfered in the coconut market by

procuring copra through the state bodies. The real beneficiaries of the copra procurement policy were the copra traders and not coconut growers.

Copra procurement turned out to be another classic instance of a well conceived but badly executed scheme meant for farmers' welfare. Ironically, though coconut prices remained low in spite of procurement, the price of coconut-based products had gone up, helping big industrial houses increase their profits.

During the year 2000, the NAFED procured 85,000 tonnes of copra at a cost of Rs. 283.25 crores. This was made up of 47,000 tonnes procured by the Kerafed and 38,000 tonnes collected through the Marketfed. Yet it did not achieve its objective of raising the market price of coconut. Instead, coconut becomes cheaper and the grower poorer.

Nafed will usually interfere in the market when there is sudden fall in the market price of copra. Nafed is either exporting the procured copra or sell in the internal market when the market price reaches to the favourable position. But during 2000-2001, the market price did not show any sign of increase for long period. Since copra cannot be stored for long period, the Nafed sold the copra, which is procured at Rs.3250 and Rs.3000, to the internal market at Rs.1950.

During that period NAFED was reported to be having in its godowns 38,000 tonnes of unsold copra. The NAFED had already sold 50,000 tonnes at Rs.1,950 a quintal to traders[11]. What this means is that traders would be having in their godowns copra bought from the NAFED at Rs. 1,950 a quintal at a time and they would be able to sell it back to NAFED at the new procurement price of Rs. 3,300 a quintal.

The traders who have purchased copra at Rs. 1,950 from the Nafed would be soon selling the commodity back to the Nafed at the revised procurement rate of Rs. 3300, making a clear profit in the process. If one

lorry load of copra changes hands this way (one load is roughly ten quintals), the trader pockets a profit of Rs. 1 lakh.

It is estimated that the cost of producing one coconut is Rs.3.50. During 2000 the total coconut output on the state was 516.70 crore and the farmer got on an average only Rs.2 per nut[12]. So the farmer should get Rs. 5 per coconut is accepted as legitimate, the total loss suffered by the growers in Kerala would be a mind-boggling Rs.2,066.80 crores. Coconut price have been low during the last 3 years. Because there is a growing demand for arrangements to procure coconut instead of copra, then the real benefit of MSP will get to the growers because the copra trader doesn't have copra in their hands to sell in to Nafed.

The traders are now in a position to make a tidy profit by selling their stock compiled from growers at a low rate to the Nafed and its agencies at the high procurement rate of Rs. 3300 per quintal.

There already exist a few co-operatives which procure coconut instead of copra from the growers. One such co-operative at Thiruvampady in Kozhikode has been purchasing coconuts at around Rs. 7 a Kg. (some times one Kg. of coconut consists of as many as three dehusked coconut).

The growers may get more if the government extends the benefits of procurement to coconut instead of copra. A Nafed official admitted procuring coconut would be better from the growers' point of view but not necessarily for the co-operatives which effect the procurement.

This is because the copra obtained from these coconuts need not always be of good quality. The Nafed has given clear instruction to cooperatives that only good quality copra should be procured.

But this need not be a hurdle to switching over to coconut procurement. The co-operatives can sell good quality copra obtained from the coconut procured to Nafed and sell the rest in open market.

All the above irregularities things undergoing in the procurement under PSS show that the real benefit of the PSS will not go to the real growers. The opinion from the societies itself shows the fact of the above statement (Table 4.6)

Table 4.6: Opinion of Societies towards the Support Price

Satisfaction level	No of respondent	Percentage
1. Fully satisfied	4	13
2. To a great extent	8	27
3. To some extent	13	43
4. No benefit	5	17
Total	30	100

The Table 4.6 reveals that 13 societies (43%) have the opinion that the support price benefits only to some extent to the coconut farmers. 27% of the societies have the opinion that the growers are satisfied to a great extent and they are giving reward able price to the growers. Only 13% of the societies say that the growers are fully satisfied with the support price. It is observed that these societies are really doing the procurement activities in the prescribed manner and they are collecting the copra and raw nuts from the growers only. Most of the societies in the state reject the copra brought by the growers when it is small in quantity but at the same time they are collecting the produce from large scale growers. These societies contribute only 13 % of the sample size. Thus, it is generalized that only very limited number of growers get the benefit of price support scheme. 17 per cent of the societies have the opinion that the support price does not give any benefit to the growers.

Maintenance of records

The apex federations and Nafed gives instructions that stock register and other records concerned with copra procurement should always be kept up to date by the society for the inspection of the officials of the Federations\ Nafed. Quality and quantity of the stock will be verified at any time by the officials of the federation\Nafed.

The society should also ensure that daily purchase details are submitted to the regional office of the federation either telephonically or telegraphically. This should be followed by daily statements of purchase along with copies of the purchase bills under copy to head office and sales office of the federation.

But it is observed that the marketing societies do not maintain the stock register properly and procurement details are not recording the same day as it is instructed by the federation. Some times bogus entries are made in the stock register in the name of growers. But the actual purchase of copra will be made from the middlemen or local traders. Members of the management of some of the societies buy loads of copra from the near market and directly sending to the federations' warehouse. But the entries will be made in the register that the produce is procured from the real growers. This type of wide spread malpractices have under went in the state.

Role of State Federations (Apex bodies) in the Marketing of Coconut in Kerala

As discussed in the introduction chapter, there are only 205 primary co-operative societies (both PACS and SCBs) undertaking coconut marketing in Kerala. Majority of such societies are undertaking coconut marketing as an agency business, by procuring nuts from the coconut growers and traders and ultimately supply to the two marketing federations - Marketfed and Kerafed. Only very less number of the primary level societies undertakes

independent coconut trading. A comparison of the share of the marketable surplus of coconut procured by such societies over the total marketable surplus of coconut in Kerala is also being made in the next chapter to look into the role of primary co-operative societies in the marketing of coconut in Kerala. So, here for the purpose of the study, coconut procured by the two State Federations (mainly from their member co-operative societies and rarely from other sources) is treated as the total coconut/copra traded in the co-operative sector. Here an attempt has been made to estimate the share of the state federations in the coconut market of the state. The federations' role is find out by comparing the marketable surplus of the coconut with the coconut/copra procured by the federations during the last ten years (i.e. 1990-91 to 2000-01). For the purpose of the study the number of coconut produced in Kerala is converted into metric tonne (M.T) of copra by using the *Conversion Table**13 (which is given in the *Appendix IX*). The Conversion Table shows that, in Kerala 6,750 number of nuts are required for one M.T of copra. Then the marketable surplus** of the copra is find out by using the data arrived from the personal investigation (It was estimated from the

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* The Conversion table is a table prepared on the basis of a study in "Quantitative Analysis of Mature Coconuts from the Major States of India", and is available as a ready reckoner for conversion of coconuts into various coconut products in the major coconut growing states in India. Table is given in *Appendix IX*

** The marketable surplus of copra is found out by the following steps:

Step I: Take 90.44% of the total production of coconut.

Step II: Then the formula TC = Tn/6750 is used on the result of Step I.

Where

TC = Equivalent quantity of copra

Tn = Marketable surplus of coconut

The procedure of conversion for the data corresponding to the year 1990-91 is given below:

Total production of coconut during 1990-91 was 42,330 lakh nuts

Step I: 90.44% of 42,330 lakh nuts = 38,283.252 lakh nuts.

Step II: Using the formula: TC = Tn/6750

TC = 38,283.252/6750

= 567159.2 M.T of Copra.

Similarly, the quantity of the coconut of each year is converted in to copra. The details are furnished in the Table 4.7

primary data that about 90.44% of the yield of coconut is available as the marketable surplus, it is shown in detail in the chapter VI Table 6.14).

Table 4.7 given below shows the total production of nuts, estimated marketable surplus (in M.T) of copra and the coconut/copra procured by two state federations during the periods 1990-91 to 2000-01.

Table 4.7: Details of the Market Share of the State Level Co-operatives

Year	Production of Coconut (in lakh nuts.)$	Estimated Marketable Surplus of Copra (in M.T)!	Coconut/Copra Procured by the Marketfed and Kerafed			Market share of the two Federations (in %)!
			Marketfed (inM.T)**	Kerafed (in M.T)*	Total (in M.T)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1990-91	42330.00	567159.2	5669.65 (1.0)	28490 (5.02)	34159.65	6.02
1991-92	46410.00	621825.2	2731.43 (0.44)	24482 (3.94)	27213.43	4.38
1992-93	51240.00	686540.1	1753 (0.26)	20091 (2.93)	21844	3.18
1993-94	51924.00	695704.7	2177 (0.31)	21564 (3.10)	23741	3.41
1994-95	53360.00	714944.9	13047# (1.82)	53900 (7.54)	66947	9.36
1995-96	51550.00	690693.6	5066# (0.73)	8303 (1.20)	13369	1.94
1996-97	52764.78	706969.9	2692 (0.38)	7750 (1.10)	10442	1.48
1997-98	52094.08	697983.5	3239 (0.46)	5240 (0.75)	8479	1.21
1998-99	51320.00	687612.0	2539 (0.37)	7174 (1.04)	9713	1.41
1999-00	56800.00	761035.9	3154 (0.41)	12728 (1.67)	15882	2.09
2000-01	54960.00	736382.6	39781# (5.4)	39425# (5.35)	79206	10.76
Average	**51341.17**	**687895.6**	**7440.83 (1.05)**	**20831.6 (3.06)**	**28272.37**	**4.11**

Source: $ *Coconut Statistics, Coconut Development Board, Kochi.*

** *Marketfed*

* *Kerafed*

! Calculated from the Secondary data

Note: # this figure includes copra procurement Under PSS also.

Table 4.7 shows that the share of state level marketing federations in the marketing surplus of coconut in Kerala is very nominal. At no time it exceeds 10% except in the year 2000-01 (10.76%). Similarly, it reaches to 10% during 1994-95 (9.36%). This happens only because of the procurement of coconut under PSS for Nafed during those years. In the remaining periods it ranges from 1.21% to 6.02%. Figure 4.6 shows the state co-operatives' market share of coconut to total coconut market of Kerala during the period 1990-91 to 2000-01.

Fig. 4.6: Apex Federations' market share of coconut to total marketable surplus of the coconut

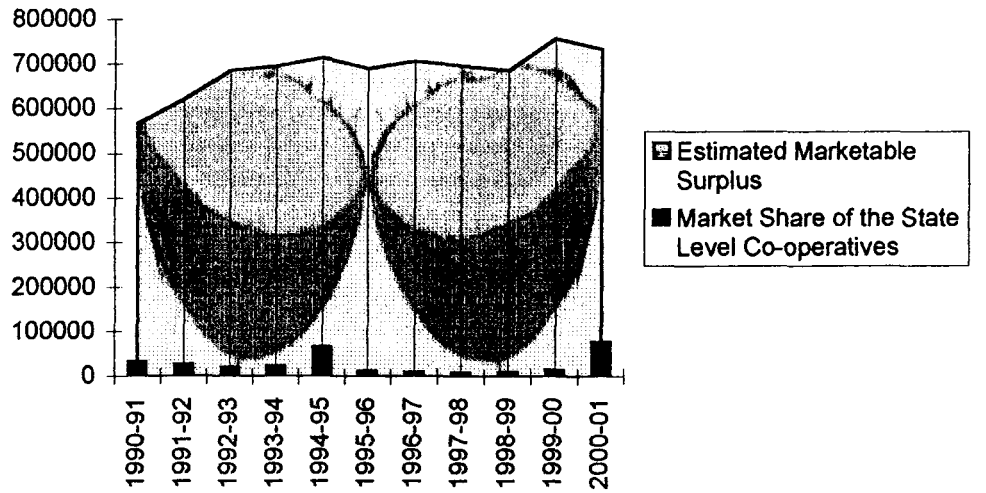
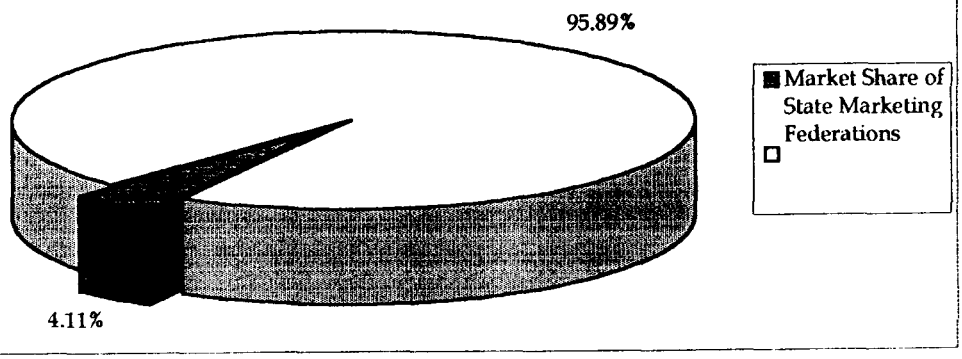


Fig. 4.6 shows that during 1990-91 the market share of the federations was 6.02%, and then it shows a decreasing trend except in the year 1995-96 and 2000-01. Variations in the market share of coconut of the state co-operatives can be seen from the above figure.

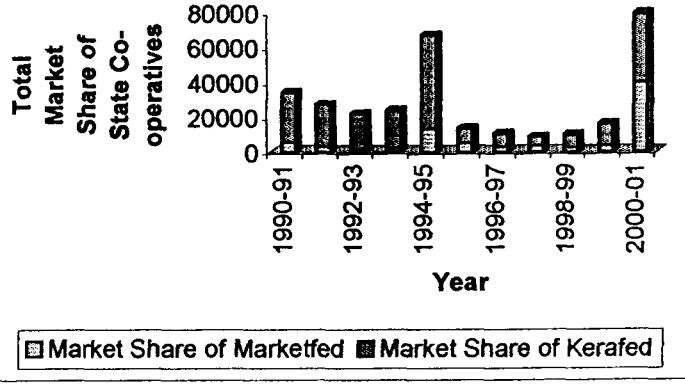
On an average the state cooperatives handles only 4.11% of the total marketable share of coconut in the state (See Table 4.7 and Fig.4.7).

Fig. 4.7: State Co-operatives' Market Share of Coconut to Total Marketable Surplus of Coconut (Avg)



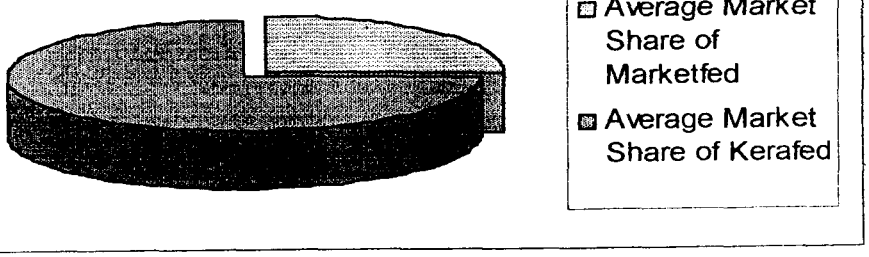
Between the federations (Kerafed and Marketfed), Kerafed got more market share than Marketfed. Fig. 4.8 shows the percentage of market share of coconut of each federation over the market share of under co-operative sector. It shows that in almost all the period Kerafed is having the major share of marketable surplus of coconut under co-operative sector except in the year 2000-01, in this period the two federations have almost equal share. Figure 4.8 shows the market share of coconut of the two federations during 1990-91 to 2000-01.

Fig. 4.8: Market Share of Kerafed and Marketfed in the Coconut Market (1990-91 to 2000-01)



On an average Kerafed handles 74% of market share of the coconut traded under the co-operative sector and the Marketfed handles only 26%. Figure 4.9 shows the an average figure of distribution of co-operatives' market share of coconut between the state federations

Fig. 4.9: Distribution of Cooperatives' Market Share of Coconut between Marketfed and Kerafed (Average)



On the basis of the above findings it can be concluded that the state marketing federations, who are the responsible authority in the state for the coconut marketing under co-operative sector, could not able to regulate the coconut market in Kerala during the past ten years. Their market share is only an average 4.11% of the total marketable surplus of coconut in the state. With this nominal share a marketing machinery cannot influence the price of a product. That is why it is says that the co-operative sector is only a 'price taker' rather than a 'price maker'.

Even though the state federations are procuring coconut through their member primary co-operatives, the coconut procured by the primary societies may not always be supplied to the apex societies because, sometimes the primary societies may also procure coconut from the growers for own purposes. So an attempt is also made to estimate the market share of the primary level co-operative societies in the coconut marketing of Kerala. This will be discussed in detail in the next chapter.

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Chapter V

CO-OPERATIVE MARKETING IN COCONUT - II

- *PRIMARY MARKETING SOCIETIES*
- *WORKINGS OF PRIMARY MARKETING SOCIETIES*
- *MEASUREMENT OF EFFICIENCY*
- *ROLE OF PRIMARY MARKETING SOCIETIES*

V

CO-OPERATIVE MARKETING IN COCONUT - II

COCONUT MARKETING THROUGH PRIMARY MARKETING CO-OPERATIVE SOCIETIES

The analyses so far have been made reveals that the state level marketing federations with a wide network of primary level co-operative societies can have a nominal representation in the coconut market of Kerala. In the following pages, a detailed analysis of the working of the primary coconut marketing societies (which contribute a major part of this work) is being made to know their contribution in the coconut market of Kerala and an attempt has also been made to measure their efficiency level, problems etc.

In Kerala there are 115 General Purpose Marketing Co-operative Societies and more than 1500 PACS are presently working and marketing and processing of all agricultural commodities including coconut is one of the objectives in their bye-laws. All this General Purpose Marketing Societies are affiliated to the Marketfed and 898 PACS are affiliated to the Kerafed. Some of the societies of the above two categories are affiliated to two both the federations. Out of the 115 general purpose marketing societies, all 13 deals with coconut[1]. In total, only 205 co-operative societies are undertaking coconut marketing as explained in the introduction chapter. Table 5.1 given below shows the details of such societies.

Table 5.1: Number of Marketing Societies engaged in the Coconut Marketing in Kerala

	General Purpose Marketing Societies	PACS	Total
Number o f Registered Societies	115	1585	1700
Number of Societies affiliated to State Federation	115 (100)	898 (56.7)	1013 (59.6)
Number Societies engaged in Coconut Marketing	82 (71.3)	123 (7.8)	205 (12)

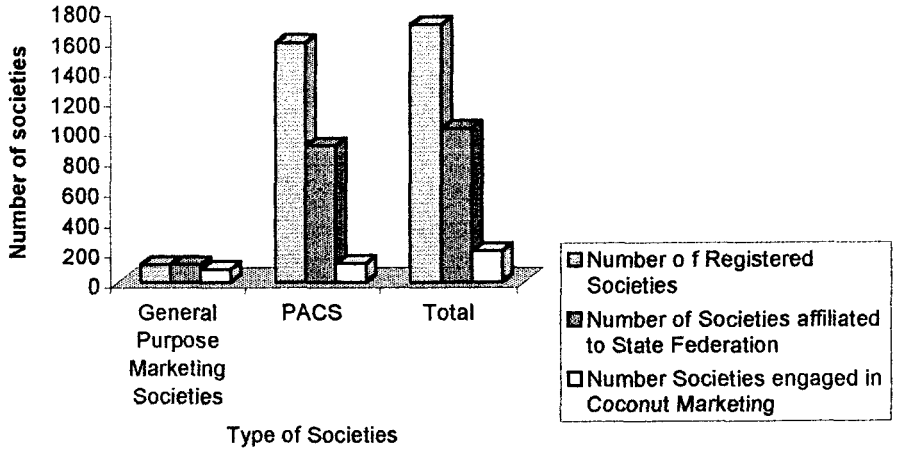
Source: Compiled from Co-operative Department, Kerafed and Marketfed

Note: *Figures in parenthesis are % to number of registered societies.*

Table 5.1 reveals that only 205 societies out of 1700 are doing coconut marketing in the state, which comes only 12 per cent of the total registered marketing societies. Further, most of such societies are doing coconut trade occasionally. The real situation of co-operative coconut marketing in the state comes to the light when we compare the sample societies with the population. Out of the total 1700 societies, only 205 are really engaged in the coconut marketing. The samples of thirty societies were selected from the active societies which comes 15 per cent. Out of this, only 10 societies are doing the coconut trading at their own interest, which comes only 4.9 per cent of 205 societies and it was only 0.59 per cent of the total population of 1700 societies. With this nominal participation of co-operatives in the coconut marketing in Kerala they could not influence either the price of the coconut or the volume of coconut trade in the state and so the co-operatives are not at all succeeded in regulating the coconut trade in the state.

Figure 5.1 will give an account of the registered and affiliated societies and societies in the coconut marketing activities.

Fig. 5.1: Details of the primary co-operative societies engaged in the coconut marketing activities.



Working

Most of the societies, especially general marketing societies, dealing in coconut are not working properly. Due to many drawbacks and limitations in their present working and malpractices in the overall marketing machinery they are not able to do their work effectively by competing with private parties. There are deficiencies and limitations in all the activities of their working like coconut procurement, grading, processing, storage, transportation etc,. In the following pages the present working and defects in the working of coconut marketing societies are discussed.

The co-operatives other than the general marketing societies, which are affiliated to both federations, in the state are not at all interested in the coconut marketing as it creates problems than any benefit to the societies. Some of them are still engaged in this activity only because of the compulsion from the government. The state government through its marketing federations, from time to time, directs the affiliated societies to undertake coconut marketing. So the societies are compelled to do this activity without having sufficient infrastructure facilities. Table 5.2 given

below shows this picture.

Table 5.2: Circumstances under Which Societies Entered Into Coconut Marketing (Affiliation-wise Distribution)

Circumstances	Kerafed	Marketfed	Both	Total
Pressure from the Government	13 (72)	2 (33)	1 (17)	16 (53)
Own interest	2 (11)	4 (67)	5 (83)	11 (37)
Political reason	3 (17)	Nil	Nil	3 (10)
Total	**18 (100)**	**6 (100)**	**6 (100)**	**30**

Source: Survey data
Figures in parentheses are % to total

Among the societies, 53% are entered into coconut marketing only because of the pressure from the government. Only 33 per cent are undertaking coconut business at their own interest and 10 per cent prevailed in this field due to political reason. It must be noted that the societies affiliated to Kerafed shows less interest in the coconut marketing (72 %). It is also found from the personal interview with the officials of the societies, that they are giving more attention towards banking activities than others because it gives more revenue to the societies. Moreover, such activity involves less risk and gives more job satisfaction to the parties concerned. Table 5.3 shows the nature of activity performed by the sample societies.

Table 5.3: Nature of Activities performed by the sample societies – (Region-wise analysis)

Nature of Activity	North	Central	South	Total
Purely Banking	2	0	0	2 (7)
Marketing	0	2	0	2 (7)
Banking and Marketing	**6**	**8**	**10**	**24 (80)**
Production and Marketing	2	0	0	2 (7)
Grand Total	10	10	10	30 (100)

Source: Survey data. Figures in parentheses are % to total

80 per cent of the societies' nature of activity is banking and marketing; only 7 percent are having exclusive marketing activity. When comparing among the regions, all the societies belong to southern region are engaged in banking and marketing activities but it is only 60 percent and 80 percent in northern and central regions respectively. So it must be noted that the co-operatives set up in the state for agricultural marketing are also interested to do the banking business.

In Kerala, in most of the cases copra instead of coconut is trading through the co-operatives. The societies are not procuring raw coconut because of the lack of dryers and other processing facilities. The societies which are procuring raw coconut have processing facilities and so they are producing value added products. They have their own marketing network also. The state federations are not buying raw coconut from their member co-operatives. Table 5.4 given below shows the type of products (raw coconut or copra) procured by the societies.

Table 5.4: Number of Societies Procuring Raw coconut and Copra

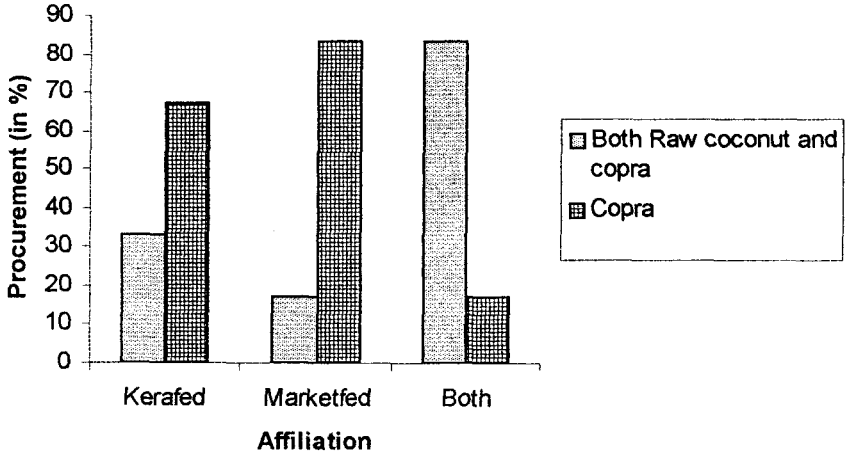
Type of Affiliation	Both Raw coconut and copra	Copra	Total
Kerafed	6 (33)	12 (67)	18 (100)
Marketfed	1 (17)	5 (83)	6 (100)
Both	5 (83)	1 (17)	6 (100)
Grand Total	12 (40)	18 (60)	30 (100)

Source: Survey date. Figures in parentheses are % to total

It is understood from the Table that only 40 per cent of the societies are buying both raw coconut and copra; rest are buying only copra from the growers. Among the apex bodies the societies affiliated to both federations are doing well. About 83 percent of the societies belonging to such category are procuring raw coconut and copra. They have whole time arrangement for the procurement of coconut. The societies affiliated to Marketfed have the least participation in the procurement of raw coconut (17%). These are

the exclusive marketing societies which procure several types of agricultural produce including coconut. But most of the societies coming under this category procure copra, only when there is procurement operation under PSS. It is also found from the observation that these types of societies fully depends on the government for their working. So they face many problems like lack of fund, inefficient management, lack of processing facilities etc, which are explained in detail in the chapter - Problems of Co-operative Coconut Marketing Societies. Similarly, only 33 percent of the societies affiliated to Kerafed are buying both raw coconut and copra. Figure 5.2 presents the types of procurement made by the societies.

Fig. 5.2: Details of Coconut Procurement



The Kerafed societies will not show much interest in the coconut trade because majority of such societies are service co-operative banks and so they have no time to spend in the procurement especially for the procurement of raw coconut. The overall picture of the coconut procurement will be clearer from the Table 5.5

Table 5.5: Coconut Procurement Details of the Sample Societies (1996 to 2001)

(Quantity in M.Tons)

Year	Kerafed		Marketfed		Both		Total	
	Number*	Qtty.	Number*	Qtty.	Number*	Qtty.	Number	Qtty.
1996-97	12	952.6	1	266.1	5	1441.6	18	2660.3
	(57)	(79.38)	*(17)*	(266.1)	*(83)*	(288.3)	*(60)*	(147.8)
1997-98	11	1557.8	1	227.2	5	1739.9	17	3524.9
	(61)	(141.61)	*(17)*	(227.2)	*(83)*	(347.98)	*(57)*	(207.3)
1998-99	11	1440.4	1	169.4	4	1740.3	16	3350.1
	(61)	(130.0)	*(17)*	(169.4)	*(67)*	(435.0)	*(53)*	(209.38)
1999-00	13	1793.6	2	638.3	4	1643.0	19	4074.9
	(72)	(137.96)	*(33)*	(319.15)	*(67)*	(410.7)	*(63)*	(214.46)
2000-01	18	4125.6	6	5378.4	6	2910	30	12414
	(100)	(229.2)	*(100)*	(896.4)	*(100)*	(485.0)	*(100)*	(413.8)

Source: Survey data.

Note: 1) Total societies: Kerafed 18, Marketfed 6, Both 6

2) Number means Number of societies procured coconut during the year*

3) Figures in parentheses are average coconut procurement of the societies in the respective affiliations.

4) Figures in italics are the percentage of the no. of societies to the respective total.

Fig 5.3: Number of societies procured Coconut 1996-97 to 2000-01 (In %) (Three affiliations)

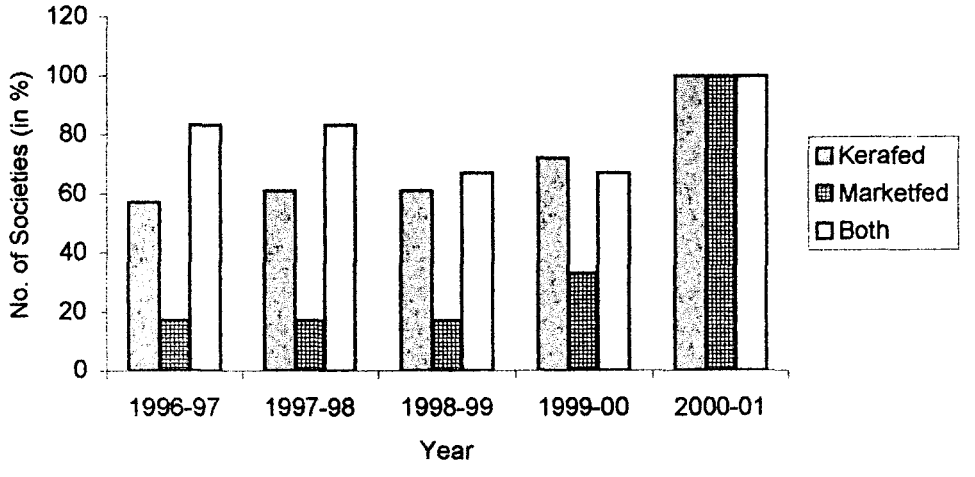


Table 5.5 shows that the societies affiliated to both the federations have the most participation in the procurement and they also show increase in the volume of procurement. The above figures substantiate the arguments that such societies are 'always' participating in the coconut trade in the state. The average quantity of procurement of such societies during 1996-97 was 288.3 M.T, which rose to 485 M.T in 2000-01, the increase was nominal but stable. Similarly, majority of such societies were participated in the coconut procurement during these periods (see Fig. 5.3). The societies affiliated to Marketfed shows an irregular growth in the volume of coconut procurement. This shows an average procurement of 266.1 M.T during 1996-97, it fell to 169.4 M.T during 1998-99 and again rose to a maximum of 896.4 M.T during 2000-01. Increase in the quantity of procurement during the last year were due to the increase in the participation of societies in the coconut procurement (Fig. 5.3) and moreover, during the year the coconut sector have experienced a drastic fall in the market price; consequently the government declared support price for copra. It was also explained elsewhere in the study that most of the Marketfed societies are procuring copra when the minimum support price exceeds the prevailing market price. The quantity of copra procured by the Kerafed societies shows an increasing trend during the initial period then stands unaffected afterwards. But when compared to the societies affiliated to both the federations the quantity was very low. It comes only 25-35 percent of the quantity of both the federations. Such societies procure an average of 79.38 M.T during 1996-97 and rose to 229.2 M.T during 2000-01.

The relationships among the three variables viz, market price, support price and number of societies engaged in the copra procurement during the five years are also statistically tested with multiple correlation and the result arrived are presented in the Table 5.6

Table 5.6: Correlation among Market Price, Support Price and Number of Societies engaged in the Coconut Procurement

Variables	Mean	Std.Dv.	'r' value	't' value	'p' value
No. of Societies	21.6	6.023	----	----	----
Market Price	2950.8	623.385	**-0.95919**	-5.876	**0.009835**
Support Price	2890	300.832	**0.85241**	2.824	**0.066534**

Source: computed from the survey data

The result shows that the market price, support price and the number of societies engaged in the coconut marketing activity are highly correlated. The correlation between market price and the number of societies are negative (-0.95919), which shows that when the market price increases the number of societies engaged in the procurement will decrease. Under this situation the growers usually depends upon the private vendors. While the relationship between support price and number of societies engaged in the coconut marketing are positive (0.85241), which shows that there is a direct relation between these two variables. When the support price becomes higher than the market price, growers will supply their product to the marketing societies and so the number of societies engaged in the coconut marketing will increase.

Influence of Support Price and Market Price over the Copra Procurement quantity

The above discussion shows that there is some relationship among the variables; quantity of copra procured by the co-operative societies, support price and market price of copra. In order to understand this relationship, the quantity of copra procured by the co-operative societies is compared with support price and market price of copra. The details of the above three variables over the last five years are listed in the Table 5.7

Table 5.7: Relationship among the Market price, Support price and Quantity of copra procured by the Societies (1996-97 to 2000-01)

Year	Market Price	Support Price	Difference **	Average Quantity of Copra Procured			
				Kerafed*	Marketfed*	Both*	Total*
1996-97	3258	2700	+558	79.36	266.1	288.3	147.8
1997-98	3226	2900	+326	141.61	227.2	347.98	207.3
1998-99	3670	3100	+570	130.9	169.4	435.0	209.38
1999-00	2400	3250	-850	137.96	319.15	410.7	214.46
2000-01	2200	3300	-1100	229.2	896.4	485.0	413.8

Note: ** Difference between market price and support price

Source: Compiled from Coconut Statistics, CDB, Cochin and
**Survey Data*

Fig. 5.4 Averae Quantity of Copra Procured by Three Affiliations - 1996-97 to 2000-01

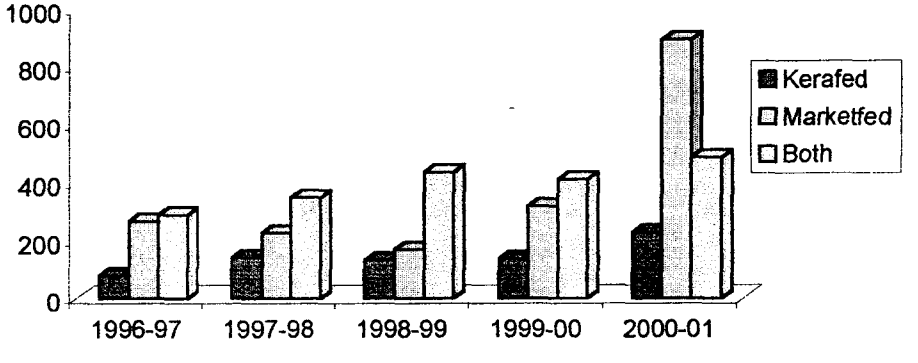


Table 5.7 shows that there is a negative relationship between the market price and the quantity of procurement and a positive relationship between the support price and the quantity. An average of 147.8 M.T copra was only procured by the societies during the year 1996-97, when the market price is higher than the support price (Rs.+558); while the procurement has been increased to an average of 413.8 M.T during the year 2000-01, when the market price becomes less than the support price (Rs.-1100). So it must be

noticed that more quantity of copra comes to the societies when the support price exceeds the market price.

The relationship among the above three variables are also statistically tested with the forward step wise regression analysis. The steps followed in the regression analysis is explained in the *Appendix III.* Both region wise and affiliation wise analysis has been carried out to know whether the region or affiliation have any influence over the procurement of copra in addition to the support price and market price. The result of the analysis is listed in the Table 5.8

Table 5.8: Forward step-wise Regression analysis Table (Region-wise and affiliation-wise analysis)

Variables	'R' value	'F' ratio	'P' value	Standard Error
1) Support price and Quantity of copra procured.	0.64157	(3,33) = 7.6953	P<0.00049	293.48
2) Influence of support price and market price over the quantity of copra procured (region wise and affiliation wise analysis).	0.64209	(4,32) = 5.6118	P<0.00154	297.86

Source: Calculated and compiled from the personal survey data.
Note: Regions: South, Central and North
Affiliation: Kerafed, Marketfed and Both
'P' at 0.05 significant level (Table value)

The 'R' value (0.64157) is significant at 5% level. The test proves that there is a significant relationship between the support price and the quantity of copra procured. The calculated value of F = 7.6953 is tested with the tabular value of F at 5 percent level of significance and is lower than the calculated value, (p<0.00049).Therefore, it is statistically proved that the support price is influencing the quantity of copra but market price have no influence over the quantity procured.

The investigation was conducted by taking different affiliations from different regions, because there is possibility of variation among the

affiliations and even within the regions. By analysing the support price, market price and quantity of the copra procurement between regions and affiliations, it is found that the support price is influencing the quantity of copra procured but market price have no influence over the quantity of copra procured (R = 0.64209). More over the test proves that the region wise and affiliation wise influence is highly significant at 5% level. The calculated value of F = 5.6118 and 'P' is less than (0.05) 0.00154. Therefore, it is proved that the region wise and affiliation wise influence over the quantity of copra procurement is highly significant.

Influence of Marketing Societies over Coconut Growers

The influence of marketing co-operatives over the coconut growers in the state is also studied to know what extent the coconut grower members depend on the co-operative societies for disposing their marketable surplus of coconut. Since the correct estimate of coconut growers in the state are difficult to get, the study was made between the total number of members of a society and the number of growers supplied coconut. it was estimated from the samples that an average of 8500 members are there in a society. From the observation it was found that about 60 per cent of the members of a society are coconut growers. While comparing the average number of growers who have supplied coconut to the societies with the total number of coconut growers, it is understood that less than 7 per cent of the members depends upon co-operative societies for disposing their marketable surplus. Table 5.9 given below shows the number of growers supplied coconut to the co-operative societies and its growth over the periods (1996-97 to 2000-01).

Table 5.9: Number of Growers supplied coconut to the co-operatives (1996-97 to 2000-01)

Year	Kerafed	Marketfed	Both	Total
	No. of Growers (Avg.)	No. of Growers (Avg.)	No. of Growers (Avg.)	No. of Growers (Avg.)
1996-97	145 (00.0)	254 (000.0)	1169 (00.0)	372 (00.0)
1997-98	161 (11.0)	205 (-19.3)	1220 (04.4)	382 (02.7)
1998-99	174 (08.1)	169 (-17.6)	1284 (05.3)	395 (03.4)
1999-00	248 (42.5)	341 (101.8)	1375 (07.1)	492 (24.6)
2000-01	279 (12.5)	587 (72.10)	1712 (24.5)	627 (27.4)

Note: Figures in parentheses are rate of growth over the previous year
Source: Survey data

Fig. 5.5 Average Number of Growers Supplied Coconut - 1996-97 to 2000-01 (Three Affiliations)

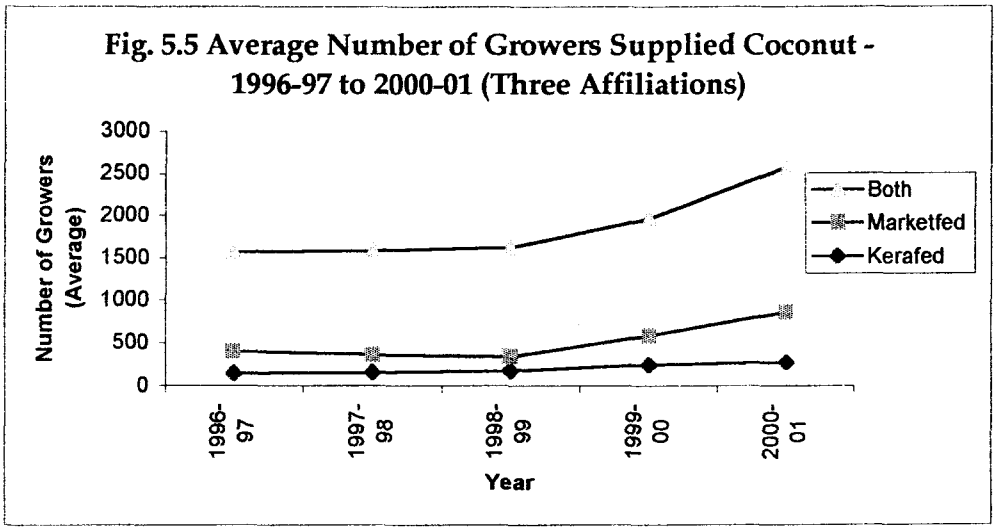


Table 5.9 shows that the average number of growers increases over the periods. In the initial periods there was only a marginal growth over the previous years. But thereafter the growth rate was sharply increased from 3.4% in 1998-99 to 24.6% in 1999-00 and again to 27.4% in the next year. Among the affiliations, Kerafed recorded a positive growth over the periods, even though there are some up and down in the growth rate.

The Marketfed societies recorded a negative growth rate during the

first two years. But during 1999-00 the number of growers had been shot up to 101.8% over the previous year, in the next year also the number of growers recorded a growth rate of 72.1%. These figures show that the Marketfed societies are actually procuring coconut only when the support price exceeds the market price. The societies affiliated to both the federations are the regular agencies for the procurement of coconut in the state. It is evident from the Table that these societies show regular and positive growth in the number of growers irrespective of increase in support price. But similar to other affiliations the rate of increase during the last year was high (24.5%), when compared to other periods. This may be because of the unprecedented fall in the market price of copra.

The number of coconut growers who depend upon the co-operative societies for marketing coconut is one of the important variables which determines the role of co-operative sector in the coconut marketing. Therefore, the influence of support price, market price and the quality of copra procured by the societies over the number of coconut growers was tested statistically with forward step wise regression analysis. The result of the test is given in the Table 5.10

Table 5.10: Regression analysis Table (Region-wise and affiliation-wise analysis of number of coconut growers supplied, support price and market price)

Variables	'R' value	'F' ratio	'P' value	Standard Error
1) Support price.	0.5366	(4,32) = 3.236	P<0.02446	734.22
2) Market price	0.5316	(2,34) = 6.699	P<0.00353	714.96
3) Quantity of the copra procurement (Region wise and affiliation wise analysis)	0.4117	(1,35) = 7.144	P<0.01134	758.22

Source: Calculated and compiled from the survey data.
Note: Regions: South, Central and North
Affiliation: Kerafed, Marketfed and Both
'P' at 0.05 significant level (Table value)

It is found through the test that the support price and market price are insignificant (R = 0.5366 and 0.5136). The calculated value of F = 3.236 (for support price) and F = 6.699 (for market price) is tested with the tabular value of F at 5% significance (0.05) and is higher than the calculated value ($p<0.02446$ for support price and $p<0.00353$ for market price). It proves that any increase in the support price or decrease in the market price will not influence the size of the number of growers who depends the co-operative societies for disposing their marketable surplus. The test also proves that the affiliations and regions have a significant influence over the size of the number of coconut growers who depend on the societies for coconut marketing (R = 0.4117). The calculated value of F = 7.144 is tested with the tabular value of F at 5 % (0.05) level of significance and is lower than the calculated value ($p<0.01134$). It substantiate that there is region and affiliation influence over the size of the number of growers. That is the size of the number of growers who supplied coconut to the various societies will differ in the different affiliations and regions.

Nut Procurement

Only 10.4 per cent of the societies are procuring nuts as owners and they procure a very small quantity. The remaining societies are procuring as agents of the Kerafed and Marketfed and that too only at the time the copra is procured under the Minimum Support Price (MSP). Due to high and sudden fluctuation in prices and many risk involved, the societies are reluctant to do business as owners. The risk involved in the procurement and marketing of coconut is discussed in detail in the next chapter – Problems of Marketing Societies.

The survey reveals that out of the 18 societies affiliated to Kerafed only two societies (11 %) are procuring coconut as owner, which either makes finished products or copra from the coconut. The remaining 16 societies (89 %) are procuring for apex bodies as an agent.

Six societies are affiliated to Marketfed and out of this only one is procuring coconut as owner. But in case of societies affiliated to both the bodies, two out of six societies (33 %) are procuring coconut as owners and the remaining four (67 %) societies are procuring for apex bodies.

Thus it is concluded that most of the societies affiliated to Kerafed are acting as agent of the apex bodies, when compared to other affiliation. The purpose of the procurement of coconut by the societies are presented in the Table 5.11.

Table 5.11: Purpose of procurement of coconut (Affiliation wise distribution) *(In Percentage)*

Purpose of Procurement	Number of societies			
	Kerafed	**Marketfed**	**Both**	**Total**
For the apex body	89.0	83.0	50.0	80.0
For the apex body and for Own processing	5.5	17.0	33.0	14.0
For the apex body and for marketing	5.5	Nil	Nil	3.0
All of the above	Nil	Nil	17.0	3.0
Total	100.00	100.00	100.0	100.00

Source: survey data

The societies which procure copra as agents get commission of Rs. 35/- per quintal of copra procured. The provisions about the service charges have been given in the terms and conditions made by the apex body with the societies. It says that service charge at the rate of Rs. 35/- per quintal of copra purchased by the society towards their services upto storing of stock at the storage point such as incidental expenses for collection, drying, grading, packing, stenciling on gunny bags, weighing, stitching, including twine, loading and unloading, transit, godown rent and other administrative expenditure of the society.

Field Procurement

Only very few societies are doing field procurement of coconut. Table 5.12 reveals the field procurement details of coconut and number of societies procured coconut for the period 1996 to 2000.

Table 5.12: Number of Societies engaged in the Field Procurement (1996 to 2000)

(No. of Societies in %)

Year / Frequency of Field procurement	1996	1997	1998	1999	2000
Always	3.3	3.3	3.3	3.3	3.3
Frequently	3.3	3.3	Nil	Nil	3.3
Never	93.4	93.4	96.7	96.7	93.4
Total	**100**	**100**	**100**	**100**	**100**

Source: survey data

It could be seen from the Table that very few societies are undertaking field procurement. Only 6.6 per cent of the societies are undertaking field procurement through out the periods and out of this half of the societies are undertaking field procurement only frequently. The remaining societies never undertake field procurement during these periods. It is also found that 40 per cent of the societies have not even under taken any procurement during 1996 to 1998. But during the last two years almost all the societies had participated in the procurement operation. From the Table it is evident that the co-operative societies are not at all interested in the field procurement of coconut.

Procurement of Raw Coconut

The marketing societies in Kerala are rarely procuring raw coconut. Table 5.13 shows the region wise and affiliation wise distribution of the societies which procures raw coconut and the different methods adopted for such procurement.

Table 5.13: Raw Coconut Procurement – (Region-wise and Affiliation-wise distribution). *(No. of Respondents)*

Method of procurement	North				Central				South				Total			
	K.F	M.F	BT	Total	K.F	M.F	BT	Total	K.F	M.F	BT	Total	K.F	M.F	BT	Total
1. By Cutting and Weighing.	Nil	Nil	2	2	1	1	1	3	4	Nil	1	5	5	1	4	10 (91)
2. On the basis of weight with water.	1	Nil	Nil	1	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	1	Nil	Nil	1 (9)
Total	1	Nil	2	3	1	1	1	3	4	Nil	1	5	6	1	4	11 (100)

Note : K.F = Kerafed, M.F = Marketfed, BT = Both
Total No. of societies under the study is 30
Source: Primary data.

Because of the various reasons mentioned in the preceding pages, the marketing societies are reluctant to procure raw coconut. Table 5.13 shows that only 11 co-operatives (37 % of the total) are undertaking raw coconut procurement. Among the general marketing societies and PACS which are undertaking coconut marketing in Kerala, the PACS are insignificant in number.

Various methods are adopted for the procurement of raw coconut is listed below:

(a) By cutting and weighing,

(b) On the basis of sample and

(c) On the basis of weight with water.

Under the 'cutting and weighing' method, the dehusked nuts brought by the growers will be cut and weighed in the societies after removing water.

Table 4.18 shows that Ten out of 11 societies (91%) adopting this method for procuring raw nuts. This method is treated as non-conventional method of purchase. The coconut are not counted numerically for the purchase, but weighed after removing the husk. This ensures a fair deal to the farmers as far as the pricing mechanism is concerned. Each kilogram of

coconut (with shell and coconut water) is bought by some societies at a price higher than market rate. A seasonal price fluctuation is allowed as the Kernel does not yield the same quantity oil throughout the year.

The next method adopted for the procurement is on the basis of 'weight with water'. Under this method, the procured nuts after dehusking are weighing with water without cutting. The price is fixed as rate per Kg. One Kg. of coconut consists of as many as three dehusked coconut. The agencies which are expert in the field of coconut marketing are adopting this type of procurement because only experts can calculate the water content and quality of Kernel of the raw nuts. Only one society (9%) is adopting this method of procurement (Table 4.18).

Another method of raw coconut procurement is 'on the basis of sample', but it is very rarely adopted by the societies. No sample societies are procuring coconut under this method. Under this method a sample nut is selected at random from the coconut brought by the farmer. This sample nut is weighed before and after removing water, then this weight will be taken as the average weight of the nuts and total weight of the nuts brought will be decided accordingly.

Regional and affiliation wise analysis reveals that out of the 11 societies procured raw nuts, 46 per cent belongs to southern region and north and central region represents three (27 %) societies each. As far as affiliation is concerned societies affiliated to Kerafed is leading. Out of the total societies procured raw nuts, six societies are affiliated to Kerafed, which is more than 50%. The study shows that the societies affiliated to Marketfed are not at all interested in the procurement of raw nuts because they are always doing agency business and not procuring nuts as owner. Only one society is engaged in the raw nut procurement. Four societies are affiliated to Marketfed and Kerafed. These societies are really engaged in

the coconut marketing with due care. They are concentrating in the coconut marketing with the intention of farmer's welfare. The member growers of these societies are the real beneficiaries and they are enjoying the advantages of co-operative marketing.

The remaining societies are not undertaking raw coconut procurement because of the lack of processing facilities, lack of staff, storage etc.

Different pricing methods adopted by the marketing societies which are procuring raw nuts are given in the Table 5.14. Almost all the societies are depending Cochin Market for determining the procurement price of coconut. The societies are adopting coconut oil price or the price of coconut itself. Two societies are paying 1/3rd of the price of coconut oil per quintal to the 1000 raw nuts. One society (9 %) is paying 36% of the price of coconut oil per quintal to 1000 raw nuts. Four societies (37 %) giving 20 paisa more than the paper rate of coconut. Another 37 percentage are giving only market rate of coconut, out of this one society is depending Alappuzha Market.

Table 5.14: Pricing Methods for Raw Coconut adopted by the Coconut Marketing Co-operatives

Sl. No.	Pricing Method	Number of Respondent *
1.	1/3rd of Cochin Oil Market rate	2 (18)
2.	36 % of Market price of Coconut oil	1 (9)
3.	20 paise above Cochin Market Price	4 (37)
4.	News Paper Market rate of Coconut	3 (27)
5.	Alappuzha market rate of Coconut	1 (9)

Note: (1)* No.of societies procuring raw nuts (i.e. 11 out of 30 societies)
Figures in the parenthesis are % to the (1) above.
Source: Primary data.

Competition

The societies in the state are facing competition from the open market while procuring coconut. Table 5.16 given below shows the degree of competition faced by the sample societies.

Table 5.16: Competition faced by the societies – Region wise.

(No. of Societies)

Parties	North	Central	South	Total
Private Vendors	6 (60)	9 (90)	6 (60)	21 (70)
Other societies	1 (10)	Nil	Nil	1 (2)
No Competition	3 (30)	1 (10)	4 (40)	8 (28)
Total	10 (100)	10 (100)	10 (100)	30 (100)

Note: Figures in the parenthesis are % to the total.
Source: Primary data.

In North and South region 60% of the societies answered that, they are facing stiff competition from the private parties but in central region 90% of the societies facing the same type of competition. The remaining societies responded that they are not facing any competition from any parties. One society from Northern region responds that they are facing competition from the other societies.

From the discussions held with the officials of the societies it is understood that they are unable to compete with private parties because of various reasons. Firstly the society secretary or the person entrusted with the procuring of nuts may not be an expert as a private trader who has been in the business for a very long time. One has to stay a long period in the industry to be an expert in the business. But as he is a paid employee he will not give much importance to this field. Secondly, the working time of the societies is from 10:00 am to 5:00 pm. The growers, especially smaller ones who are mostly wage earners can bring their produce only after 5'O clock after finishing their daily work. By the time society might have been closed.

This will force them to sell to private parties. 10 per cent of the societies where either the president or the secretary works after 5'O clock have experienced more business. Thirdly, the person concerned with procurement cannot make decisions regarding pricing and other related matters independently. Fourthly, PACS are prevented from giving crop loans by the department. Now only general marketing societies can give crop loans. But due to shortage of funds and abnormal fluctuations in the price of crops the marketing societies are reluctant to lend loans to growers. Only one sample society from the northern region - Kerala Malanad Kera Karshaka Co-operative Society - is giving crop loans to the farmers. Finally, since the societies are making only cash procurement, the non-availability of liquid cash may affect procurement operation. But when the societies are procuring nuts for the apex bodies as an agent under price support scheme, may procure it for credit. The formalities and procedure to dispose off the nuts to marketing societies also compel the growers to sell it to private parties.

A coconut grower in general, sells their produce in raw form. The coconut cultivation in Kerala is a small holder's crop and most of the coconut growers have subsidiary activities like employment in government or other sector, doing Trade or Industry, etc. So lack of time to spend in converting raw coconut in to copra and non-viable size of produce for processing the grower prefer to sell the produce in raw form.

Evidence demanded by the societies for coconut procurement

While procuring nuts from the growers, the societies insist on documentary evidence to prove that the produce brought by the growers are from his own land. This is essentially required when the nuts are procuring under price support scheme. Societies are demanding this document to prevent the traders from bringing nuts to the society. But the societies

which are procuring nuts through out the years are not demanding this proof. Due to wide spread malpractices reported from different parts of Kerala in the procurement of copra by the societies, the government of Kerala have directed the societies to procure copra from the growers only with the production of evidence of the source of nuts. The government was forced to issue this order to prevent the middlemen or traders from bringing copra to the societies. Malpractices in the copra procurement were occurred in the year 2000 and 2001 where the disparities between market price and support price were very large. This situation was very well exploited by the copra traders, with the adjustment of management.

Grading

Grading is the process of sorting individual specimen of a given product to the standard grades or classes to which they belong[2]. It is done to help buyers to select the most suitable products and the producers to get high price for best quality. In promoting orderly marketing and in realizing proper value to the produce by the growers scientific grading is a strong weapon[3].

As already mentioned elsewhere, after converting coconut in to copra, it grades on the basis of appearance, size, shape, smell, etc. Specification of grade also differs from place to place and from merchant to merchant. The marketing societies which are doing marketing of copra i.e. up-country export and further processing are grading the copra according to the standard level. The marketing societies which are procuring copra as an agent of the Apex bodies must adhere to the quality and grade specification of the apex bodies. Table 5.17 gives the specification of quality and grade of copra as per apex bodies.

Table 5.17: Quality / Grade specification of FAQ Copra:

Special characteristics	Maximum limit of tolerance (as percentage of wt, for FAQ
a) Foreign matter % by weight maximum	1.0
b) Mouldy and black kernels % by count maximum	10.0
c) Wrinkled kernels % by count maximum	10.0
d) Moisture content % by weight maximum	6.0
e) Chips % by weight maximum	10.0

Source: Marketfed

1. FFA of extracted oil should not exceed 2%
2. Foreign matter includes sand, dust, straw and shell.
3. Mouldy and black kernels include those in which more than 5% or the inner surface is covered with mould and/or dark brown to black in colour.
4. Wrinkled kernels include those which are shrunk out of normal shape or are not fully matured or developed or have crumbled structure and uneven surface. Such kernels are often discoloured.
5. Chips include pieces of kernels which are smaller in size.
6. Meat means the soft body enclosed in the shell which carries oil.
7. Non-specified grade/quality will be allowed only against a specific order from a buyer indicating quantity and quality of copra produced.

As per the specification given by the apex bodies the marketing cooperatives are undertaking the grading operations. The details of the number of societies doing the grading of copra are presented in Table 5.18

Table 5.18: Number of co-operatives doing grading of copra - Affiliation wise

Apex body	Grading	Not Grading	Total
Kerafed	10 (56)	8 (44)	18 (100)
Marketfed	4 (67)	2 (33)	6 (100)
Both	6 (100)	Nil	6 (100)
Total	20 (67)	10 (33)	30 (100)

Note: Figures in parentheses are percentage to total
Source: Primary data

From the Table it can be seen that about 67 % of the co-operatives are marketing or supplying copra after grading it. All the societies, which are affiliated to both the apex federations, are doing grading of copra. Such co-operatives are engaged in the copra trading throughout the years. They are also having enough infrastructure facilities for processing. 67 % of the co-operatives affiliated to Marketfed are doing grading while only 56 % of the co-operatives affiliated to Kerafed are doing grading. The remaining co-operatives are not doing any kind of grading of copra; they are simply supplying the collected copra to the apex bodies according to their instructions.

Pricing of Copra

Regarding the policies adopted by the societies for fixing the price for copra especially in a situation where the market price is higher than the support price, there are disparities. When market price is higher than the support price, the societies have to give support price when it is acting as agents. It is found from the observation that the societies which are procuring coconut or copra as owner, are permanently acting as the agent of the nodal agencies when copra is procured under price support scheme. During this time these societies find the coconut procurement is not profitable as they have to buy nuts from the growers at support price and

make further processing and marketing. Under this situation such societies buy coconut or copra at market rate from the open market. Table 5.19 explains the price paid by the marketing societies when the market price of coconut exceeds the support price.

Table 5.19: Price paid for copra by the Coconut Marketing Co-operatives

Method of Pricing	Kerafed	Marketfed	Both	Total
1) Support price	7 (39)	3 (50)	1 (17)	11 (37)
2) Market price	5 (28)	1 (17)	4 (66)	10 (33)
3) Fixed by the apex body	4 (22)	2 (33)	1 (17)	7 (23)
4) Fixed by the management	2 (11)	Nil	Nil	2 (7)
Total	18 (60)	6 (20)	6 (20)	30 (100)

Note: Figures in parentheses are percentage to total
Source: Primary data

Table 5.19 shows that 37 per cent of the societies offering support price irrespective of the variations in the market price. It indicates that they are procuring nuts only for the apex bodies under the price support scheme. When the market conditions become favorable, the market price increases and it exceeds the support price. In this situation also these societies procuring nuts at support price, but no farmer will supply their produce. The growers will directly supply the produce to the copra traders or local middle men. 33 per cent of the societies are paying current market rate and it indicates that they are actually involved in the coconut marketing i.e., they are buying nuts for their own purpose also. They are some times producing finished products from coconut viz, coconut oil and marketing it with their own brand name. So they need raw material for this purpose. Five societies from Kerafed and only one society from Marketfed are paying market rate. Four societies are affiliated to both the bodies.

23 per cent societies are offering the rate as fixed by the apex body. These societies are usually buying nuts for apex bodies; the apex bodies have a permanent dealing with these societies for collecting copra for their own purpose. These two apex bodies give direction to the societies with regard to the price of copra at which they can buy from the farmers. The primary marketing societies are getting commission for doing this business. So they offer only the price fixed by the apex bodies.

Some time price of the coconut/copra will be decided by the management. Table shows that 7 per cent societies are procuring nuts from the growers under this method. This rate will usually be higher than the market rate.

Satisfaction Level of Growers Towards The Price Offered By The Societies

The societies have the opinion that they are offering good return to the growers. Table 5.20 gives the opinion of the marketing societies about the level of grower's satisfaction towards their price.

Table 5.20: Satisfaction level of growers (Societies Opinion)

Satisfaction Level		No. of Respondent
1)	Fully satisfied	3 (10)
2)	To a great extent	19 (63)
3)	To some extent	7 (23)
4)	Not at all satisfied	1 (3)
	Total	30 (100)

Note: Figures in parentheses are percentage to total
Source: Primary data

Table 5.20 shows that 63 percent of the societies have the opinion that the growers are satisfied to a great extent with their price. But when we analyse the number of growers who are supplying produce to the co-operative marketing agencies in the state, It is revealed that only a very

limited number is depending on marketing agencies for disposing their produce. Only 10 percent of the societies have the opinion that their price gives full satisfaction to the growers, It is very nominal in number .23 percent have the opinion that their price gives satisfaction to the growers to some extent only. One society has no confidence in its own price. They respond that the growers are not at all satisfied with their price.

Processing

Processing is a marketing activity by which the raw product changes its form as required by consumers before marketing. Different types of processing are done in coconut. Coconut processing is currently confined to copra production, oil extraction, manufacture of coir and coir products, manufacture of desiccated coconut. The primary processing of coconut to make copra is a practice that can fetch value addition to the coconut growers. This kind of processing is done by the majority of growers who are having large holdings, and the small local traders who are collecting small quantities of dehusked coconut from small holders. Kerafed and Marketfed are taking copra from their affiliated societies and so the PASCs and general marketing agencies are almost doing only this kind of processing. Only very limited number of societies are undertaking further processing of copra, the premier product of coconut and other types of value added product. The copra procured by the marketing agencies undergoes secondary processing at Kerafed's and Marketfed's own units.

Even though the marketing societies have made some achievements in procurement and marketing of copra, coconut oil etc, co-operatives have to go a very long way to achieve the goals to the full satisfaction of the farmers as well as the consumers. With regard to the diversification of products, co-operatives are usually reluctant to take up the production of new products which are not much popular. The risk involved in diverting

their limited resources for a new product, their marketability and the net return of which are not ensured or not much known are the reasons for not taking up this kind of diversification. Investment for popularising a new product may not be viable for a co-operative having limited resources.

The survey reveals that the marketing societies are not going for the secondary processing of nuts. They are simply collecting the coconut and converting into copra by primary processing or they are collecting copra directly from the growers. Table 5.21 shows the level of processing facilities owned by the societies.

Table 5.21: Processing facilities owned by the coconut marketing cooperatives

Processing facility	Kerafed	Marketfed	Both	Total
1) No processing facility	13 (72)	4 (66)	2 (33)	19 (63)
2) Raw coconut to copra	5 (28)	1 (17)	1 (17)	7 (23)
3) Coconut Oil	Nil	1 (17)	2 (33)	3 (10)
4) Other value added product	Nil	Nil	1 (17)	1 (4)
Total	18 (100)	6 (100)	6 (100)	30 (100)

Note: Figures in parentheses are percentage to total
Source: Primary data

The survey shows that 63 percent of the societies are not doing any processing activity. They are collecting copra from the growers and supplies to the apex bodies. The apex bodies in return either do the secondary processing or marketing the copra to the upcountry market. Among the affiliations, 73 percent of the societies affiliated to the Kerafed are not carrying out any processing of coconut. Similarly, 66 percent and 33 percent of the societies affiliated to the Marketfed and both the apex bodies respectively are not undergoing the primary processing. 23 percent of the total sample societies are doing the primary processing of raw coconut into

copra. It constitutes 28 percent of the Kerafed societies, 17 percent of the Marketfed societies as well as 17 percent of both the apex bodies.

Only Ten percent of the societies are undertaking the secondary processing of copra into coconut oil. The contribution of marketing societies affiliated to Kerafed towards this processing is nil. 17 percent and 33 percent of the Marketfed societies and both the apex bodies' societies respectively are contributing to the account of secondary processing of coconut. It further shows that only one society which is affiliated to both the apex bodies is undertaking further processing to produce coconut based products. The study shows that the role of co-operatives in the coconut processing activity is insignificant.

Storage

The function of storage is that of having the product available at the desired time. It is the function which matches the pattern of production to the pattern of consumption from the standpoint of time. Storage over a period of several years is not a common situation for agricultural commodities. Carry over from one production season to another under a freely operating market situation is usually enough to assure the continuity of the process and distributive system[4]. It becomes necessary either to adjust supply and demand for products that are produced seasonally or to hold the goods over a short period to adjust the temporary market conditions.

The survey shows that storage capacity varies from society to society. It varies from 38 M.T to 399 M.T. On an average, a society occupies a godown of 181 M.T capacities. Table 5.22 shows the storage requirement of the marketing societies and the actual storage facilities owned by these societies for the period 1996 to 2001.

Table 5.22: Average Storage Requirement of the societies for the period 1996 to 2001 (Affiliation-wise). *(Average Storage area in MT)*

Year	Kerafed	Marketfed	Both	Total
1996-97	88.3	41.6	52.5	71.8
1997-98	87.7	41.6	52.5	71.5
1998-99	92.2	58.3	52.5	77.5
1999-00	108.3	512.5	151.6	197.8
2000-01	134.4	512.5	165	216.1

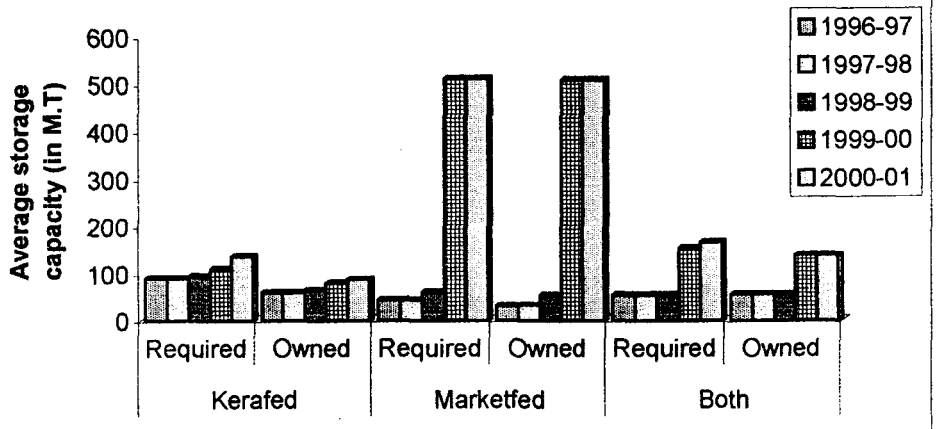
Source: Calculated from the Survey data

Table 5.23: Storage area owned by the societies during 1996 to 2001 (Affiliation-wise analysis). *(Average Storage area in MT)*

Year	Kerafed	Marketfed	Both	Total
1996-97	57.6	29.1	54.3	51.3
1997-98	57.6	30.8	54.3	51.6
1998-99	61.8	51.6	54.3	56.3
1999-00	77.6	510	137.6	176.1
2000-01	85.1	510	137.6	180.6

Source: Calculated from the Survey data

Fig. 5.6: Storage Capacity Owned and Required for the Societies (Affiliation-wise) - 1996-97 to 2000-01



The average storage capacity owned by a society was 51.3 M.T during 1996-1997 and it rose to 180.6 Metric tonnes during 2000-2001. Up to 1998-1999 the increase in storage capacity was very minimal but the rate of increase for the last two years was very high. It was due to increase in procurement of copra under PSS. The average storage capacity of the societies affiliated to Kerafed during 1996-1999 was higher than the average storage capacity of the total sample societies. But for the years 1999-2000 and 2000-2001 it was far below than the total average capacity. The increase in storage capacity of these societies for the past five years was not satisfactory, even though it increased from 57.6 M.T in 1996-1997 to 85.1 M.T in 2000-2001. The condition is reverse in the case of societies affiliated to Marketfed. The average storage capacities of the societies affiliated to Marketfed during 1996-1998 were far below than the average of the total societies. But it was coming near to the average of the total during the year 1998-99 and again increased sharply during the period 1999-01, touching the level of 510 M.T per society. During this period the average of the total societies was only 180.6 M.T.

The average storage capacity of the societies affiliated to both the societies was very near to the average of the total societies. For the first two years it was little higher than the average of the total societies, then the average of the total societies had been increased faster than the average capacity of the societies affiliated to both the societies. During 1996-97 the average storage capacity of the societies affiliated to both the apex bodies was 54.3 M.T when it was 51.3 M.T for the average of the total. But during 2000-01 the same was 137.6 M.T for both the bodies and 180.6 M.T for the total societies (See Fig.5.6).

The survey shows that the increase in storage capacity is really taken place in the societies affiliated to Marketfed, especially during 1999-00 and

2000-01. It also reveals that about 30 percent of the societies have a capacity of more than 100 M.T and another 40 percent below 20 M.T. All the available space is owned by the societies themselves. But some societies are making temporary adjustment of storage place during peak periods by taking rented godowns.

The survey also reveals that (Table 5.22 and 5.23) there is great variation between the requirements and availability of godowns. All the sample societies have shortage of storage facilities, especially the societies affiliated to Kerafed (See Fig.5.6).

The societies feel the shortage of storage facilities during the seasons. During the off season, most of the godowns kept idle. Table 5.24 given below explains how the excess storage facilities will be used by the societies.

Table 5.24: Pattern of uses of excess storage capacity by the co-operatives

(No. of Respondents)

Usage of excess storage facility	Kerafed	Marketfed	Both	Total
1. No excess storage capacity	3 (17)	Nil	1 (17)	4 (13.3)
2. Kept idle	9 (50)	2 (33.3)	5 (83)	16 (53.3)
3. Using for other purpose	6 (33)	2 (33.3)	Nil	8 (26.7)
4. Letting to other parties	Nil	2 (33.3)	Nil	2 (6.7)
Total	18(100)	6 (100)	6(100)	30(100)

Note: Figures in parentheses are percentage to total
Source: Survey data

About 13 percent of the total societies responded that they have no idle storage facilities even in the off season period. They are fully utilizing their storage facility. In other words, these societies have only limited capacity of godown. Whenever the storage facilities are required for these societies, they are taking rented building temporarily. 17 percent of the

Kerafed affiliated societies and societies affiliated to both the societies are coming under this category.

53 percent of the total sample societies are responding that whenever their godown are not used themselves they kept it idle. 50 percent of the Kerafed, 33 percent of the Marketfed and 83 percent of both the apex bodies' societies are keeping their godown idle. Some of these societies are having idle storage capacity in the season also. This means that they are not affectively using their godown facilities. About 26.7 percent of the societies are using their space to some other purpose when it is not used for storing coconut. They are using it for storing manures, gas cylinders or some other agricultural produce. 33 percent of the societies affiliated to Kerafed and Marketfed are coming under this category. Only 6.7 percent of the societies rent their space to other parties, which are affiliated to Marketfed.

During the survey, it is observed that most of the storage facilities are unscientific in nature and the produce cannot be stored for more than six months in most cases. Another limitation is that though there is space available in their godown only 10 percent of the societies give these facilities to their members. About 20 percent of the societies feel that they could have procured more, if more storage facility were available.

Transport

Product must be moved from where they are produced to where they will be consumed. Adequate and efficient transportation is a cornerstone of modern marketing system[5], Trade and transport should go together for their existence and anything which affects one will affect the other also in the same direction.

But the marketing societies do not have enough transport facilities either to procure the products from the field or to send them to the consuming markets. According to the survey less than 10 percent of the societies own transport for marketing their produce. Other societies depend

on hired transport. Due to the seasonal availability of nuts even the societies which have their own transport facilities find it difficult to meet all the requirements and have to relay on hired transport. Most of the societies do not undertake field procurement as the sale is taking place at society's premises. However, the coincidence of absence of storage facility in the consumer market and lack of transport facilities affect the society's business adversely. Most of the societies feel that they could have done more business if more transport facilities were available.

Selling

Selling is the process of distributing the products to the consumers. Sales can take place in the form of private agreement, by quoting as samples, etc.

But in the co-operative marketing sector, only very few coconut marketing co-operatives are engaged in the direct selling of coconut or coconut products. The selling of coconut/copra by the coconut marketing co-operatives includes supply of collected produce to the apex body for a commission, process the collected produce in the societies' own mill and market the value added products in their own brand name, market the collected coconut or copra directly to the upcountry market etc,. Table 5.25 shows the methods of selling adopted by the societies.

Table 5.25: Methods of selling adopted by the coconut marketing cooperatives *(No. of Respondents)*

Methods of selling	Kerafed	Marketfed	Both	Total
1- Supply to apex body	16(89)	5 (83)	3 (50)	24 (80)
2- Processing in□ their own mill and marketing the product	1 (5.5)	1 (17)	2 (33)	4(14)
3- Marketing as copra/coconut	1 (5.5)	Nil	Nil	1 (3)
4- Marketing both copra/coconut and processed products	Nil	Nil	1(17)	1 (3)
Total	18 (100)	6 (100)	6 (100)	30 (100)

Note: Figures in parentheses are percentage to total
Source: Survey data

Survey reveals that about 80 percent of the total societies supply the nuts to the apex bodies (Kerafed and Marketfed) on commission basis. 89 percent of the Kerafed affiliated societies and 83 per cent of the Marketfed affiliated societies are doing this type of selling, while only 50 percent of societies affiliated to both the apex bodies are doing this type of selling.

Only 14 percent of the total societies process the collected produce in their own mill and market the value added products in the local market. It shows that very limited number of societies, one each from Kerafed and Marketfed (5.5% and 17% respectively of the affiliated societies), are undertaking the real kind of coconut marketing. Societies are not undertaking this kind of marketing because of the risk involved in the marketing and competition from private processor and wholesalers in marketing the finished produce. Societies affiliated to both the apex bodies are leading (about 33%) in doing this kind of business. These societies are general agricultural produce marketing co-operatives and they have efficient system of processing and marketing.

Only one out of 30 societies (3%) is marketing the collected raw coconut or copra as such to the up country market. The society affiliated under Kerafed is undertaking this kind of marketing. Similarly only one out of 30 societies is doing all the types of selling which are explained above.

Inducement

In order to attract the growers to the societies they have to give inducement to them. Only 20 percent of the societies give some type of inducement to the growers. The growers need money, manures, implements, etc, for their cultivation. They also need storage facilities in case they are not willing to sell their produce at the prevailing market rate. Further they need information regarding when and where to sell, which buyer needs the produce, the qualities and quantities available and prices

the sellers and buyers are willing to receive and pay and other similar questions. Table 5.25 given below presented the type of inducement provided by the sample societies to their member growers. About 90% of the societies are giving cash advances in the form of agricultural loan. It is observed from the survey that only very few societies are providing loan on the security of agricultural produce. Most of the marketing cooperatives demand property documents or other valuables as securities which most of the growers lacks. In this case also the large farmers take the advantage. They are taking the agricultural loans at subsidised interest rates and using it for some other purposes. Societies of all the affiliations have the same characteristics with regard to the advances. The inducements like provision of storage facility and supply of manure to the coconut growers are given by about 30 percent of the societies. No societies from Kerafed are providing storage facility but 20 percent are providing manure. 40 percent of the societies of Marketfed societies and 50 percent societies of both the affiliations are providing storage and manure to the growers. Only 30 percent of the societies are providing the inducements like implements and marketing information. In this case also the societies of Marketfed and both the affiliations are only providing these facilities. 20 percent of societies from both affiliation and 10 percent of societies from Marketfed are also providing these facilities.

Table 5.26: Types of Inducement provided by the Coconut Marketing Co-operatives

(No. of Respondents)

Types of Inducement	Kerafed	Marketfed	Both	Total
1. Cash advances	9 (90)	9 (90)	9 (90)	27 (90)
2. Storage facilities	Nil	4 (40)	5 (50)	9 (30)
3. Supply of implements	Nil	1 (10)	2 (20)	3 (30)
4. Supply of manure	2 (20)	3 (30)	4 (40)	9 (30)
5. Provide market information	Nil	1 (10)	2 (20)	3 (10)

Note: Figures in parentheses are percentage to total
Source: Survey data

Period of Procurement

Since coconut is a perennial crop, it gives yield through out the year. But the quantity of yield is different in season and off season. The marketing co-operatives are supposed to procure nuts through out the year from the growers and the apex body also requires the raw material throughout the years. But the study shows that most of the societies are not undertaking procurement through out the year. Table 5.27 given below explains the period of procurement of coconut by the marketing co-operatives.

Table 5.27: Period of procurement of coconut during a year

(No. of Respondents)

Period	Kerafed	Marketfed	Both	Total
1)Through out the year	2 (11)	1 (17)	2 (33.3)	5 (17)
2) less than 9 months	4 (22)	3 (50)	2 (33.3)	9 (30)
3) Less than 6 months	12 (67)	2 (33)	2 (33.3)	16 (53)
4) Less than 3 months	Nil	Nil	Nil	Nil
Total	18 (100)	6 (100)	6 (100)	30 (100)

Note: Figures in parentheses are percentage to total
Source: Survey data

Table shows that 53 percent of the societies are procuring coconut only for a period of 3 to 6 months in a year. The affiliation wise study shows that 67% of the Kerafed affiliated societies, 33% each of the Marketfed affiliated societies and societies affiliated to both the apex bodies procure only 3 to 6 months in a year. Only 17% of the coconut co-operatives undertake the procurement through out the year. That is, 33% of the societies affiliated to both the apex bodies, 17 percent of the societies affiliated to Marketfed and 11 percent of the societies affiliated to Kerafed are procuring coconut throughout the year. 30 percent of the total societies undertake procurement for a period of 6 to 9 month in a year. So it is inferred from the study that more than 50 per cent of the societies are

undertaking the coconut procurement only below 6 months in a year, and the quantity procured by these societies are very nominal. These societies are hence not serious in the coconut procurement.

Payment

The coconut co-operatives are usually making ready payments for the produce. Some societies are giving crop loans to the farmers and taking the yield as the security. These types of societies are providing storage facilities to the growers. The member growers of this type of societies pledge their produce to the co-operatives when there is fall in market price. The growers get financial assistance on the basis of the value and quantity of produce pledged with the society. When the market conditions become favourable, the coconut growers take the produce from the society and dispose it in the open market or in the society itself. This type of assistance from the co-operatives helps the farmers from disposing their valuable produce at low price. But the co-operatives providing this type of assistance are very few in number.

Most of the co-operatives are giving ready payment for the produce except at the time of procurement under PSS. Time taken by the coconut co-operatives for the payment to growers are depicted in the Table 5.28 given below.

Table 5.28: Time taken for the Payment *(No. of Respondents)*

Payment	Kerafed	Marketfed	Both	Total
1)Same day	13 (72)	3 (50)	4 (66)	20(67)
2) within a week	4 (22)	Nil	1 (17)	5(17)
3) within two weeks	Nil	1 (16.6)	Nil	1 (3)
4) Within a month	1 (6)	1 (16.7)	1 (17)	3 (10)
5) More than one month	Nil	1 (16.7)	Nil	1 (3)
Total	18 (100)	6 (100)	6 (100)	30 (100)

Note: Figures in parentheses are percentage to total
Source: Survey data

The survey shows that 67 per cent of the cooperatives are making ready payment for the nuts brought by the coconut farmers. Most of the coconut co-operatives under the study are PACS. They have enough funds in their hands from the banking business. These funds are used for the payment to growers, even though the apex bodies releases fund after a long time, especially when the copra is procured under PSS. About 72 per cent of the societies affiliated to Kerafed, 50 per cent of the societies affiliated to Marketfed and 66 per cent of the societies affiliated to both the apex bodies are paying cash on the same day.

17 per cent of the societies take a week for making the payment. Coconut cooperatives say that this happens when there is unprecedented shortage of fund, or when there is large amount of procurement of copra, especially under price support scheme. Four of the Kerafed affiliating societies and one society affiliated to both the apex bodies are coming under this category. Only one society affiliated to Marketfed takes 14 days for the payment. Similarly one society each from all the category of affiliation takes a month for the payment. It is observed from the study that these societies are the general purpose marketing societies which face severe shortage of fund. These societies had been run at loss for a long period and the government has reviewed them recently. But still they are facing financial problems. One society from Marketfed takes more than one month for making payment to growers. It is also observed that this society procures copra only under PSS. Only large scale growers and traders are supplying copra to this marketing society because they do not need money immediately. During the year 2000-01 there was a sharp decline in the market price of coconut and the disparities between market price and support price was high. So in order to get the advantage of Minimum Support Price (MSP), large scale growers and traders arrange copra by themselves and supplied to this society.

Profit from the Coconut Trade

As mentioned earlier only very few co-operatives are doing exclusive coconut trading in Kerala. The majority of the active societies are undertaking the coconut marketing as a subsidiary function. These cooperatives are coming into the picture only when there is procurement of copra under PSS. Some of the marketing cooperatives are undertaking the coconut marketing activity through out the year efficiently and they are making profit. The result of the coconut marketing of the sample societies are presented in Table 5.29

Table 5.29: Result of Coconut Trade *(No. of Respondents)*

Profit (Rs in '000)	Kerafed	Marketfed	Both	Total
1. Loss	2 (11)	2(33)	Nil	4 (13)
2. No profit	3 (17)	1(17)	Nil	4 (13)
3. Below 50	9 (50)	1 (17)	1 (17)	11 (38)
4. 50-100	2 (11)	Nil	2 (33)	4 (13)
5. Above 100	2 (11)	2 (33)	3 (50)	7 (23)
Total	18 (100)	6 (100)	6 (100)	30 (100)

Note: Figures in parentheses are percentage to total
Source: Survey data

From the Table, it can be seen that 13 per cent of the societies suffered loss from the coconut trade and another 13 per cent run at no profit no loss basis. Only the remaining societies can make profit from the coconut trade. Out of this, 23 per cent got the highest amount of profit of more than one lakhs rupees, 13 per cent made profit between Rs. 50000 and Rs. 1 lakh, and 38 per cent got only less than Rs.50000 profit.

Among the affiliations, the societies affiliated to both the federations have performed well. All the societies of this category make profit from the coconut trade. Out of this 50 per cent of the societies under the group of

Rs. 1 lakh and above while 17 per cent makes only less than Rs. 50000 and the remaining societies come in between the above two groups. The performance of Marketfed societies in the coconut trade was very poor. 33 per cent of such societies makes huge losses and 17 per cent is running either at no loss no profit basis. The remaining 50 per cent makes profit and out of this 33 per cent makes profit of more than Rs. 1 lakh and 17 per cent have less than Rs. 50000. The Kerafed societies performed moderately well in the coconut trade. More than 77 per cent of the societies make profit; 11 per cent makes loss and the remaining 11 per cent is run at no loss no profit basis. So it was inferred from the Table that the societies affiliated to both federations had performed well in coconut trade because they are doing coconut trade scientifically and most of the Marketfed societies are running at loss because of the inefficient management, lack of fund etc.

EFFICIENCY OF COCONUT MARKETING SOCIETIES IN KERALA

As stated in the methodology, the efficiency of the coconut marketing societies in Kerala has been studied through Efficiency Index obtained from the sample societies affiliated to all the apex bodies o f the state i.e. Kerafed, Marketfed and both the above federations.

In order to analyse the regional and affiliation imbalance of efficiency among the coconut marketing societies, the efficiency structure of the sample coconut marketing societies are studied in the following ways:

1) Affiliation – wise analyse

2) Regional – wise analyse

3) By considering both affiliations and regions

Affiliation-wise study of Efficiency structure

The calculated Mean Efficiency indices of the coconut marketing societies among the affiliations are presented in Table 5.30.

Table 5.30: Mean efficiency of coconut marketing societies in Kerala

Affiliation	Sample size	Mean efficiency index
Kerafed	18	34.8
Marketfed	6	33.5
Both	6	42.7
Total	30	37.0

Source: Survey data

Table 5.30 shows that the efficiency level of coconut marketing co-operatives among three affiliations is different. The level of efficiency of the coconut marketing societies in the state taken as a whole is medium. Against the maximum efficiency Index of 60 attainable by most efficient society the mean Index achieved is 37. This indicates that the aggregate level of performance of the societies is about 61 percent of the maximum efficiency.

Among the affiliations, societies affiliated to both the federations are found to be relatively more efficient than those in other types of affiliation (Mean Index: 42.7). The least efficient societies belong to the Marketfed with the mean Index of 33.5. Societies belongs to the Kerafed are mediocre, standing between the other two affiliation types in the level of efficiency (Mean Index 34.8)

Even though there is significant variation in the efficiency level of societies among the affiliations when considering the absolute values, it is found to be statistically insignificant, as the calculated value of 'F' (2.765) is less than the tabular value of 3.35 at 5% probability level (Table 5.31).

Table 5.31: Results of the analysis of variance among affiliations.

Source of Variation	Sum of squares	Degrees of Freedom	Mean Square	F. ratio
Among affiliation	306.533	2	153.267	*2.7645
Error	1,496.83	27	55.48	

*Note: *Not significant at 5% level*
Tabular value 3.35
Source: computed from survey data.

Analysis of Efficiency within the societies affiliated to both the Federations *(Kerafed and Marketfed)*

The efficiency Index of the coconut marketing co-operatives affiliated to both the apex bodies as presented in Table 5.32 shows that there is wide difference in the performance efficiency among the coconut co-operatives. The efficiency level of two societies is above 75 percent of the maximum efficiency (Index above 44). Efficiency is in between 50 and 75 percent (Index between 30 and 44) for 3 societies and the remaining society is below the average efficiency level (Index below 30). The variation in the level of efficiency is also statistically tested and the calculated value of 'F' obtained is (0.185256), which is less than the tabular value of 2.758 at 5 percent level of significance. It shows that there is no significant difference among the efficiency structures of the societies within the affiliation, even though the absolute value shows there is significance difference among the societies.

On the basis of Mean Efficiency Index obtained, society No. A9 having an Index of 59 can be considered the most efficient society in this affiliation as well as other affiliations also. At the other extreme the society No. B2 with Index 27, is the least efficient.

Table 5.32: Efficiency Index of coconut marketing co-operatives (Affiliated to both the Federations *(Kerafed and Market fed)*)

Sl. No.	Society code	Year Efficiency Index					Mean Efficiency Index
		I year	II Year	III Year	IV Year	V Year	
1	2	3	4	5	6	7	8
1.	C7	35	40	44	42	49	42
2.	B1	57	51	58	58	56	56
3.	**B2**	**26**	**24**	**23**	**30**	**32**	**27**
4.	**A9**	**58**	**59**	**59**	**60**	**59**	**59**
5.	A4	30	32	36	34	33	33
6.	A5	40	32	41	40	42	39

Note: F ratio: 0.185256 (Not significant), Degree of freedom 4, 25
Source: Computed from the survey data

KERAFED: The level of performance of the coconut marketing societies affiliated to Kerafed is lower than that of the societies affiliated to both the apex bodies. Only one society (5%) is functioning above 75 percent efficiency level (Index above 44). The efficiency level of the majority of societies (77 %) is in between 50 - 75 per cent. The result of the analysis of variance shows a calculated 'F' value of (2.761094) as against the tabular value of (2.47901) at 5 percent probability level (Table 5.33). This result clearly indicated that there is no uniformity in the level of efficiency among coconut marketing co-operatives affiliated to Kerafed. In other words, the efficiency level of coconut co-operatives affiliated to Kerafed also varies significantly. The society No. C06 is the most efficient society under Kerafed (Index 45) and society No. A06 is the least efficient (Index 25)

Table 5.33: Efficiency Index of coconut co-operative society

(Affiliated to Kerafed)

Sl. No.	Society Code	Year Efficiency Score					Mean Efficiency Index
		I Year	II Year	III Year	IV Year	V Year	
1	2	3	4	5	6	7	8
1.	A01	28	30	29	35	38	32
2.	A02	36	32	30	40	37	35
3.	A03	28	25	30	31	26	28
4.	**A06**	**20**	**24**	**26**	**25**	**30**	**25**
5.	A07	33	34	30	37	36	34
6.	A08	39	40	41	40	40	40
7.	B06	30	30	34	33	33	32
8.	B07	28	38	34	36	44	36
9.	B10	25	28	29	30	28	28
10.	C01	40	38	41	39	42	40
11.	C02	34	38	40	43	40	39
12.	C03	35	35	43	42	40	39
13.	C04	37	40	30	32	36	35
14.	**C05**	**40**	**45**	**45**	**46**	**49**	**45**
15.	C06	35	29	28	30	38	32
16.	C08	34	30	33	36	37	34
17.	C09	30	33	36	40	51	38
18.	C10	30	31	36	36	37	34

Note: *F ratio: 2.760944 (significant), Degrees of freedom 4, 85*

Source: Computed from the survey data

MARKETFED: As compared with the societies affiliated to Kerafed and societies affiliated to both the apex bodies, the level of efficiency of the coconut co-operatives affiliated to Marketfed is very low. Of the six societies studied under this category, no societies are working at a level of above 75 percent of the maximum efficiency (Index above 44). The performance of the five societies is in between 50 to 75 percent. (Index between 30 and 44). Similar to the efficiency level of cooperatives affiliated to both apex bodies, the cooperatives affiliated to Marketfed have no significant difference in the

efficiency level (Table 5.34).This variation is also statistically not significant as the calculated 'F' value of 0.4429 is less than the tabular value of 2.7587 at 5 percent probability level. On the basis of mean efficiency Index, society No: B09 can be considered as the most efficient society under this category (Index: 39). The least efficient society in this category is society No: B09 (Index: 26).

Table 5.34: Efficiency Index of coconut co-operative society

(Affiliated to Marketfed)

Sl. No	Society code	Year Efficiency Index					Mean Efficiency Index
		I year	II Year	III Year	IV Year	V Year	
1	2	3	4	5	6	7	8
1.	A10	28	31	34	37	35	33
2.	B03	28	30	30	29	33	30
3.	B04	38	38	36	37	41	38
4.	**B05**	**23**	**25**	**29**	**24**	**29**	**26**
5.	B08	35	35	33	36	36	35
6.	**B09**	**40**	**39**	**40**	**35**	**41**	**39**

Note: *F ratio: 0.442902, Degrees of freedom 4,25 (Not significant)*
Source: Computed from the survey data

From the above analysis of the efficiency structure of coconut co-operative marketing societies in Kerala, it can be inferred that (1) in general, the efficiency level of the coconut marketing societies in the state is above medium (2) there is significant variation in the level of efficiency of the coconut co-operative marketing societies affiliated to single apex societies (Kerafed or Marketfed) ;and both the apex bodies. (3) There is no significant variation in the level of efficiency of the coconut co-operative marketing societies affiliated to Kerafed and Marketfed. (4) Within the affiliation types also (i.e. Kerafed, Marketfed and Both), there is no uniformity in the efficiency level of societies.

On the basis of the above findings, it can be inferred that the efficiency level of the coconut co-operative marketing societies in Kerala is of varying degree; the level of efficiency varies between single affiliation and double affiliation as well as within the affiliation type.

Influence of Region and affiliation over the Efficiency structure of coconut co-operative Marketing societies

The efficiency structure of the coconut marketing co-operative is studied in the previous part by analyzing the efficiency of societies among the different types of affiliation and within the affiliation. It is concluded that the efficiency structure of the coconut marketing societies are varying from society to society in the state.

In this part, influence of Region and Affiliation over the efficiency structure of coconut marketing co-operatives are studied to know whether the region in which the coconut marketing societies belongs or the apex body to which the coconut marketing societies are affiliated have any influence over the efficiency of coconut marketing societies in the state. For the purpose of the study 'Analysis of Co-variance Model' with seven co-variates is applied'. 'Scheffe Test' is also carried out to see whether there is any interaction among the regions and affiliations over the efficiency structure of the coconut marketing societies *(See Appendix IV)*. Respective values of 'F' and 'P' are given in Table 5.35 and the results of the Scheffe test are given in Table 5.36.

Table 5.35: Summary of the Region and affiliation Effects over the efficiency structure of coconut co-operative Marketing societies.

Variable	Degree of freedom Effect	MSS Effect	Degree of Freedom Error	MSS Error	F ratio	P-Level**	Significant Level
1	2	3	4	5	6	7	8
Region	2	11.96	20	26.48	0.4515	0.643	NS *
Affiliation	2	27.57	20	24.92	1.1065	0.350	NS *

*Note: *Not Significant*

***P value at 5% significant Level (0.05)*

Source: Computed from the Survey data

Table 5.36: Influence (interaction) of Region an Affiliation over the Efficiency structure of coconut marketing societies—Results of Scheffe's Test.

	Average Efficiency Index of societies (Region x Affiliation)								
	{1}	{2}	{3}	{4}	{5}	{6}	{7}	{8}	{9}
	32.33	43.33	33.00	33.75	41.50	32.25	37.78	42.00	0
Region x Affiliation	**P - Values (Region x Affiliation)**								
North - Kerafed {1}		0.361	1	1	0.745	1	0.817	0.905	--
North - Both {2}	0.361		0.905	0.626	1	0.447	0.934	1	--
North - Marketfed {3}	1	0.905		1	0.976	1	0.999	0.986	--
Central - Kerafed {4}	1	0.626	1		0.905	1	0.981	0.966	--
Central - Both {5}	0.745	1	0.976	0.905		0.79	0.998	1	--
Central - Marketfed{6}	1	0.447	1	1	0.79		0.891	0.917	--
South - Kerafed {7}	0.817	0.934	0.999	0.981	0.998	0.891		0.999	--
South - Both {8}	0.905	1	0.986	0.966	1	0.917	0.999		--
South - Marketfed{9}	--	--	--	--	--	--	--	--	

*Note : All **P** values are above 0.05 so not significant at 5 % Level*

Source : calculated from the survey data.

The interactions of regions and affiliation *(Regions: North, Central and south, Affiliation: Kerafed, Marketfed and both)* are studied in detail. From the Table 5.36 it could be inferred that even if the average efficiency between region and affiliation seems to be varying, the P value calculated for each interaction (which is above 0.05)shows that the region and affiliation have no influence over the efficiency structure of coconut marketing co-operatives. The calculated P value for every interaction is higher than the Table value of 0.05. The P values of North x Kerafed (0.361), North × Marketfed (0.976) and North x Both (0.905) shows that the region and affiliation have no influence over the efficiency structure of coconut co-operative marketing societies. That is, the region to which a society belongs or apex body to which a society is affiliated will not make any influence over the efficiency of a marketing society. The respective figures in the Table proves that the efficiency of the marketing societies belonging to central region and southern regions which are affiliated to Kerafed, Marketfed and both have also not influenced by regions or affiliations.

Table 5.35 substantiate these findings because the calculated 'P' value for the region (0.643) is higher than the Table value of 'P' (0.05) at 5% probability level. Similarly, the calculated 'P' value for affiliation. (0.350) is also higher than the Table value of 'P' (0.05) at 5% probability level.

From the above analysis of the efficiency structure of coconut co-operative marketing societies in Kerala, it can be inferred that (1) the region and affiliation have no significant affect on the level of efficiency of the coconut marketing co-operatives.

Factors Associated with Efficiency Structure

In order to examine the cause and effect relationship of the efficiency structure of the coconut co-operative marketing societies, an analysis of co-variance Model is applied. For the purpose of the study, two variables—

Region and Affiliation and Seven co-variates are selected. The Co-variates are:

a) Input supply

b) Infrastructure facility

c) Attitude of members

d) Link with apex bodies

e) Attitude of Management

f) Financial assistance received by the society

g) Attitude of government

For this purpose zero order correlation value is tested with 't' at 5% probability level. Step-wise regression analysis is also carried out to identify the relative importance of the variables influencing the efficiency of the coconut marketing society. Respective values of Beta, B, t and p are given in Table 5.37

Table 5.37: Analysis Results (considering all Co-variates)

Variables	BETA	St. Err. of BETA	B	St. Err. of B	t(22)	p-level
Intercept			13.770	17.035	0.808	0.428
1) Input Supply (A)	0.633	0.139	1.021	0.224	4.566	0.000
2) Infrastructure Facility (B)	-0.025	0.136	-0.082	0.453	-0.181	0.858
3) Link with Apex body (C)	-0.099	0.132	-0.360	0.481	-0.748	0.462
4) Attitude of Members (D)	0.336	0.149	1.225	0.544	2.252	0.035
5) Attitude of Management (E)	0.182	0.140	0.573	0.440	1.302	0.206
6) Financial Assistance (F)	-0.034	0.142	-0.119	0.490	-0.242	0.811
7) Attitude of government (G)	-0.233	0.134	-0.913	0.527	-1.734	0.097

Source: Calculated from the Survey data

Table 5.38: Regression Summary Table

(By considering all Co-variates)

R value	R^2 value	Adjusted R^2	Degree Of Freedom	F value	Std. Error	P value
0.822443	0.676413	0.57345	(7,22)	6.5697	5.0163	<0.00029

Source: Calculated from the Survey data

Table 5.37 shows that the efficiency structure of coconut marketing cooperatives is influenced by the covariates rather than the region or types of affiliation. The inference is substantiated by the p value ($p< 0.00029$) at 5 % level of significance (Table 5.38). The value of adjusted R^2 (0.573454) shows the degree of relationship among the efficiency and the various covariates. Since it is high, the relationship among the variables will be high and the p value (0.00435), which is less than 0.05 shows that there is relationship among the factors. The degree of relationship will be strong when the calculated P value becomes less.

After studying all the covariates and its relationship with efficiency structure of coconut marketing co-operatives, only those covariates which have bearing on the efficiency structure of coconut marketing societies are again depicted in the Table 5.39. The result is derived by eliminating the co-variates which do not have any influence over the efficiency structure by applying forward step-wise regression analysis.

Table 5.39: Analysis Results (considering influencing Co-variates)

Variables	BETA	St. Err. of BETA	B	St. Err. of B	t(25)	p-level
Intercept			3.195	9.781	0.327	0.7466
1) Input Supply (A)	0.615	0.125	0.992	0.202	4.914	0.0005
2) Attitude of Members (D)	0.314	0.129	1.146	0.471	2.436	0.0223
3) Attitude of Government (G)	-0.214	0.124	-0.841	0.488	-1.722	0.0973
4) Attitude of Management (E)	0.204	0.120	0.642	0.377	1.702	0.1011

Note: Significant effects are due to the co-variates A, D, G and E
Source: calculated from survey data

On the basis of the Regression analysis and P values for each of the seven covariates, the following inferences are drawn.

The covariate 'input supply' such as provision of fertilizer/manure, storage facilities, marketing information to growers, pesticides or other means against pests and diseases, implements etc, have a significant bearing on the performance of coconut co-operatives.

The calculated 'P' value 0.00005 (Table 5.39) and combined P value P>0.00001, (Table 5.40) for the 'input supply' factor indicates that the more inputs the society provides, the higher will be the performance efficiency of the society. Conversely, for the limited supply of input factors, the lesser will be the efficiency of coconut cooperatives. Therefore, a well formulated facility for the supply of these input factors is a pre-requisite for an efficient coconut marketing society. The analysis shows that if the coconut marketing society provides fertilizers/manures, pesticides, etc to the growers, at subsidized price, they will supply their produce to the society and the society can establish a good relation with the growers. Only very limited number of coconut marketing societies are providing these kind of input factors to the growers. It is observed from the study that Both the affiliation

societies which are engaging in the coconut procurement through out the year is only supplying input factors and so they are getting better response from the growers. Similarly, when the coconut marketing cooperatives provides implements on hire, storage facilities etc, the growers will have an attachment with the society.

But the infrastructure facilities such as godown facilities, oil content testing condition, transportation facilities, etc acquired in the societies have no effect in the efficiency structure of the coconut marketing cooperatives in the state. The calculated 'P' value 0.858 (Table 5.37) for the factor 'infrastructure facility' ($p>0.05$) indicates that this factor is not necessary for increasing efficiency structure of the coconut cooperatives.

The third factor 'Link with apex body' is valued on the basis of the following points:

1) The apex body procures entire quantity of coconut supplied by the society.
2) The frequency of rejection of coconut load by the apex body in a year.
3) Distance of apex bodies godown from the society.
4) Support of the apex body by providing fertilizer/seeds etc
5) Conducting of promotional activities by the apex body.
6) Financial assistance provided by the apex body.
7) Visiting intervals of mobile team officials of apex body.
8) Representation in the meetings of apex bodies etc

The calculated 'P' value 0.46234 (Table 5.37) shows that the coconut co-operative marketing societies are not depending the apex bodies' for the coconut marketing. The apex bodies' activities do not affect the efficiency structure of coconut cooperatives. Most of the activities of the apex bodies

towards their affiliating societies are not favourable. The co-operative societies are also not satisfied with the service rendered by their affiliating bodies. It is observed from the study that only the Marketfed societies depends on their apex bodies for their working. The PACS are mainly acting as agents of apex bodies and they are under the Price Support Scheme only. Their main business is banking. But during the procurement period they are also facing number of problems.

The fourth factor 'Attitude of Members' studies the relationship between grower members and coconut cooperatives by taking into consideration the points such as supply of marketable surplus to the societies, attending the meetings, solution for the problems faced by growers, reaction of members towards the societies etc.

From the 'P' value 0.0223 (Table 5.39) and combined P value $P<0.00001$ (Table 5.40) reveals that the attitude of members towards the coconut co-operative marketing agencies have a positive relationship with the efficiency of the cooperative societies. The magnitude of efficiency which is measured in terms of 'P' is significantly correlated. This implies that the factors which are considered for measuring the attitude of members has a direct influence on the working of the coconut marketing cooperatives (statistically, the degree of attitude of members towards coconut marketing societies are more, the greater will be the efficiency of the society). The conclusion seems to be that the members' attitude has to be so augmented as to put the coconut marketing cooperatives on a sound footing. Without the grower members' cooperation a marketing society can not survive, it is their discretion to decide whether their marketable surplus has to be disposed through cooperatives or not. It can be said without doubt that the orientation of the coconut towards coconut marketing cooperatives must be affirmative and constructive for the smooth working of coconut marketing

cooperatives. So a detailed study on the attitude of growers towards the marketing societies is made in the next chapter.

'Effective management' can play a greater role in planning and implementing various coconut development programmes and thereby making efficient functioning of coconut cooperatives. The calculated 'P' value of 0.2064 (Table 5.37) and combined p value P<0.0001(Table 5.40) between the 'management attitude' and efficiency level indicates that a positive attitude on the part of the management towards the functions of coconut marketing like fixation of procurement price, method of collection, payment, attending member's grievance etc will increase the level of efficiency of the society.

The 'P' value of 0.8109 (Table 5.37) between 'Financial Assistance' received by the societies from various agencies and efficiency structure, shows that the points considered for measuring this factor have no effect on the efficiency structure of marketing societies. Only very few marketing societies are showing positive relationship between efficiency and financial assistance. It is observed that these societies are not doing banking business, they are blindly depending the apex bodies and government for financial assistance. But these bodies failed to release funds to these types of societies at the proper time. Some exclusive marketing societies find very difficult to run the institution for want of fund. But the banking societies which are doing marketing activities are not depending the apex bodies and government for the funds. They have enough funds for making payments to the growers and for other infrastructure activities.

The calculated 'P' value of 0.0968 (Table 5.37) between the efficiency level and 'government attitude' towards coconut marketing cooperatives, though not high, is also statistically significant as the combined value of P< 0.00001 is less than the tabular value of 0.05 at 5% probability level. The

indication is that constructive attitude of the government towards the problems of the society will improve the efficiency level of the societies. But a negative approach, of the concerned government officials towards cooperatives engaged in coconut marketing activities will eventually lead to the inefficient working of the society.

Thus, of the seven co-variates analysed, only four variables are affecting the efficiency structure of the coconut marketing societies. The magnitude of relationship among these variables and efficiency structure were given in Table 5.39

Table 5.40: Regression Summary Table

(By considering influencing Co-variates)

R value	R^2 value	Adjusted R^2	Degree Of Freedom	F value	Std. Error	P value
0.816884	0.667299	0.61406	(4,25)	12.536	4.7715	<0.0001

Source: Calculated from the Survey data

Table 5.40 shows that co-variates 'Input supply" is the most important factor influencing the efficiency of the society 'P' value (0.00005). Next comes the 'Attitude of Members' 'P' value (0.0223), then 'Attitude of Government' 'P' value (0.0973) and the last influencing factor is 'Attitude of Management' P Value (0.1011). The factors 'Infrastructure facilities', 'Link with apex bodies' and 'Financial assistance received by the societies' have no effect over the efficiency structure of coconut marketing cooperatives, so these factors have not included in the above Table.

On the basis of the above findings, it seems safe to conclude that the input supply provided by the society is the primary factor that determines the

efficiency or weakness of coconut marketing cooperatives. So for the efficient functioning of coconut marketing cooperatives, the society should provide required inputs such as fertilizers/manures, storage facility, marketing information, pesticides, implements on hire etc, to the growers, then only a society can make good relations with growers and their by the society and their grower members can take advantage out of this. Such a variable has to be supported by a healthy relationship between primary societies and members attitude of management and government.

From the overall study of efficiency structure of coconut marketing co-operatives, it can be inferred that about 80% of the societies (societies affiliated to Kerafed and Marketfed) are having similar efficiency level. These societies achieved 30 to 35 percent of the highest possible efficiency index (Efficiency Index 60). But the performance of these societies towards coconut marketing is found very poor. Only 20% of the societies (societies affiliated to both Kerafed and Marketfed) have achieved about 75% of the maximum efficiency level. These societies have taken the coconut marketing seriously. So it can be concluded that even though the general marketing societies and PACS in Kerala are efficient enough to undertake coconut marketing activities, they are reluctant to do this because of many reasons, explained else where in the study. The societies which are involved in the real coconut marketing activities are also not free from the problems of coconut marketing. Even though the societies are having enough efficiency in the coconut marketing, they are also facing many problems, which are discussed in detail in the next chapter.

ROLE OF PRIMARY MARKETING SOCIETIES IN THE MARKETING OF COCONUT IN KERALA

The study made with regard to the apex level co-operatives' share in the coconut market in Kerala inferred that only 4.11% of the market share of

coconut is held by them.

In order to have a more precise estimation of market share of coconut held by the co-operatives, an attempt has been made in this chapter to estimate the market share from the lower level. It was made on the basis of the argument that some of the primary level marketing societies are also doing coconut processing and marketing in their own way and hence the volume of such trade must also be taken into consideration while calculating the coconut market share of the co-operatives.

For the purpose of this study the average procurement of coconut by the primary level societies for the past five years are taken and which is projected for the total number of societies participating in the coconut marketing during these periods. Then the procedures and conversion tables which was followed in the calculation of state level marketing societies market share are also used here. The related figures are presented in Table 5.41.

Table 5.41: Share of Primary Marketing Societies in the Coconut Market of Kerala

Year	Estimated Marketable Surplus of Copra (in MT)*	Average Procurement of a Society **	Projected Procurement ♦	Market Share
1996-97	706969.9	147.8	30299.0	4.29
1997-98	697983.5	207.3	42496.5	6.09
1998-99	687612.0	209.38	42922.9	6.24
1999-00	761035.9	214.46	43964.3	5.78
2000-01	736382.6	413.8	84829.0	11.52
Average	**717996.8**	**216.03**	**48902.34**	**6.78**

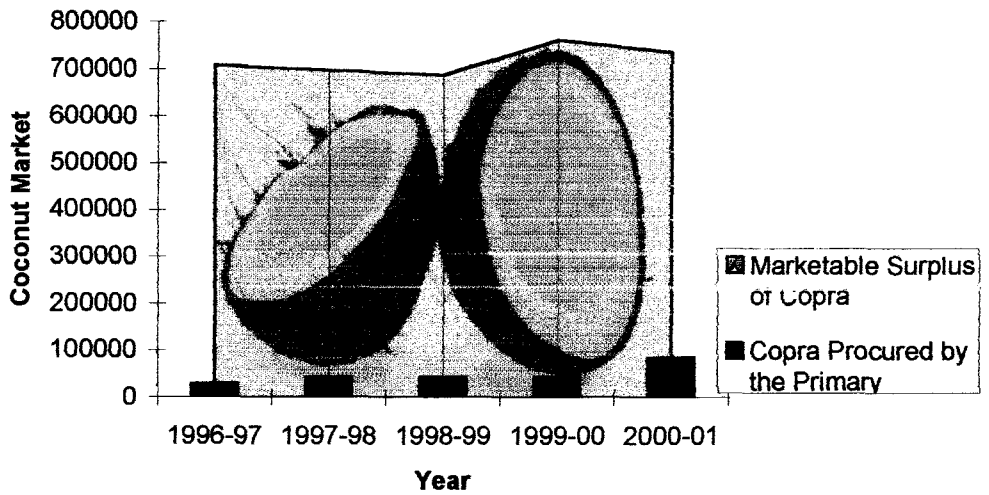
Source: * *Computed from the secondary data with the use of Conversion table.*

** *Computed from the survey data.*

♦ *Projected on the assumption that all the 2.5 societies have been procured coconut throughout the study period.*

Table 5.41 shows that the market share held by the primary societies in coconut market of Kerala ranges from 4.29% in the year 1996-97 to 11.52% in 2000-01. It shows an increasing trend except in the year 1999-00 (5.78%). On an average 6.78% of the coconut market in Kerala are held by the Co-operatives sector, consisting of primary level marketing societies and apex level marketing societies.

Figure 5.7: Total Marketable Surplus to Market Share of Coconut of the Primary Societies



The figure 5.7 indicates that the influence of co-operative sector over the coconut market in Kerala is nominal. It substantiates the argument that the co-operative sector could not succeed on regulating the coconut market in Kerala so far. Increase in the market share to 11.52% during the year 2000-2001 may be because of massive procurement operation taken place under PSS. In the remaining years the market share of the co-operatives were as low as 6%.

Comparison of Market Share of the Apex Societies And Primary Societies in the Coconut Market of Kerala

As explained elsewhere in the study, the primary societies are procuring nuts from the coconut growers not only for their own purposes but also for their apex societies. So the market share of the coconut held by the primary societies includes both their own share and their apex bodies share in the coconut market of Kerala. A comparison of the market share of apex societies with the total market share under co-operative sector gives the market share actually possessed by the primary societies, i.e. the excess of the market share over and above the total market share under coconut sector indicates the market share of primary societies. Table 5.42 and Figure 5.8 gives the percentage of market share of the coconut held by the co-operative societies in the bottom level and higher level.

Table 5.42: Market Share of Coconut of The Co-Operative Sector

(in M.T)

Year	Total market share of co-operative sector	Market Share of apex societies	Market share of Primary societies
	(1)	(2)	(1) - (2)
1996-97	4.29 (100)	1.48 (34.5)	2.81 (65.5)
1997-98	6.09 (100)	1.21 (19.9)	4.88 (80.1)
1998-99	6.24 (100)	1.41 (22.6)	4.83 (77.4)
1999-00	5.78 (100)	2.09 (36.2)	3.69 (63.8)
2000-01	11.52 (100)	10.76 (93.4)	0.76 (6.6)

Source: Computed from the survey data

Fig. 5.8: Distribution of Market share of the Coconut under Co-operative sector

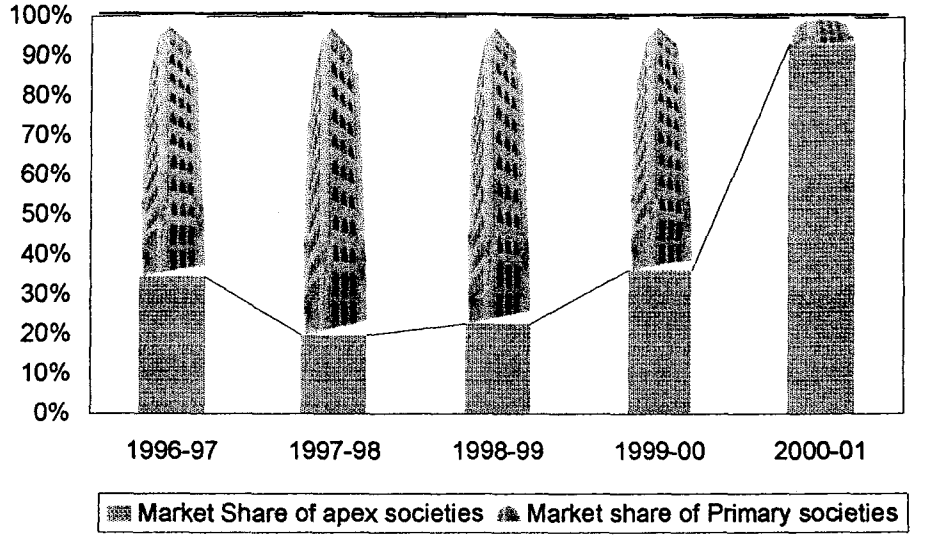


Figure 5.8 shows that the primary marketing societies holds major part of the market share of coconut under co-operative societies. During 1996-97 about 65.5% of the market share under co-operative sector is held by the primary sector, it increases to 80.1% during 1997-98 but after that it shows a decreasing trend and to reaches to a bottom level of 6.6%. Sharp fall in the market share of coconut under primary sector during 2000-2001 is only because of the unpredicted fall in the market price and almost the entire procurement of coconut by the primary co-operatives were supplied to the apex societies, this happens only in exceptional cases. So without considering the last years figure it can be concluded that about $3/4^{th}$ of the market share of coconut traded under co-operative sector is handled by the primary societies and only the remaining $1/4^{th}$ is held by the apex level societies.

As far the coconut marketing is concerned the study so far made reveals that the co-operative sector in Kerala can hold only 6.78% of the marketable surplus of coconut in the state. Out of this $3/4^{th}$ is possessed by

the primary level societies and the remaining part in the hands of apex level societies. It shows the role of co-operative sector in the coconut marketing in Kerala is in sufficient and hence it can be says that, the co-operative marketing agencies could not succeeded in regulating the coconut market in Kerala.

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Chapter VI

PROBLEMS OF CO-OPERATIVE MARKETING IN COCONUT

- *CO-OPERATIVE MARKETING SOCIETIES*
- *COCONUT GROWER MEMBERS*
  - ***PROFILE***
  - ATTITUDE
  - PROBLEMS

VI PROBLEMS OF CO-OPERATIVE MARKETING IN COCONUT

A detailed discussion of the working of the marketing societies especially the marketing methods of coconut had been made in the chapters IV and V. This chapter reviews the various problems confronted by the societies and coconut grower members. A brief profile of the coconut grower members of the societies and their attitude towards the societies are also incorporated in this chapter

The problems encountered by the societies are identified through the formal and informal interviews and discussions made with the society managers, officials etc. Schedule I was employed to extract information in this respect.

The problems encountered by the societies are multi-dimensional in nature. They are referred to as constraints that affect and limit the working of the societies or those that affect the overall performance of the societies in various ways.

This chapter has been divided into two sections. Section one deals with the problem of marketing society and section two deals with the problems encountered by the grower members while marketing their produce, their profile and attitude.

Section I

The exclusive engagement in the marketing of coconut by the marketing societies is hampered by a diversity of problems. There are certain problems which are common to all types of marketing societies.

Some of them are even common to a wide range of PACS, which are engaged in both banking and agricultural produce marketing. Coconut marketing through the co-operatives in the state is handled by the PACS and general marketing agencies. Even though the prime object of the co-operatives are promotion, self help and co-operation among members, the PACS in Kerala are engaging in the coconut marketing only because their byelaws include the processing and marketing of agricultural produce as one of the objectives. Moreover the societies are facing severe pressure from the government through the apex bodies in which the societies are affiliated and also from the local politics.

In the case of general marketing societies, the capacity of investment in the marketing of coconut is very low. Compared to PACS the availability of funds and other infrastructural facilities are very weak in the general marketing societies, because they are not doing banking business, which is a main source of revenue for the societies. Owing to various problems, a good number of general marketing societies are either becoming sick or are struggling for survival.

The problems commonly faced by the coconut marketing co-operatives are:

i) Non-availability of coconut/copra.

ii) High transportation cost and transportation bottle necks

iii) Lack of financial assistance

iv) Non-payment of price by buyers especially by mills/ price support agencies.

v) Unstable price

vi) Sudden marked intervention of government.

vii) Storage loss and lack of storage facilities.

viii) Unsatisfactory quality of the produces - high mixture and foreign matter content, particularly faced by processors etc.

External and Internal Problems

The problems faced by the marketing societies may be divided into two groups - external and internal. The external problems are those which result from factors beyond the control of the societies like the availability of produce, price etc., while the internal problems are those which are not influenced by external forces. The internal problems in marketing societies are lack of funds, lack of storage facility, lack of processing facilities etc. However, the external and internal problems are mutually correlated. The chief problems facing the marketing societies are discussed below.

Availability of Coconut/copra

Difficulty in getting coconut or copra from the grower is a great impediment to the societies. Coconut growers in Kerala generally do not depend coconut marketing co-operatives for disposing their produce because of many reasons. Due to this tendency co-operatives do not get enough quantity of coconut or copra either to process them or to supply to the apex bodies. In Kerala, primary level co-operatives are undertaking little or no processing activities. Major coconut processors are the apex bodies such as Kerafed and Marketfed. They have large scale processing units in the state. Kerafed and Marketfed have a widespread network in the state for processing copra by collecting directly from the growers. Majority of these units are not involved in this activity as explained in the previous chapters. So the discussions with the officials of Kerafed reveal that most of the time

they are facing shortage of copra (raw material) in their units*. They say that the affiliating units are not procuring enough copra from the growers. They sometimes stop the production of coconut oil for want of copra. Sometimes the apex bodies depend private parties for getting enough quantity of copra. Even though these PACS and general marketing societies are their affiliating members, the apex bodies cannot compel them to procure copra from growers. Out of the societies which have an objective of coconut marketing in their bye-laws, only less than 10 per cent are undertaking coconut procurement in Kerala.

But the primary marketing societies say that the growers in their locality are not interested to supply their produce to the co-operatives. The society can procure the marketable surplus of the growers only when they brought their produce to the marketing co-operatives. Usually the marketing societies have only one collection centre and the growers of that locality have to bring their material to this place. In Kerala, the coconut is a small holder's crop. The growers residing in the interior places find it difficult to reach the collection centre. Moreover, it is not economical for them to dispose the produce in the co-operatives in this situation.

The marketing agencies are also finding it difficult to reach in the interior places where enough transport facilities are not available.

Since societies cannot do field procurement due to many reasons such as high cost of procurement etc. the farmers in the interior places prefer to sell their marketable surplus to the middlemen, even though they are getting fewer prices for the produce. The survey shows that about 90 to 95 per cent of the societies are not undertaking field procurement. The reasons

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* The expert committee has commented that if a minimum of 120 societies out of the 896 societies registered under Kerafed can be made active procurement and if they supply eight tonnes of copra (one load) per week regularly, it would be possible for Kerafed to utilize at least 50 percent of its capacity and reach break-even point within a short period (Agricultural Prices Board, 1997).

mentioned by the societies for not undertaking field procurement are listed in the table 6.1 given below:

Table 6.1: Reasons for not undertaking field procurement

Sl. No.	Reasons	Mean Score	Rank
1	Inadequate staff	64.96	I
2	Lack of transport facility	44.52	II
3	Farmers supply only raw coconut	41.92	III
4	Lack of fund	36.92	IV
5	Quality cannot be maintained	29.11	V

Note : Maximum possible score is 100
Source: Survey data

In order to rank the reasons furnished by the coconut marketing, the Garett Ranking Technique is used and the results are furnished in Table 6.1.

Inadequate staff is the most important reason attributed by them for non procurement of nuts from the field. Most of the societies say that for procuring coconut from the field one or more staff has to be deputed. But the number of staff to be appointed in a co-operative society will be restricted by the Cooperative Act. So, if any society goes for field procurement they have to re-arrange the existing duties of the staff and this will affect the day to day business of the society. When comparing the revenue acquired by the societies from the coconut procurement, no society will go for this re-arrangement because most of the procuring agents are the PACS, whose main business is banking. Actually these societies were consented for coconut procurement only by compulsion by the government. Most of the societies are undertaking the coconut trade as a temporary adjustment and seasonally. So it is not practical to employ permanent staff for this purpose. Moreover, the staff members of a society may not be experts in the coconut field.

The second major reason attributed by the societies is the lack of transport facilities. The coconut growers in Kerala are scattered and they are having only small holdings. So the marketing societies have to use their own transport facilities for procuring nuts from the remote field, which most of the societies in Kerala is lacking. Taking transport facility on hire for this purpose is not economical for the society. So the society collects only the nuts which are brought by the growers in their collection centres. The third reason is that the growers supply only raw coconut, this will also lead to the non-procurement of nuts from the field, because about 90 per cent of the societies do not have any processing facility for converting raw coconut to copra. The societies which are acting as agents of the apex bodies for the copra procurement collect only the copra and not the coconut, because primary processing of coconut to copra needs time, place, staff etc., which the cooperatives find difficult to arrange. Further, coconut is a small holder's crop; the problems in general could be characterized as non-viable size for processing. Hence, growers like to supply the produce as it is. Since most of the marketing societies do not have these infrastructural facilities they hesitate to procure raw coconut. Because of these reasons the societies do not go for field procurement.

Lack of fund is another reason raised by the society. The next reason pointed out by the society is quality cannot be maintained when the nuts are procured form the field.

The apex bodies and societies say that the non-availability of copra will not become a problem during the conditions where the market price of the coconut falls and subsequent intervention of the government in the market taken place. When the support price exceeds market price, the growers will depend upon co-operatives for disposing their marketable surplus. This can be seen during the year 2000-01. During this time the

problem of marketing societies is that they cannot able to procure the entire quantity supplied by the growers. The quantity of copra coming to the societies will be increased according to the degree of variation between the market price and support price.

During the period of coconut procurement under PSS the co-operative societies have faced many problems in the procurement. The officials of the societies say that most of the time they were forced to reject the produce brought by the coconut growers. The reasons stated by the societies for rejecting the produce are listed in the Table 6.2

Table 6.2: Reasons for the Rejection of Coconut/Copra brought by the farmers

Sl. No.	Reasons	Mean Score	Rank
1	When the apex body stops procurement	63.93	I
2	When the godown is full	47.12	II
3	When the quantity of copra is inferior	41.76	III
4	When there is long queue	38.72	IV

Note: Maximum possible score is 100
Source: Survey data

Table 6.2 shows that the primary marketing societies were compelled to reject the produce brought by the members, when the apex body stops procurement of copra from them. The apex body will not direct the primary societies to stop procurement; instead they will not permit to transport the copra to their warehouses. When the marketing societies cannot shift their collected nuts to the apex bodies' warehouse, their godown will become full and this will result in rejection of produce brought by the member growers. Some societies will make temporary additional arrangements for storing the copra. Sometimes the produce brought by the growers will be inferior in

quality; this will also lead to the rejection of produce. Moreover, both the officials of the society and growers say that, keeping the quality conditions of copra as specified by the apex bodies are very difficult. When there is long queue of growers for disposing the produce, the society cannot procure the entire quantity of copra brought by all the growers.

Coconut marketing co-operative sometimes stops procurement due to many reasons. The table 6.3 shows the reasons listed by the societies for stopping procurement in a year.

Table 6.3: Reasons for stopping coconut procurement in a year

Sl. No.	Reasons	Mean Score	Rank
1	Shortage of storage facility	69.73	I
2	When the apex body fails to lift stock in proper time	63.21	II
3	When there is no procurement under support price	55.66	III
4	Lack of fund	33.11	IV
5	Non-availability of copra	11.12	V

Note: Maximum possible score is 100
Source: Survey data

The survey shows that most of the societies stop procurement in a period when their godown is full or when the private godowns were not available in the locality. Godowns of a society may become full when the apex body fails to lift the collected nuts in proper time, this is another reason pointed out by the most of the societies. Co-operatives may sometimes stop procurement when there is no procurement under price support scheme. This type of societies act as a procuring agent only when they are appointed by the apex bodies as an agent for procuring nuts under price support scheme. Inadequate fund is the last but one reason. This will not pose any problem to most of the societies. The societies which are doing only

agricultural produce marketing face this as a serious problem because they depend on apex body and government financial assistance for the funds. Sometimes enough quantity of copra is not available This also leads to the stoppage of coconut procurement.

Storage

To avail the opportunity of getting maximum price the product will have to be stored until favourable conditions prevail in the market[1]. Coconut production is characterised by relatively large and irregular seasonal and year to year fluctuations, but the consumption is, on the other hand, relatively stable. These conflicting circumstances make it necessary to hold large stocks for considerable periods of time. Additionally, inadequate storage facilities cause losses to the societies resulting in serious wastage. These wastages and losses lead the coconut marketing uneconomical to the marketing societies.

In the absence of proper storage facility, seasonal fluctuations in the price would get aggravated and the strain on the transport system would become too much preventing the orderly movement of goods.

The storage capacity owned by the societies and their actual requirements were explained in detail in the previous chapter. The survey reveals that most of the societies face the problems of shortage of storage facilities. Because of the shortage of storage facilities the coconut marketing co-operatives forced to reject the nuts brought by the member growers and sometimes stop the procurement of copra especially in the period of procurement under price support scheme. The rejection of nuts and stoppage of procurement affects the good relations the society acquired with their grower members. This will at last collapse the coconut marketing activities of the coconut co-operatives. Because the members feel that the strains taken by them for carrying their produce to the marketing co-

operatives is ignored by the societies. All these will aggravate the situation and make serious problems to the coconut co-operatives. Moreover, the storage facilities owned by the co-operatives are of an unscientific nature and the produce cannot be stored for more than six months in most cases.

The table 6.4 given below shows the number of societies stops procurement of nuts because of shortage of storage facilities during the last five years.

Table 6.4: Frequency of Stoppage of procurement due to shortage of storage facilities (1996-97 to 2000-01)

(Number of Coconut Marketing Co-operatives)

Year / Period Of Stoppage	1996-97	1997-98	1998-99	1999-00	2000-01
Always	2(7)	2(7)	1(3)	1(3)	2 (7)
Frequently	2(7)	1(3)	Nil	1(3)	4 (13)
Often	3(10)	3(10)	1(3)	2(7)	3 (10)
Rarely	4(13)	4(13)	8(27)	11(37)	12 (40)
Never	7(23)	7(23)	7(23)	9(30)	9 (30)
No procurement	12(40)	13(44)	13(43)	6(20)	Nil
Total	**30(100)**	**30(100)**	**30(100)**	**30(100)**	**30(100)**

Note: figures in parentheses are percentage to total
Source: Survey data

Table 6.4 reveals that during the period 1996-97, 7% of the marketing co-operatives stop procurement 'always' only because of the shortage of storage facility. During 1996-97, 23% of the societies 'never' stop procurement due to shortage of storage facilities. 40% of the societies 'rarely' stop the procurement of coconut during 2000-2001. So it can be inferred from the study that most of the societies stop procurement of coconut at least for a short period during a year. The stoppage of the procurement of coconut in a

period may differ from society to society according to the size of storage facility each society have.

Since the availability of copra is increasing in the seasons, the requirement of storage facility will also be high during this period. But keeping large area of storage facilities by the coconut marketing cooperative becomes uneconomical, because in the off season the godown will kept idle and thus will not give any return to the co-operatives. Similarly, the storage requirement is high in the period when the co-operatives procure coconut under price support scheme. One could not predict exactly the storage requirement of a society. The survey shows that most of the societies face the problems of shortage of storage facilities and it is very well clear from the table 6.5

Table 6.5: Shortage of storage facilities during 1996 to 2000-01

(Quantity in tonnes)

Year	Kerafed	Marketfed	Both	Total
1996-97	-552 (-30.6)	-75 (-12.5)	+11 (+1.8)	-616 (-20.5)
1997-98	-542 (-30.1)	-65 (-10.8)	+11 (+1.8)	-596 (-19.9)
1998-99	-547 (-30.3)	-40 (-6.6)	+11 (+1.8)	-576 (-19.2)
1999-00	-552 (-30.6)	-15 (-2.5)	-84 (-14.0)	-651 (-21.7)
2000-01	-887 (-49.2)	-15 (-2.5)	-164 (-27.3)	-1066 (-35.5)

Note: figures in parentheses are the average shortage/excess per society
- Shortage
+ Excess

The survey shows that the societies affiliated to Kerafed face severe shortage of storage facilities throughout the year but the rate of shortage was more or less stagnant from 1996- 1997 to 1999-2000. But the situation was aggravated during the year 2000-01 and the average of the additional storage requirement reaches to the level of 49 Tonnes. But this is not the case

of coconut co-operative affiliated to Marketfed. Even though the co-operatives under this category face the shortage of storage facilities the situation is not severe when compared to that of Kerafed societies. Moreover, the requirement shows a declining trend for the marketing co-operatives and it reaches to an average of 3 tonnes during 2000-'01. So it can be inferred that these societies arranged storage facilities to a great extent and the requirement is minimal.

As far as the coconut co-operatives affiliated to both Kerafed and Marketfed are concerned, they are strong enough in the ownership of storage facilities in the initial period. During 1996-97 to 1998-99, these co-operatives show an average of two tonnes of excess storage capacity. But thereafter the storage requirement had been increased and they also face the problem of shortage of storage facility. During 1999-00 the average storage requirement has increased to the level of 14 tonnes per society and it again increased to the level of 27 tonnes. This will occur when there is high pressure from the growers to procure the nuts under price support scheme.

Processing

As discussed in the previous chapter, about 63 per cent of the coconut co-operatives did not undertake any processing activities. They were simply procuring the nuts i.e. copra (coconut after primary processing) from the growers. The primary processing of coconut had been undertaken by about 23 per cent of the societies. These societies will collect both raw nuts and copra from the coconut farmers. The raw coconut collected by these societies are either processed in their own dryers (Smoke kiln) or given to the nearby private parties for processing. The remaining 10 to 14 per cent of the societies only undertake secondary processing.

As far as the coconut co-operatives are concerned, the processing of coconut into copra is a tedious task; it requires fund; men and other

infrastructural facilities. Most of the co-operatives engaged in the coconut marketing in Kerala are not at all interested in the processing of coconut. They were simply acting as agents for collecting the coconut to please their grower members and government. The marketing societies which exclusively engaged in the agricultural produce marketing (both the affiliation societies) are interested in the coconut marketing. They spend time, men and material for this purpose. They are also having permanent facilities for processing coconut into copra and other secondary processing facilities. The primary processing itself requires large area of space for sun drying or mechanical drying. Large area of storage for keeping coconut and copra, permanent facilities for dehusking of raw coconut and removal of coconut husk, and staff are the other constraints faced by the marketing co-operations. Finding suitable market for the processed products also poses problems to the co-operatives

Table 6.6 given below explains the constraints attributed by the coconut co-operations for not undertaking processing activities

Table 6.6: Reasons for not undertaking Coconut processing by the Co-operatives

Sl No.	Reasons	Mean score	Rank
1	Inadequate infrastructural facilities	73.20	I
2	Difficulties in marketing the product	69.36	II
3	High cost of processing	65.12	III
4	Lack of staff	50.14	IV
5	Inadequate fund	45.23	V
6	Non-availability of coconut	22.29	VI

Note: Maximum possible score is 100
Source: Survey data

The societies were asked about the constraints they are facing for not undertaking processing activities. The application of the Garett Ranking Technique showed that the inadequate infrastructural facilities is the major reason. Difficulty in marketing the processed products, especially the products after secondary processing is considered as the second most important reason. Third reason cited by the co-operatives is the high cost of processing. From the practice and experience, the co-operatives were assured that the cost of processing coconut will be high for them when compared to private parties. They say that the high cost of processing will lead to increase the cost of finished product and it will become difficult to market the finished product at reasonable price. The labour cost and other incidental charges will usually be high when coconut is processed in the institution like co-operatives. But it is observed from the survey that some of the sample co-operatives (say less than 10 per cent) are undertaking the secondary processing of coconut and found good market. They are also able to compete with private parties in the market. Insufficient staff and fund are the other reasons attributed by the co-operatives. Non-availability of coconut is the last reason pointed out by the co-operatives. But at the same time they say that it would not be a problem if the societies were ready to procure coconut regularly at reasonable price.

Marketing

Marketing practices of Coconut Co-operatives were discussed in the previous chapter. In Kerala, less than 10 per cent of the marketing co-operatives are undertaking direct marketing of coconut and coconut products. Most of the societies like to act as an agent of the apex bodies instead of independent procurement centres.

The coconut marketing co-operatives are facing various problems while marketing the coconut products produced by them and when supplying the procured coconut to the apex bodies[2].

The marketing problems of the primary coconut marketing co-operatives are:

i) High marketing cost

ii) Competition form private traders

iii) Lack of government support etc.,

The objective of the marketing society is not to eliminate profits as such but to direct the profit from the owners to the members. This in effect provides growers with marketing services at the least cost. The greater opportunity for co-operatives is in the field of reducing costs. But the question is how to reduce the costs. They have to pay salaries to employees and maintain offices and godowns etc. Moreover, co-operative will have to incur the same amount of money as non co-operative institutions in performing similar functions. For instance, labour, which is the highest constituent of marketing cost, cannot be availed by a society unless paid at least at an equal rate as that paid by the private party. Besides, marketing societies are deprived of some benefits, which private parties get in business. Private parties do not keep proper accounts of transaction making a lot of tax evasion, thus adding to profits. But co-operative marketing societies cannot do it. Since all the activities of coconut marketing - from procurement to sale - are undertaken at the institutional level, the costs involved in each activity will be high, especially the labour cost. The efficiency of the staff will be very low when compared to private processors. All these cause to increase the cost of finished product and ultimately co-operatives unable to find market for their products. Private traders are

carrying malpractices and adulteration in the finished product to increase the profit margin, which co-operatives cannot do.

The government support to this coconut processing co-operatives is insufficient. Financial and other administrative supports are essentially required for the marketing societies to exist in the market.

Difficulties in the procurement of copra under Price Support Scheme(PSS)

The primary coconut marketing co-operatives in the state are procuring coconut not only for their affiliated apex bodies but also for the Nafed under PSS. These societies face various problems from the apex bodies while undertaking this activity. During the price support scheme operation, the co-operatives often stopped procurement of copra and sometimes rejected the coconut brought by the farmers due to many reasons.

Quality condition[3]*:* The quality conditions prescribed for copra by Nafed, which was explained in the previous chapter is very difficult to adhere. The copra brought by the growers very rarely meet the quality prescribed by Nafed, because the small growers use sun drying or local dryers (cheku) for drying copra, which is not scientific. Copra brought by farmers are either less dried or over dried, both the case the Nafed refuses to take delivery of goods from the co-operatives and then they are compelled to reject the produce brought by them. The farmers also say that in order to meet this quality the copra should be dried in 7 to 8 days, which will not be economical for them. They used to dry only 3 to 4 days for disposing the copra in the local private market. Frequent rejections of nuts by the co-operatives adversely affect the relationship with the coconut farmers.

From whom stock to be procured: Nafed, through its apex bodies direct the primary co-operatives to procure nuts only from growers[4].

But the societies say that it is very difficult to identify whether the individual who brought the produce is a farmer or not. A coconut farmer can also arrange the produce from the market and bring into the co-operatives. Co-operatives have no facility to identify the genuineness of the nuts. Moreover, coconut is a small holder's crop in Kerala. They used to dispose their yield to the local buyers and he is making this pooled coconut into copra. Then these local buyers bring copra to the society, and grab the advantages of MSP but he gives only the prevailing market price to the growers. If he can pass the advantage of MSP to the growers, then it will become a good practice, to collect coconut locally and bring into the society. But in normal practice no local trader will give the advantage of MSP to the small farmers. Later Kerala government have issued an order to the co-operatives to collect the copra only from growers who produce certificate from the agricultural officer, but it again aggravated the situation, because the small growers have no time and patience to collect the certificate from the officials.

Packing: The apex body also gives directions to the co-operatives regarding packing of the nuts. These conditions are also very difficult to adhere for the societies.

Storage of gunny bags: the society shall arrange safe storage of gunny bags so supplied by Federation or NAFED at the procurement centre and shall render proper account of the same[5]. The society shall not be entitled to storage charges for the safe storage of gunnies. It is observed from the study that the Nafed or state federations could not arrange the empty gunnies as specified in the instructions. The officials of the apex bodies and warehouses behave very badly while inspecting the stencil and code number written on

the gunny bags. They sometimes simply refuse to take the stock, arguing that the stencil and code number are not clear or wrong.

Delivery of stock[6]: Delivery of stocks to the apex bodies' warehouse creates greater problem to the coconut co-operatives. The instructions for delivery stock show that:

Stock at Procurement Centre:

The society shall be responsible for the safety of the stock of copra at the purchase centre upto the point of deposit of the same in the (Central Warehousing Corporation and State Warehousing Corporation) CWC/SWC Warehouses[7]. On depositing the copra with the SWC/CWC the society shall obtain warehouse receipts with specific remarks of having deposited copra of (Fair Average Quality) FAQ and moisture less than 6%.Unloading charges and incidental expenses at warehouses shall be met by Nafed.

The survey shows that the societies keep the procured copra for a long time and sometimes the transported copra are rejected by the apex bodies.

The number of days the coconut co-operatives keep the procured coconut is given in Table 6.7

Table 6.7: Length of Time the Coconut Procured the Co-operatives kept in the Godown

(No. of Societies in %)

No. of days	Kerafed	Marketfed	Both	Total
Less than 15 days	28	17	50	30
15 - 30 days	39	50	17	37
More than a month	33	17	33	30
More than two months	Nil	17	0	3
Total	100	100	100	100

Source: survey data

The survey shows that about 30 per cent of the coconut co-operatives keep the procured copra in their godown in less than 15 days. It is also observed that in normal condition the apex bodies take more than one week to give instructions to the co-operatives to transfer the collected nuts to the warehouse. The apex bodies usually arrange godowns in different parts of the state. After getting consent from the regional office the coconut co-operatives send the product to the warehouse allotted by the apex bodies. About 50 per cent of the societies affiliated to both the societies are getting the advantage of taking quick delivery of goods by the apex bodies. 28 per cent of the Kerafed societies and 17 per cent of the market fed societies enjoy this advantage. About 67 per cent of the societies have to keep the procured nuts from 15 days to more than one month. Keeping of copra in the godown for long time creates many problems to the societies. This leads the deterioration of the quality of copra due to pest attack and fungus then it again required to dry the copra after cleaning. All these give additional burden to the societies. More than 50 per cent of the societies affiliated to different categories are facing this problem. The study also shows that one society from Marketfed has waited more than two months for lifting stock from their godown.

Moreover, after a long wait for getting permission from the apex body to lift the stock, the coconut co-operatives come across the problem in the warehouse. Co-operatives have to wait long time for getting the stock unloaded. The table 6.8 gives the length of time waited by the coconut co-operatives for unloading stock at warehouse.

Table 6.8: Length of Time Waited by the Coconut Co-operatives to Unload the Stock *(No. of Societies in %)*

No. of days	Kerafed	Marketfed	Both	Total
Same day	Nil	17	Nil	3
Within two days	28	50	67	40
2 - 4 days	67	33	33	54
More than 4 days	5	Nil	Nil	3
Total	100	100	100	100

Source: Survey data

Table 6.8 shows that only 3 per cent of the total co-operatives get the stock unloaded immediately from the warehouse. 40 per cent of the co-operatives required to wait two days to unload the stock, and more than 50 per cent of the societies waited 2 to 4 days for getting the stock unloaded. Waiting in the warehouses for unloading the stock leads to demand more hire charges. Sometimes the co-operatives have to give double of the hire charges. This will also increase the burden of procurement cost to the coconut co-operatives. Moreover, the staffs of the co-operatives have to stand there to protect the copra load. 67 per cent of the Kerafed affiliating societies and 33 per cent of Marketfed affiliating societies and both the affiliating societies waited 2 to 4 days for unloading copra in the warehouse. Because of this bitter experience from the apex bodies, the co-operatives which acted as agent of the apex bodies say that they would never undertake the procurement activities in future.

Again, after waiting for long time for unloading the stock, officials of the warehouse sometimes reject the produce brought by the coconut co-operatives. This creates further problems to the coconut co-operatives. Frequency of rejection of copra load by the apex bodies warehouse are depicted in the table 6.9 given below:

Table 6.9: Frequency of rejection of Copra Load by the Apex bodies *(in %)*

No. of times	Kerafed	Marketfed	Both	Total
Less than times	17	Nil	17	13
2 - 4 times	56	33	50	50
4 to 6 times	22	33	17	24
More than 6 times	5	33	17	13
Total	100	100	100	100

Source: Survey data

Rejection of copra load from the warehouse makes great loss to the co-operatives. Almost all the co-operatives have experienced this situation; Table 6.9 shows that the copra loads of about 13 per cent of the societies have rejected at least once. Copra load of about 50 per cent of the societies have rejected 2 to 4 times and about 24 per cent of the societies' load have rejected 4 to 6 times. The societies affiliated to Marketfed have experienced most number of rejections of copra load. 33 per cent of this category answered that their copra loads have rejected more than six times.

The societies have suffered great loss due to rejection of copra load from the warehouse. Reasons mentioned by the warehouse officials for the rejection of load vary from one load to another. Some of the reasons pointed out by the societies are high moisture content, rubbery copra, pests, fungus, over dry, etc. One of the societies' copra loads was rejected for improper stencil and mark on the gunny bags. The coconut co-operatives say that, the reasons raised by the warehouse officials are not genuine. They are simply rejecting accommodation of the copra stock for some other co-operatives which have influence over the warehouse officials and ready to pay bribe to them. Usually these loads will be of the traders and other middle men who

arrange copra on the secret adjustments with the management of the co-operatives.

Coconut co-operatives also say that the quality testing of copra by the officials is not satisfactory. They can generate the results as they wish by administering the quality control test in the warehouse. The opinion of the coconut co-operatives about the quality control testing of the officials of warehouse is given in Table 6.10.

Table 6.10: Opinion of the Coconut Co-operatives towards the Quality Control Testing Procedure of Warehouse Officials *(in %)*

Satisfactory level	Kerafed	Marketfed	Both	Total
Fully satisfied	Nil	Nil	Nil	Nil
To a great extent	12	Nil	17	10
To some extent	44	13	33	40
Not at all satisfied	44	67	50	50
Total	100	100	100	100

Source: Survey data

The survey shows that 50 per cent of the societies are not at all satisfied with the quality testing of copra of the warehouse officials and 40 per cent of the societies satisfied to some extent and only 10 per cent of the societies are satisfied to a great extent. No societies have been satisfied fully to the quality testing of the SWC/CWC officials. All these figures show that the officials of the warehouse are finding one or other reasons for rejecting the produce brought by the coconut co-operatives.

Payment: Regarding the payment the coconut co-operatives also face difficulties from the apex bodies and Nafed. The directions of the Nafed towards the payment of the produce says that, on getting Warehouse

receipts and sale bill from the society Federation shall issue declaration in form No.25 and effect payment within 7 working days[8].

But the societies say that the apex bodies never met the conditions of payment laid down by them. The societies have to wait long time to get the payment from the apex bodies but at the same time the societies have to make immediate payment to the coconut farmers. The co-operatives who are doing banking business find no difficulties for making payment to the farmers. But the general marketing agencies find very difficult to adjust fund for the payment to farmers. They sometimes stop the procurement due to the shortage of funds. Then the small scale growers hesitate to dispose their produce to these types of co-operatives instead they dispose it to the middle man by suffering loss. Time taken by the apex bodies to release the fund is depicted in Table 6.11

Table 6.11: Time taken by the Apex Bodies for Releasing the Fund to the Coconut Co-operatives *(in %)*

Period	Kerafed	Marketfed	Both	Total
Within a week	Nil	Nil	Nil	Nil
Within two weeks	28	Nil	50	27
Within four weeks	50	33	33	43
More than four weeks	22	67	17	30
Total	100	100	100	100

Source: Survey data

Table 6.11 shows that no society is getting funds within a week, as mentioned in the directions of Nafed. Only 27 per cent of the societies get fund within two weeks. 28 per cent of the Kerafed societies and 50 per cent of the societies affiliated to both the apex bodies are getting fund within this period. 43 per cent of the societies have to wait four weeks for getting fund,

50 per cent of the Kerafed societies and 33 per cent each from the Marketfed and both the apex bodies' societies say that they have waited four weeks to get the fund from the apex bodies. 30 per cent of the societies waited more than a month for the payment. It is observed from the study that the societies affiliated to Marketfed have waited long time for the payment of produce from apex bodies.

Moreover, the service charge, transportation charge, cost of gunny bags, etc., fixed by the apex bodies are insufficient to meet these expenses. Meeting all these expenses and other unforeseen incidental expenses make the coconut co-operatives the procurement of coconut for apex bodies at great loss. Only very few societies make profit from the coconut procurement under PSS out of their influence and efficiency.

To conclude that the copra procurement under PSS create lot of problems and difficulties to the coconut co-operatives. This service doesn't give any economical benefit to the co-operatives. Even though, the coconut co-operatives are undertaking the procurement of copra for apex bodies only to promote the co-operative principle of self help and co-operation. It gives benefit to the growers very rarely.

Section II

COCONUT GROWER MEMBERS - Profile, Problems and Attitude

This section deals with the problems of member growers who depend the co-operative societies and supplied coconut to them. The problems faced by the coconut growers in general are not taken into consideration. In order to understand the coconut marketing societies from the growers' point of view, a profile of the coconut growers who are members of the societies and also supply coconut to them were collected during the survey by using the schedule given in the Appendix II. A brief picture of the relevant data regarding the coconut grower members are presenting here for analysis

before giving their problems. The attitude of growers towards societies will also be given in the last part of this chapter.

A. COCONUT GROWER MEMBERS - A PROFILE

During the survey, it is noticed that there are only very limited number of growers in the state taking the benefit of co-operative sector for disposing their marketable surplus of coconut. While taking 100 growers, hardly five of them may give their produce to the co-operatives because of many reasons. Since the study is confined to the role of co-operatives in the marketing of coconut in Kerala, here the growers who are the members and supply coconut to the societies will only be taken as sample as specified in the introduction. Brief profile of the grower members, which is required for the present study is only, be given in this section. The marketing methods and behaviour of grower members differ from region to region and hence a region wise study has been made instead of affiliation.

Coconut Holdings:

As explained in the introduction the coconut growers in Kerala have only small holdings. The coconut holdings of the sample coconut grower members are given in the Table 6.12.

Table 6.12: Land Holdings of Coconut grower members - Region-wise distribution.

	Size group (ha)	South	Central	North	Total
Small farmer	Upto 0.5	48 (32)	21 (14)	25 (17)	94 (20)
	0.5 to 1.0	65 (43)	79 (53)	50 (33)	194 (43)
	1.0 to 1.5	27 (18)	30 (20)	23 (15)	80 (18)
Total		***140 (93)***	***130 (87)***	***98 (65)***	***368 (82)***
Larger farmer	1.5 to 2.0	3 (2)	15 (10)	21 (14)	39 (9)
	Above 2	7 (5)	5 (3)	31 (21)	43 (10)
Total		***10 (7)***	***20 (13)***	*52 (35)*	***82 (18)***
Grand total (all groups)		**150 (100)**	**150 (100)**	**150 (100)**	**450 (100)**

Note: Figures within parentheses denotes percentage to Grand total.
Source: Survey data.

Table 6.12 shows that 82 per cent of the coconut growers hold only less than 1.5 hectors of land and only 18 per cent of the growers hold more than 1.5 hectors. The coconut growers of northern region holds the highest coconut holding (35% have more than 1.5hacters of land) and southern region hold the least coconut field, only 7% of the growers hold more than 1.5hacters of land. 13 per cent of the growers of central region hold more than 1.5hacters of land. But the state average of coconut holding is far less than the sample data. In the state, hardly 6% of the holdings come in 1-2 ha size group and 91.5% have only less than 1 ha[9]. So it shows that the coconut growers who have large land holding only depend upon the co-op marketing agencies for selling their marketable surplus.

Basic cultivation details

Details about the area of production and the productivity of coconut in the sample area are furnished in Table 6.13. The average productivity of small growers is found to be nearly one and half of the state average at about 9505 nuts/ha. The slight decline in the productivity of the large growers could be attributed to their reduced planting densities as mentioned elsewhere. The sample average productivity is thus only a little higher than the state average at 6847 nuts/ha. (During 2000-01)[10]. Similarly, the productivity in terms of nuts/palm/year seems to be higher for small growers at 72 nuts/palm/year compared to that of large growers at 63 nuts/palm/year. The sample average productivity worked out to be 67 nuts/palms. On an average, all the growers irrespective of their holding size resorted to 6-7 harvests/year.

Table 6.13: Area, Production and Productivity of Coconut in the Sample - Size Group-wise

	Size group (ha)	Area (ha)	No. of yielding palms	Annual production (nuts)	Annual productivity (nuts/ha)	Annual productivity (nuts/palm)	Average No. of harvest /year
Small farmer	0.5	47 (7)	6385(8.5)	492820	10486	78	7.1
	0.5 to 1.0	194 (28)	26130 (34.2)	1800400	9281	69	6.94
	1.0 to 1.5	120 (17)	15465 (20.2)	1049720	8748	68	6.45
Total		*361 (52)*	*47980 (62.9)*	*3342940*	*28515*	72	*6.8*
Large farmer	1.5 to 2.0	78 (11)	67.29 (8.8)	429980	5513	64	6.25
	Above 2	258 (37)	21598 (28.3)	1308242	5071	61	6
Total		*336 (48)*	*28327 (37.1)*	*1738222*	*10584*	*62.5*	*6.12*
Grand Total		**697 (100**	**76307 (100)**	**5081162 (100**	**7290**	**67**	**6.55**

Note: Figures within parentheses denotes percentage to Grand total.
Source: Survey data.

Marketing methods in coconut

Coconut is a perennial crop and it also has a vegetative period of four to six years depending on the variety cultivated during which time the grower is left without any gainful returns. After the vegetative period, the crop provides the growers with a regular income for a period of 40 to 50 years or sometimes even more. The number of harvest per year vary from seven to eleven in various parts of the state depending upon the agro-climatic conditions and the management practices.

The growers would normally engage one or more climbers for harvest depending on the size of their farm and also labourers to gather them. Both the climbers and gatherers are paid in cash, in kind, or both in cash and in kind in accordance with the practices prevailing in different areas of the State. Payment in kind denotes giving away of nuts to the climbers and gatherers. The number of nuts given away as wages for the climbing and gathering formed only an insignificant part of the harvest (See Table 6.14)

Table 6.14: Utilisation Pattern on Nuts Produced - Size Group wise

(No. of nuts)

	Size group (ha)	Annual production (nuts)	Nuts used for other purpose +	Annual consumption	Monthly consumption/ household	Marketed surplus
	(1)	(2)	(3)	(4)	(5)	(6)
Small farmer	0.5	492820	35483(7.2)	24920 (5.05)	22.09	432417 87.74)
	0.5 to 1.0	1800400	122427(6.8)	49248 (2.73)	21.15	1628725(90.46)
	1.0 to 1.5	1049720	69282 (6.6)	24260 (2.31)	25.27	956178(91.08)
Large farmer	1.5 to 2.0	429980	37838 (8.8)	9892 (2.30)	21.13	382250(88.89)
	Above 2	1308242	100735 (7.7)	11740 (0.89)	22.75	1195767(91.40)
Total		**5081162 (100)**	**365765 (7.2)**	**120060 (2.36)**	**22.23**	**4595337(90.44)**

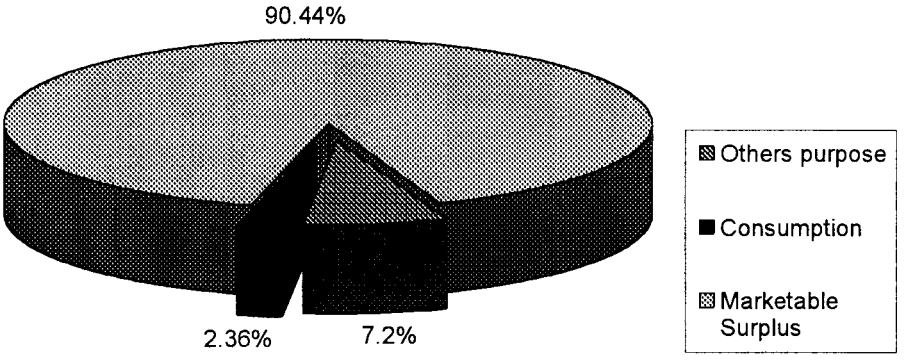
Note: Figures within parentheses denotes percentage to total.

+ Nuts given to climbers, assemblers etc,

Source: Survey data

An analysis of the utilization pattern of nuts showed that the nuts given towards climbing, harvesting and assembling formed only 7.2% of the total nuts harvested. The same figure is found to be proportionally lower (6.8%) and higher (7.97%) for small and large growers respectively. Likewise, a part of the production is kept aside for home consumption but this is also found to form only a very small part of the total harvest (2.36%). On an average, the monthly consumption of nuts per household worked out to be around (22.23) nuts for the entire sample. It is slightly higher for small growers (22.84 nuts/month) and lower for larger growers (21.94 nuts/month). Thus it can be said that nearly 90% of the nuts harvested is available for marketing. The marketable surplus for the large growers and small growers are 90.78 and 90.25 per cent of the total number of nuts harvested. For the entire sample, it is 90.44 per cent of the total. Figure 6.1 shows the utilisation pattern of coconut for the entire sample

Figure 6.1 Utilisation Pattern of Nuts Produced (for the entire sample)



Most of the growers do not resort to any processing activity after harvesting. It can be seen from the Figure 6.1 that about 62 per cent of the growers sell as coconut itself. Most of the growers from southern region prefer to sell their produce as raw coconut (77%). The percentage of growers selling raw coconut for central and northern region is 59 per cent and 50 per cent respectively. This figure includes the growers who sell coconuts with husk and those without husk. The later type of selling is noticed mostly in parts of central region where the buyers got the nuts husked by engaging their own labourers. Only about 36.5 per cent of the growers are found to undertake certain processing activities. This includes growers who sell as both milling and ball copra (36.5%) and coconut oil (1%). A detailed analysis of the pattern of coconut selling is given in Table 6.15.

Table 6.15: Pattern of Selling Coconuts - Region wise Analysis

(No. of respondents selling)

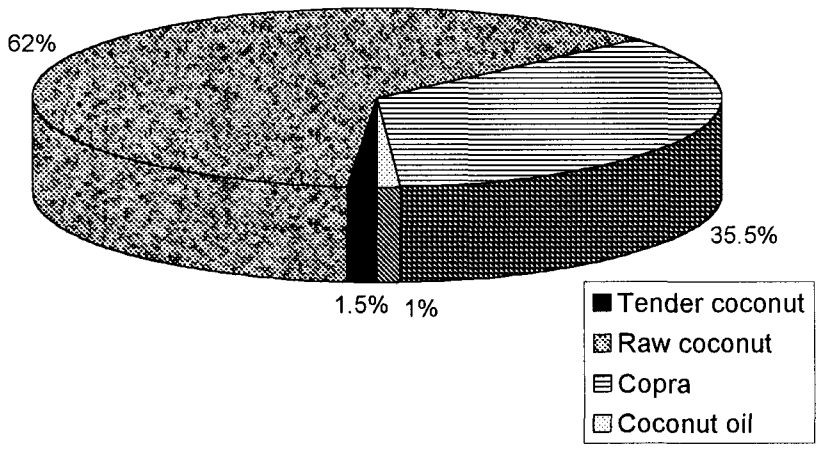
Patter of selling	South	Central	North	Total
Tender coconut	3 (2)	Nil	4 (3)	7 (1.5)
Raw coconut	115 (77)	89 (59)	75 (50)	279 (62)
Copra	32 (21)	57 (38)	71 (47)	160 (35.5)
Coconut oil	Nil	4 (3)	Nil	4 (1)
Total	**150 (100)**	**150 (100)**	**150 (100)**	**450 (100)**

Note: Figures within parentheses denotes percentage to total.

Source: Survey data

Table 6.15 shows that the growers of northern region are undertaking primary processing of coconut into copra in large scale. It comes about 47 per cent of the growers of northern region. The same for the south and central region are only 21 per cent and 38 per cent respectively. Raw coconut selling by the growers is the practice of selling prevailed in the state, and it will be coming about 80 to 85 per cent of the total selling. But here the study reveals that more than 35 per cent of the growers are selling the coconut as copra because samples selected are the growers who supplied coconut to the co-operatives and most of the marketing co-operative procure only copra instead of coconut (See Fig. 6.2). So the growers are compelled to convert coconut into copra to dispose it in the marketing agencies to get the advantage of minimum support price.

Fig. 6.2: Pattern of Selling Coconut



In a disaggregated analysis, it is found that very few of the large growers sell coconut as milling copra and most of them sell it as ball copra. About 4 per cent of them sold as coconut oil after getting their copra milled in oil mills, they belong to central region. A majority of the small growers, sell coconut as unhusked, and very few are selling husked coconuts. The

percentage of small growers selling copra is also very less in number because their marketable surplus is not economically worthwhile to convert into copra.

Sale of nuts at the farm gate seemed to be the usual and comparatively easy way of marketing among growers. About 80 per cent of growers choose to go in for on-farm sales while only about 20 per cent resorted to off-farms sales. Off-farm sales denoted sales at the oil mill, direct sales at the market, selling to the commission agent at his place or selling at the co-operative societies. The tendency of on-farm sales is seen to be high among the small growers (82.6%) as compared to larger growers (68.3%). The details are given in Table 6.16

Table 6.16: Place of sales of coconut –size group wise

Size group	On-farm Sales				%	Off-farm Sales				%
	North	Central	South	Total		North	Central	South	Total	
Small	76(77.5)	109(83.85)	119 (85)	304(82.60)	82.78	22 (22.5)	21 (16.2)	21 (15)	64(17.4)	17.22
Large	36(69.2)	14 (70)	6(60)	56(68.3)	50.06	16(30.8)	6(30)	4(40)	26 (31.7)	49.94
Total	112(75)	123(82)	125(83.3)	360 (80)		38(25)	27(18)	25 (16.7)	90 (20)	

Note: Figures within parentheses denotes percentage to total.
Source: Survey data

The small growers of southern region are more resorted to on-farm sales (83.3%) as compared to central region (82%) and northern region (75%). But the preference of large growers to on-farm sales in the southern region is less (60%) when compared to central (70 %) and northern region (69.2%).

In order to rank the reasons furnished by the growers for on-farm sales instead of opting for off-farm sales, the Garett Ranking Technique is used and the result are furnished in Table 6.17

Table 6.17: Reasons to sell coconuts at farm-gate itself

Sl. No	Reasons	Mean Score	Ranking
1.	Convenience	64.96	I
2.	High labour cost in Transportation	44.52	II
3.	Absence of Proper Market	41.92	III
4.	Better Price	36.92	IV

Note: Maximum possible score is 100

Convenience is the most important reason attributed by them for on-farm sales. It may be recalled that most of the coconut growers are well educated and hence have engaged in other jobs besides coconut farming and as such they have little time left to undertake either any processing activity or to take it to the market or anywhere else for sale. Hence, it is convenient for them to dispose the produce in the farm itself, which for them is a time saving alternative. The second major reason attributed is the high labour cost involved in loading the nuts in vehicles, unloading them at the selling place, transportation etc. As these kinds of charges are not involved in on-farm sales where the buyer himself carried out such activities, the growers preferred it rather than off-farm sales. Absence of an organized market like a regulated market is the third important reason. There are no regulated markets for any agricultural produce in Kerala. This drawback deprived the growers of a place where they are free from the clutches of middlemen and of a utility that earned them a higher share of the consumer's rupee. Better price realization is the least important reason expressed by the producers for on-farm sales. Thus it is noticed that convenience, high transporting costs, absence of proper markets and better price realization are the important reasons for more growers adopting on-farm sales.

Marketing channels

The distribution of growers according to the type of buyers to whom they had sold the product is presented in Table 6.18.

Table 6.18: Percentage of Coconut Sold Through Different Marketing Channels *(No. of Respondents)*

% of coconut sold	Marketing channels				
	Co.op marketing society	Pvt. Vendor	Oil mill	Own factory	Household
Not selling and quantity	Nil	Nil	400 (89)	427 (95)	438 (97.3)
Upto 25	241 (54)	16 (4)	27 (6)	17 (3.5)	12 (2.7)
25 to 50	209 (46)	45 (10)	7 (2)	3 (0.7)	Nil
50 to 75	Nil	105 (23)	16 (3)	2 (0.5)	Nil
75 to 100	Nil	284 (63)	Nil	1 (0.3)	Nil
Total	450 (100)	450 (100)	450 (100)	450 (100)	450 (100)

Note: Figures within parentheses denotes percentage to total.
Source: Survey data

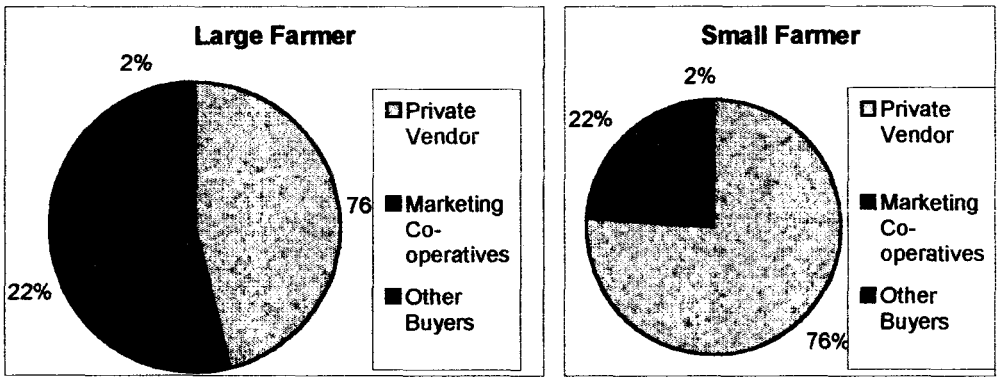
It can be noticed that a majority of growers sell as raw coconuts to private firms. Even though the growers selected as sample are the growers who supplied coconut to the coconut marketing co-operatives; no grower sells their entire produce to the marketing co-operatives. 54% of the growers sell only less than 25% of their produce to the co-operatives and the rest sells out their produce through other marketing channels. 46% of growers dispose 25 to 50% of their produce to the co-operatives. All this figures indicate that the co-operatives can never become the effective buyer of the coconut. It is also noticed from the survey that the dependence of growers to cooperatives is only because of the sharp fall in the market price of the coconut and there is procurement of coconut under MSP by the co-operatives during the survey period. It is also observed from the study that the grower who supplies coconut to the co-operatives during the crisis never depends on the cooperatives when the market price rises to an optimum level. Most of them say that they supplying their produce to the co-operatives only for getting the advantage of MSP. They also face several problems while disposing of coconut to the co-operatives, which are mentioned in the coming part of this chapter. So the figures show that the co-operative sector can never control the coconut market of Kerala.

It can also be noticed from the Table that 63 per cent of the growers sell their entire marketable surplus to private firms while 23 per cent sell their 50-75% of their produce to the private firms. All the growers under the area of the study depend on the private vendors for disposing their produce. 10 per cent of the growers sell 25-50% of their produce to the private vendors. So the influence of the private vendors on the coconut market of Kerala is very high. Even at the time of a falling market price, though the governmental support price exists, the growers still depend on the private vendors by sacrificing the additional revenue. The private individual firms collect the coconut from small size growers and they convert them into copra and given to the coconut cooperatives.

The percentage of the sale of coconut to other channels like house hold, coconut oil mill owners, use in self owned oil mill etc. are very nominal. About 95% of the growers never depend on this type of marketing channels for disposing their produce. 8 per cent, 5 per cent and 3 per cent of the growers respectively of 25 - 75% category only dispose their marketable surplus to the above channels.

The survey also reveals that the percentage of dependence of coconut growers to the coconut marketing co-operative societies for disposing their produce are more or less equal in different regions of the state. The analysis made on the basis of size of holdings (Table 6.19) reveals that, while about 76% of the small growers preferred private vendors as their buyers, only 46% of large growers sell to private vendors. Further only 22% of small growers sell to coconut marketing cooperatives as compared to 45% of large growers. Nearly 9 per cent of large growers sell to other buyers but it is only 2 per cent in the case of small growers. It can be seen that the co-operative societies are only the second major buyer of coconut. Other buyers, which include the oil millers, house holds etc, are the last choice of the coconut growers (Figure 6.3).

Fig. 6.3 : Source of sale of coconut (size group wise)



Thus the private vendor, who purchases nuts from the grower and convert them to copra, is the most predominant buyer of coconuts from the grower. The region wise analysis shows that 70 to 76% of the small growers of each region prefer private vendors as their buyers and only 20 to 24% prefers coconut-marketing co-operatives. The distribution of small growers among the group is more or less uniform. Among the large grower groups with in the region, 60% of southern region prefer co-operative societies as their buyer but that of central and northern region, this amounts to 45% and 42% respectively. The dependence of private vendor as their buyer is more or less equal (40-42%) among regions. The reasons for over dependence on co-operative sector by the large growers, as compared to that of small growers are that the marketable surplus of large growers will be large in quantity and economical when converted into copra or brought to co-operatives.

Table 6.19: Source of Sale of Coconut (Size group wise)

Sl. No.	Size group of Farmers	No. of respondents selling coconut (in %) to:			
		Private vendor	Marketing societies	Other groups	Total
1.	Small	76	22	2	100
2.	Large	46	45	9	100

Source: Survey data

The growers were asked about the criteria adopted for choosing the buyer for the coconut and their consequent arguments are listed in Table 10.20 given below

Table 6.20: Criteria adopted by growers in the Choice of Buyers

Sl. No.	Criteria	Mean score	Rank
1.	Better price	63.69	I
2.	Field procurement	58.21	II
3.	Procurement of raw coconut	52.33	III
4.	Regular payment	47.89	IV
5.	Regular market	45.66	V
6.	Less labour cost	41.23	VI
7.	Fair practice	38.11	VII

Note: Maximum possible score is 100
Source: Survey data

The application of the Garett ranking technique showed that better price is the most important criterion for choosing the buyers. Field procurement of the buyer is considered as the second most important criterion, because small and large growers have no time and money to bring the produce to the buyers' premises. Procurement of raw coconut is the third criterion adopted by the growers in choosing the buyer. Since the yields of growers are small in quantity, it is not economical for them to convert into copra, especially for small growers. Another important criterion is the regular payment. Every grower needs ready cash for their produce especially the small growers who are very poor and depend on these returns from coconut as their livelihood. Regular market and less labour costs are the next important criterion ranked by the growers. Usually every coconut grower has a permanent party as their buyer and the growers keep a personnel relation and contact with them. So this convenience will also

influence while choosing the buyer. Fair practice is one of the last but not the least problem mentioned by the growers. The grower expressed their lack of faith in those buyers who always try to complain about the lack of oil content or increased moisture content in the nuts so as to find justification to bring down the prices.

The study also examined the reasons for preferring private vendors as the buyers by most of the coconut growers, especially under a situation where the disparities between the market price and support price becomes wide. The growers should supply their produce to the co-operative societies to grab the advantage of MSP, but it is found that about 76 per cent of the small growers and 46 per cent of the large growers depends on the private vendors as their buyers.

Then the growers are asked about the reasons for choosing the private vendor as their buyer and it is presented in Table 6.21

Table 6.21: Reasons for preferring a buyer for the produce

Sl. No.	Reasons	Mean score	Rank
1.	Field procurement	69.78	I
2.	Society stops procurement operation or rejects the produce	64.26	II
3.	Taking raw coconut	61.33	III
4.	Regular payment	54.21	IV
5.	Regular market	49.24	V
6.	Dissatisfaction in societies formalities	31.79	VI

Note: Maximum possible score is 100
Source: Survey data

The rankings made by the growers showed that the field procurement undertaken by the private vendors is the most important reasons for preferring private vendor; since coconut is a smallholders crop in Kerala, it

is not economical and impractical to bring the produce into the coconut marketing cooperatives as mentioned earlier. The second reason pointed out by the growers for preferring private vendors is that the procurement operation of the cooperatives are irregular in Kerala and no co-operatives assures the procurement of the produce brought by a grower. Most of the growers experienced the rejection of their produce by the societies citing baseless arguments. So under this situation small growers will not take the risk. The third reason is that the private vendors are always taking the raw coconut from the growers but most of the co-operatives procure only copra and that too only following the strict quality conditions prescribed by the apex bodies. The next important reason is the regular payment which the growers can expect only from the private vendors. Sometimes, growers during their financial crisis may borrow money from the private vendors and this amount will be adjusted by selling the next harvest to the private vendors. The fifth reasons mentioned by the growers are the regular market which is also assured only by the private vendors. There is no restriction with regard to time and jurisdiction in case of private vendors. Due to several official formalities that should have to be followed by the growers while supplying coconut to the co-operatives, the growers prefer private vendors as their main buyer of coconut.

Rate of allowances taken by the buyers

Most of the buyers of coconut are always tried to impress upon the growers about the lack of oil contents or increased moisture content in their nuts so as to bring down the prices or takes 2 to 10 nuts per 100 nuts towards trade allowances. They also make some sort of arbitrary deduction on agreed rate on the pretext of under sized and immature nuts. Table 6.22 presents the rate of allowances taken by the cooperatives and other buyers including private vendors.

Table 6.22: Rate of allowances taken by different buyers (Region-wise)

(No. of nuts/100 or Kg/ton)

Rate of units	South		Central		North		Total	
	Co-ops.	Others	Co-ops.	Others	Co-ops.	Others	Co-ops.	Others
Nil	4(3)	130(87)	Nil	Nil	9(6)	30(20)	13(3)	160(36)
Less than 4	75(50)	20(13)	58(39)	56(37)	12(8)	115(77)	145(32)	191(42)
4 to 8	66(44)	Nil	78(52)	85(57)	101(68)	3(2)	245(54)	88(20)
More than 8	5(3)	Nil	14(9)	9(6)	28(18)	2(1)	47(11)	11(2)
Total	150(100)	150(100)	150(100)	150(100)	150(100)	150(100)	450(100)	450(100)

Note: Figures within parentheses denotes percentage within buyers.
Source: Survey data.

For the purpose of comparison buyers are catagorised as cooperatives and others. Other category mainly includes private vendors. Table shows that both the type of buyers takes allowances for high water content, defective nuts etc, but the quantity taken by the cooperatives are higher than the quantity taken by the private vendors. 11 per cent of the growers say that the co-operatives take more than 8 nuts for every 100 nuts procured, but only 2 per cent of the growers say that the private vendors take more than 8 nuts per 100 nuts taken. About 54% of the growers indicate that the co-operatives take 4 to 8 nuts as allowances; private vendors, according to 20% of the growers interviewed, also take the same. 42% of the growers say that private vendors takes less than 4 nuts as allowances but only 32% answered that the cooperatives take less than 4 nuts. Similarly 36% of the growers say that private vendors never take coconut as allowances while buying nuts, but only 6% of the growers admit the same with regard to co-operative. The study reveals also that the co-operatives are taking more allowances than other buyers. The co-operatives are also admitting this arguments, but they

are taking this allowances especially when coconut are procured under MSP, because the nuts supplied by the growers will not always be according to the quality conditions prescribed by the apex bodies and thus it require further drying after the procurement. This causes decrease in weight of nuts after few days. So as a precaution, the cooperatives are taking allowances and they also say that the private parties are not usually taking the allowances but they are adjusting the rate of copra by bringing down the prices, which co-operatives cannot do.

While analysing the rate of allowances taken by the buyers among regions, it is noticed that cooperatives of the northern region takes more allowances as compared to central and southern region. Out of the 150 growers from northern region 18 per cent, 68 per cent and 8 per cent of growers say that the co-operatives take more than 8 nuts, 4 to 8 nuts and less than 4 nuts respectively. Similarly 1%, 2% and 77% respectively of growers of this region says that private parties take more than 8 nuts, 4 to 8 nuts and less than 4 nuts. 20% of the growers say that the private vendors never take deductions as allowances, but only 3% of the growers have the same opinion with regard to the co-operatives.

Out of the 150 growers from the central region 9%, 52% and 39% of the growers answer that the cooperatives take more than 8 nuts, 4 to 8 and less than 4 nuts respectively as allowances. But 6%, 57% and 37% of the growers say that private vendors take more than 8 nuts, 4 to 8 nuts and less than 4 nuts as allowances. All the growers agree on buyers taking allowances. So the rates of allowances taken by both the parties under the central region are more or less equal.

The rate of allowances taken by the buyers of southern region is the least. Out of the 150 growers of this region 3%, 44% and 50% respectively of

growers answered that the co-operatives take more than 8 nuts, 4 to 8 nuts and less than 4 nuts as allowances. Only 13% of the growers of this region answer that the private parties take allowances and that too only less than 4 nuts per 100 nuts collected. About 87% of the growers say that the private parties never take allowances but only 3% of the growers say that the co-operatives never take allowances.

Coconut Growers and Coconut Marketing Co-operatives

The coconut growers selected for the study are the growers who supply coconut/copra to the co-operatives. All the sample growers are the members of co-operatives societies which are undertaking coconut marketing in one or other forms. But it is understood from the study that only very few co-operative societies are undertaking coconut marketing throughout the period. The PACS and SCB are coming into the coconut marketing, only when there is procurement operation under PSS.

During the study period, there was a drastic fall in the market price and wide spread procurement operation was carried out through out the state by the Nafed through the co-operatives societies. But during these periods also the dependence of growers towards co-operatives is not satisfactory.

Here an attempt is made to study the relationship between coconut growers and coconut marketing co-operatives to know how far the coconut growers depend on the coconut co-operatives.

The Table 6.23 shows the period of membership of the coconut growers in the co-operative societies.

Table 6.23: Period of membership of coconut growers in co-operatives (Region- wise) *(No. of societies)*

Period (years)	South	Central	North	Total
Below 5	6 (4)	4 (3)	27 (18)	37 (8)
5 to 10	10 (7)	37 (25)	36 (24)	83 (19)
Above 10	134 (89)	109 (72)	87 (58)	330 (73)
Total	150 (100)	150 (100)	150 (100)	450 (100)

Note: Figures within parentheses denotes percentage within buyers.
Source: Survey data.

The survey reveals that 73 per cent of the growers have the membership in co-operatives over 10 years and 19% have between 5 and 10 years; but only 8% have the membership below five years. It is observed during the study periods that most of the growers, who have supplied coconut to the societies at least once, might have the co-operative spirit and they are permanently contacting the co-operative societies for several purposes. The region wise analysis shows that the growers of southern region have more period of membership than the other two regions. About 89% of the growers of this region have the membership over 10 years, 7% have the membership between 5 and 10 years, and only 6% of growers take the membership recently.

72% of the growers of central region have the membership more than 10 years and 25% of the growers have the membership between 5 and 10 years. Only 3% have taken the membership recently.

But hardly 58% of the growers of northern region are member for more than 10 years, 24% of the growers from this region says that they have been in the societies for 5 to 10 years. 18% of the growers took membership recently.

It is found from the study that the majority of the growers have long membership in the co-operatives and they have cooperatives spirit also. But

the coconut growers rarely prefer cooperatives as the buyer of coconut to other buyers. The Table 6.24 shows the frequency of grower preferences over co-operatives as the buyer of coconut.

Table 6.24: Frequency of preferences of co-operative societies as the buyer

Frequency	No. of growers	Percentage
Always	82	18
Rarely	135	30
Never	14	3
When the society gives better price	219	49
Total	450	100

Source: Survey data

Table 6.24 shows that 49% of the growers who sell their produce to the marketing co-operatives do so only when they get better price than any other buyers. This will happen only in the period of procurement under PSS. It is found from the study that 18% of the growers always prefer coconut co-operatives as their buyer, because the co-operatives situated under this category are the regular buyers of coconut. They are well managed and offer regular and better market for coconut. So it is inferred that the coconut growers are interested and ready to supply their marketable surplus, if the co-operative give regular market and better price for the coconut. 30% of the growers prefer very rarely the co-operatives as their buyer. These classes of growers sell their produce to the cooperatives when it is difficult to market in any other ways (see Table 6.25) and 3% says that they never prefer co-operatives as their buyer because of the bitter experience they had while trying to market their produce through cooperatives. These classes of growers put the baseless argument that the cooperatives sometimes stop the procurement or reject their produce.

As mentioned above, when the co-operatives offer better price, regular market and ready payment for the coconut, the growers would be willing to supply their produce to them. This statement is also substantiated by the rankings given by coconut growers to sell coconut to co-operatives (Table 6.25).

Table 6.25: Reasons to Sell Coconuts to the Coconut Marketing Co-operatives

Sl. No.	Reasons	Mean score	Rank
1	Give better price	64.96	I
2	Regular market	61.21	II
3	Non availability of other buyers	44.52	III
4	Ready payment	41.92	IV

Note: Maximum possible score is 100

The growers who have supplied coconut to the cooperatives atleast once, say that they supply their marketable surplus only because of the better price offered by the co-operatives. The second reason pointed by most of the growers is the regular market offered by the co-operatives. Only the general marketing societies which are engaged exclusively in the coconut marketing process are collecting coconut regularly. The third important reason expressed by the growers for selling their produce to co-operatives is only because of non-availability of other buyers. Ready payment is the least important reason expressed by the growers for selling to co-operatives.

The distribution of coconut growers according to the period of supply of coconut to the co-operatives is presented in Table 6.26.

Table 6.26: Period of Coconut Supply to the Co-operatives

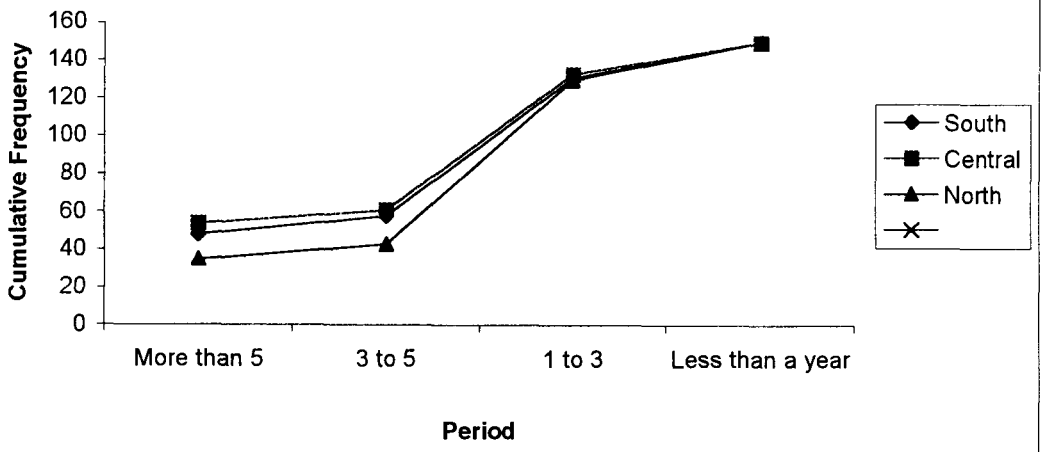
	South			Central			North			Total		
Period (yrs.)	**No.**	**CF**	**%**	**No.**	**CF**	**%**	**No.**	**CF**	**%**	**No.**	**CF**	**%**
More than 5	48	48	32	54	54	36	35	35	23	137	137	30
3 to 5	10	58	39	7	61	41	8	43	29	25	162	36
1 to 3	73	131	87	72	133	89	87	130	87	232	394	88
Less than a year	19	150	100	17	150	100	20	150	100	56	450	100

Source: Survey Data
Note: percentage indicates % of CF (Cumulative Frequency)

Table 6.26 shows that all the sample growers had supplied coconut to the co-operative atleast a year. It can be noticed that majority of the growers (88%) supplied coconut to the co-operative for the first 3 years. But the point, which is noticed from the Table is that only 36% of the growers have been supplying their produce when the period is taken as 'upto 5 years' and 30% of the growers supplied for more than 5years. The characteristic of the growers towards the period of supply is also more or less similar among the regions. There is a sudden jump in the rate of supply of coconut to the co-operatives from the period 3-5 years to 1-3 years. The sudden rise in the supply is occurred only because of the sharp fall in the market price of coconut during the survey period and co-operative have started to procure copra under minimum support price. While comparing among regions, this sudden change of the rate of supply from 3 to 5 years period to 1 to 3 years period is high in northern region as compared to other two regions. The change is 29% to 87% in northern region while at the same time these are 41% to 89% and 39% to 87% for central and southern regions respectively. About 30% of the growers have been supplying coconut to the co-operatives for more than 5 years indicate that they are the regular suppliers of coconut to the co-operatives. This is also substantiated by the change in percentage from more than 5 years period supplied to 3-5 years is very nominal (6%).

The same rate of change can be noticed in every region. Figure 6.4 gives a clear idea about the period of supply of coconut to the co-operatives.

Fig. 6.4: Periods of supply of coconut to the co-operatives (size group-wise)



A comparison of support price and market price and the frequency of supply of coconut to the co-operatives can be very well clear in the relationship among these three attributes. The comparison is presented in Table 6.27.

Table 6.27: Relationship among the Market Price, Support Price and Frequency of Growers (who supplied coconut to the co-operatives)

Year	Market price* (in Rs.)	Support price* *(for milling copra)* (in Rs.)	% of Growers**
1996	2471	2500	30
1997	3258	2700	36
1998	3226	2900	36
1999	3670	3100	88
2000	2400	3250	88
2001	2200	3300	100

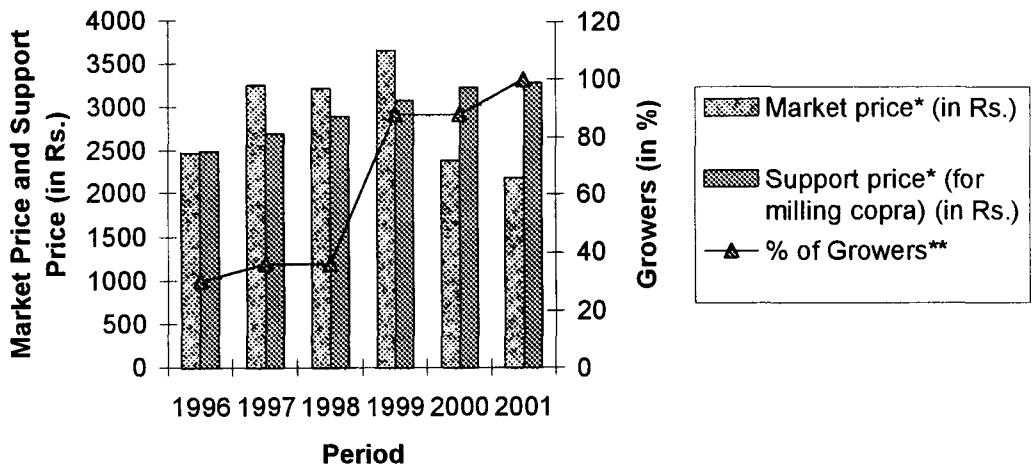
*Source: *From various newspapers*

***calculated from primary data (Cumulative frequency)*

The Table shows that there is a positive relationship between support price and frequency of growers supplied to co-operatives but the relationship between market price and frequency of growers are negative.

During 1996, 30% of the growers supplied coconut to the co-operatives when the market price was Rs. 2471, which was lower than the support price of Rs.2500. Only 6% of increase in growers had been recorded during the next year where the difference in the market price and support price were minimal. Again during the year 1998, there was no change in the number of growers supplied where the support price stands far behind of market price. But there was a sudden and sharp increase in the percentage of growers during the year 1999 proves that increase in support price leads to higher dependence of co-operatives. The percentage of number of growers remains the same during the year 2000 even if the difference between the market price and support price become wider (Rs.2400 and Rs.3250 respectively) But during 2001, all the growers interviewed have supplied their produce to the co-operatives because there was no sign of improvement in the price of coconut in the market, moreover there was decreasing trend for the market price of coconut (See Fig. 6.5).

Fig. 6.5 : Relationship among the Market Price, Support Price and Frequency of Grower Members



Thus it can be concluded that the majority of coconut growers depends on coconut cooperatives only when the support price exceeds the market price and the variations stands for longer periods.

Even though percentage of growers who have supplied coconut to the co-operatives shows an increasing trend during the last 3 years, the number of times growers supplied coconut to the co-operatives in a year is not seen satisfactory. This is presented in Table 6.28.

Table 6.28: Frequency of Supply of Coconut to the Co-operatives in a Year

(No. of growers)

No. of times Supplied	South	Central	North	Total
Less than 2	64 (43)	38 (25)	40 (27)	142 (32)
2 to 4	20 (13)	73 (49)	69 (46)	163 (36)
4 to 6	25 (17)	24 (26)	33 (22)	82 (18)
Above 6	41 (27)	15 (10)	8 (5)	63 (14)
Total	150 (100)	150 (100)	150 (100)	450 (100)

Note: Figures within parentheses denotes percentage within buyers.
Source: Survey data.

It can be noticed from the table that 32 per cent of growers supply coconut once in a year and 36% of growers supply only less than 4 times in a year.

The number of harvest of the coconut during a year ranges from 7 to 10 times; it varies from place to place. Most of the growers sell their produce immediately after harvest as mentioned elsewhere in the study. So it is supposed that the number of times the growers made coconut sale in a year would be equal to the number times of coconut harvesting. So if a grower supplies his produce to the cooperatives equal to the number of harvesting time it can be assumed that he is fully depending on the co-operatives, but the result shown by the Table is not satisfactory. More than 50% of the growers supplied only half or less of their total yield in a year. When the growers are asked about the reasons for not utilising the benefit given by the co-operatives they raise many reasons. This is explained in Table 6.29

It can also be noticed that 18 % of the growers have supplied coconut

less than 6 times in a year and only 14 % of the growers have supplied their entire yield of marketable surplus to the co-operatives.

When the variations in sales among regions are compared, the growers of southern region have made more number of sales to the co-operatives as compared to other region. Nearly 27 % of the growers of southern region make sales for more than 6 times. But it is 10 % and 5% respectively for central and northern region. At the same time the number of growers who made the least number of sales in a year is also high in southern region. It is 43 % in southern region as compared to 25 % and 27% respectively for central and northern region. 13 %, 49% and 46 % respectively of the growers of southern, central and northern regions have supplied coconut to the co-operatives in less than 4 times only.

When the growers are asked about the reasons for not supplying their entire marketable surplus to the cooperatives, they answered that they are ready to supply their produce and tried to supply, but the cooperatives have rejected the produce several times. Most of the growers have the opinion that the coconut marketing cooperatives showed discrimination while trying to supply the produce to the society. But most of the time they have procuring the produce brought by the traders and large growers. The frequencies for rejection of the coconut brought by the growers in a year are presented in Table 6.29.

Table 6.29: Frequency of Rejection of Coconut brought by the Growers

Frequency of rejection	South	Central	North	Total
Never	35 (23)	18 (12)	17 (11)	70 (16)
Rarely	42 (28)	60 (40)	30 (20)	132 (29)
Often	23 (15)	51 (34)	36 (24)	110 (25)
Frequently	16 (11)	11 (7)	46 (31)	73 (16)
Always	34 (23)	10 (7)	21 (14)	65 (14)
Total	150 (100)	150 (100)	150 (100)	450 (100)

Note: Figures within parentheses denotes percentage within buyers.
Source: Survey data.

From the Table it is revealed that only 16% of the growers had answered that the cooperatives never rejected the produce brought by them. These types of coconut marketing agencies would be the real marketing agencies who are efficient in the coconut marketing activities and they are having enough infrastructural facilities. They are the active co-operatives stands for the coconut trading in the market. The southern region is the least affected region in terms of rejection. About 23 % of growers say that their entire produce have procured by the cooperatives, 12% and 11% respectively of the growers of the central and northern region also answered the same. The remaining growers had experienced the rejection of produce from cooperatives at least once in a year. 29 % of the growers say that the cooperatives are rejecting the produce very rarely, while 25% of growers say that cooperative rejects very often. Most of the growers (40%) of central region responded that their produce had been rarely rejected by the cooperatives but only 20% and 28% of the growers respectively of northern and southern region answered that their produce had rarely been rejected by the cooperatives. Nearly 16% of the growers say that their produce had been rejected frequently by the cooperatives. The percentage of growers whose produce had been rejected frequently by the cooperatives is high in northern region (31%) while it is 11% in southern region and 7% in central region. The produce of 14% growers is rejected always by the co-operative. Because of this tendency of the coconut cooperatives these growers were reluctant to supply their produce further. Growers of southern region had suffered more (23%) as compared to central and northern region. It is 7% in central region and 14 % in northern region.

The reasons frequently made by the coconut marketing cooperatives for the rejection of coconut are listed in table 6.30.

Table 6.30: Reasons for Rejection

Sl. No.	Reasons	Mean score	Rank
1	High water content	61.56	I
2	Fungus	44.67	II
3	Coconut becomes rubbery	36.67	III
4	Shortage of storage facility	16.44	IV

Note: Maximum possible score is 100

According to A majority of growers, the most important reason they cite for rejecting the coconut is their high moisture or water content. This would become the good reason a co-operative can make for rejecting the produce because the level of water content cannot be proved by a grower. The Copra will show different results of moisture content from different parts while testing with moisture checking equipment. So a marketing society can deliberately show high and low moisture content as they desire. Experts say that the very bottom part of copra will show high moisture content than the mouthpart of the same copra, and there are no rules which prevails for selecting a part for checking the moisture content of copra. The second important reasons frequently told by the cooperatives for rejecting the produce is the presence of fungus in copra. This may happen when immature coconuts were used for making copra or in the absence of required number of days drying for copra. The third important reason is rubbery copra; this also happen when immature coconuts used for making copra. The last but not the least reason told by the cooperatives is the shortage of storage facility.

B. PROBLEMS OF GROWER MEMBERS

Being a smallholder crop, the problems of coconut growers in general could be characterised as non-viable size for processing and marketing, lack of access to post-harvest operations, credit and weak bargaining power to dispose for the produce at fair prices. But the specific problems here

analysed is the problems come across by the coconut grower members while marketing their produce to the co-operative societies.

The coconut growers in Kerala are not organized. The growers are forced to sell their produce to the middlemen because of circumstantial pressures. The private traders, who advance money to the growers, make the poor and unorganized coconut growers to fall into their clutches and exploit them in all possible ways.

It is estimated that as large as 81 per cent of marketed surplus nuts in Kerala are sold to the middlemen by the farmers at their farm gates. Only 17.5 per cent of marketed surplus find their way through market outlets and the remaining 1.5 per cent are disposed of through the co-operative network[11]. The farm gates are certainly not ideal places for marketing any produce for obvious reasons.

It can be revealed from Table 6.31 that the marketed surplus per holding every two months (after each biennial harvest) is only 110 nuts-a number economically not worthwhile to carry over long distance for disposal[12]. Again with such a small lot, the farmer finds himself at a disadvantageous position to bargain for fair price with the merchant in assembling market. Other compelling factors like pre-harvest contract and inaccessibility to market give rooms for sales at garden.

Table 6.31:Estimated Marketing Surplus of Nuts from Coconut Holdings in Kerala.

No. of palms/holding	45
Bearing palms/holdings	34
Rounds of harvest/year	6
Nuts harvested/round	173
Nuts harvested/year	1,038
Nuts utilized in the holding	378
Marketed surpluses/year	660
Marketed surplus/alternate months	110

Source: Survey of coconut holdings in Kerala conducted by the CPCRI during 1986-87

Under these situations, the middlemen abuse their positions by resorting to various types of malpractices. They collect, for example, 5 to 8 nuts per 100 nuts towards trade allowances. They also make some sort of arbitrary discounts on agreed rate under the pretext of undersized and immature nuts. It is, however, noticed that unlike other places the exploitation of Kerala farmers by the middlemen does not take any alarming proportion because of the presence of enlightened mass here. Whatsoever it may be, the present system of marketing of coconut and its products is, by and large, unscientific and unorganized and is almost totally lacking vertical integration.

Although coconut is made a notified commodity in Kerala, the marketing lacks systematic organizational set up. In the absence of this, the exploitation by middlemen and other functionaries is rampant. In almost all the primary markets, the prices are normally dictated by the middlemen. In addition to this, various kinds of malpractices are also commonly seen in almost all the markets[13].

Like the fresh coconuts, the marketing of copra is also almost wholly controlled by private traders. Here, too these private merchants take advantage of the falling prices situation of coconut oil and poor economic status of the coconut growers.

Transportation and Storage

Transport is essential for the operation of the marketing system. The transportation cost to bring the produce to the coconut market again makes an additional burden to the small growers and that is why majority of growers resorted to on-farm sale of coconut. Moreover, Most of the times the coconut cooperatives rejects the produce brought by grower, in this case also the transportation cost for taking back the produce to another market

have to borne by the growers. It is revealed from the survey that no coconut marketing agencies provided them transport facility.

To avail the opportunity of getting maximum price the products will have to be stored until favourable conditions prevail in the market. Coconut productions are characterized by relatively large and irregular and seasonal and having year to year fluctuations, but the consumptions are on the other hand, relatively stable. These conflicting circumstances make it necessary to hold large stocks for considerable period of time. Additionally, inadequate storage facilities cause heavy losses to growers resulting in serious wastage.

In the absence of proper storage facility seasonal fluctuations in the price would get aggravated and the strain on the transport system would become too much preventing the orderly movement of goods. An interesting point with regard to storage facilities is the ownership of these facilities. The traders especially wholesalers and commission agents and cooperatives possess the bulk of storage facilities available for coconut. Due to financial stringency, lack of storage facility and compulsion of traders from whom the growers have borrowed money, growers are unable to store the nuts and have to sell the nuts immediately after harvest when prices usually becomes low. The availability of storage facilities and the use of it for storing coconut is presented Table 6.32.

Table 6.32: Storage Capacity of the Growers and the Period of Storage of Coconut

Storage facility	North	Central	South	Total
1)No storage facility	108 (72)	122 (81)	126 (84)	356(79)
2)Having storage facility but not storing	10 (7)	11 (7)	24 (16)	45 (10)
3) Storing one month	15 (10)	10 (7)	Nil	25 (6)
4) storing up to 3 months	7 (4)	7 (5)	Nil	14 (3)
5) storing more than 3 months	10 (7)	Nil	Nil	10 (2)
Total	150 (100)	150 (100)	150 (100)	450 (100)

Note: figures in parentheses are percentages to total
Source: Survey data

In the survey about 79% of the growers reported that they do not have storage facility. Only 2% of the growers are able to store the nuts for more than 3 months in the adverse conditions. Almost 3% of the growers can keep it only up to 3 months and 6% of the growers cannot store for more than one month. 10% of the growers are not storing their produce even though they have enough storage facility. Among the regions, the growers of southern region do not have the habit of storing the produce after harvesting. About 8% of the growers under this region do not have the storage facility and the remaining growers are not keeping the produces, though they have the storage facilities. As far as central region is concerned, 81% of growers have no storage facility, 7% have the storage facility but they are not storing the coconut. 5% of the growers can keep the nuts upto 3 months, but 7% coconut store more than one month. Growers of northern region have more storage facility as compared to other two regions. 28% of growers have storage facility, but 7% of growers are not keeping coconut in the godown. 7% can store only upto one month and 10% can store upto 3 months. Only growers of northern region can keep coconut more than three months.

Various reasons have been reported by them for not keeping the nuts. The reasons pointed out by the growers for not keeping the coconut is due to financial stringency and the second reason is due to the compulsion of traders from when they have borrowed. The third reason most of the growers attributed is the fear of further price fall etc,.(Table 6.33)

Table 6.33: Reasons for not keeping coconut in the godown

Sl. No.	Reasons	Mean Score	Rank
1.	Financial Stringency	69.21	I
2.	Compulsion of traders	57.16	II
3.	Fear of further fall in price	54.43	III

Note: Maximum score is 100
Source: Survey data

Coconut Processing

In Kerala, the processing of nuts is mainly confined to milling copra, edible cup copra and ball copra. Kerala alone accounts for 95 per cent of milling copra production in India. Since coconut is the major source of income for the vast majority of smallholders in Kerala, depending on the exigencies they harvest immature nuts for sale. Such immature nuts when processed produce rubbery, torn and broken types of low grade copra. Moreover, the processing of nuts of the root (wilt) diseased palms yield same type of inferior copra. This sort of copra obviously fetches lower prices.

It is observed that majority of growers who are marketing copra are engaged in their occupation on traditional lines without much of institutional support. The growers have no access to the requisite working capital to stock copra for demand-supply adjustment. Besides this, copra being hygroscope in nature, improper storage leads to further deterioration of the quality of copra. One could notice mouldy patched, discoloured, putrid and insect ridden copra in market places largely due to storage problems.

Lack of facilities for copra making at a lower cost during the monsoon months is another dimension of coconut processing problems. Some take coconut to kiln drying in rainy season, but in order to avoid higher cost of processing they resort to under dried copra with more than 6 per cent moisture. This necessitates further drying at the merchant's level before it is sold in the secondary market. Most of the kilns are not designed properly. Hence they result in over smoked copra which is undesirable quality for extracting good flavoured oil.

As the moisture contents of varying types of copra vary considerably due to the use of nuts at different stages of their maturity and

also due to different types of processing and handling the copra merchants take advantage of the situation in the absence of proper method of copra moisture determination and make very arbitrary deduction in setting the price for copra.

Price instability

The instability in coconut oil prices and the consequent instability in copra and coconut prices pose serious problems to the coconut growers. Coconut is also facing a very severe crisis in view of the sharp decline in prices during the last two years. The average price of coconut which was in the range of Rs.4.50 to 5 a nut during 1999 has fallen sharply and the average farm price declined to Rs. 2.80 a nut during 2000-01[14]. the minimum support price announced by government of India for the period and the market intervention operation supported by Government of India had very little impact on the price of copra and coconut oil.

Coconut provides income and employment for millions of households with small holdings. The fall in price of coconut, combined with the wide-spread attack of coconut mite depressing the yield considerably in the central region, has affected the livelihood security of a vast majority of the small and marginal farmers of the state.

The prices of coconut and its products, particularly fresh nuts and copra, are normally governed by the prices of coconut oil in the terminal markets, which in turn are subject to heavy influence by the overall availability of other fats and oils in the country as well as their price mechanism. As a result of continuous price fluctuations premium prices, short supplies, etc., the coconut oil is slowly losing its pre-eminence in many end-uses and consequent erosion of its traditional markets. This trend is ultimately leading the growers as well as consumers into hardships.

But, as long as the coconut smallholders are disintegrated or unorganized, any attempt to improve the marketing situations could be foiled by the well organized and strongly integrated trade sector for their vested interests.

C. GROWER (MEMBERS) ATTITUDE TOWARDS COCONUT MARKETING CO- OPERATIVES

Only the establishment of properly regulated markets could remove the defects and chaotic conditions, prevailing in the markets of agricultural goods. The over-all aim of establishing the regulated markets finds solution to and reviews the defects which are clear in our marketing system - The Royal Commission on Agriculture, 1924[15].

The Royal Commission which was set up in 1928 recommended the protection of growers from the hands of monopolistic traders and stressed the need for the provision for better marketing facilities, basic infrastructure etc. To honour the recommendation of Royal Commission on Agriculture, the government has taken steps to market coconut through co-operatives. But it has been revealed from the previous notes that the co-operative systems were not succeeding in regulating the coconut market of Kerala. Only a nominal percentage of marketable surplus of coconut could be canalized through the co-operatives. In this context an attempt has been made to study the growers' attitude towards functioning of coconut marketing co-operatives in Kerala.

In order to study the growers' level of satisfaction towards the working of coconut marketing co-operatives, fourteen variables were selected and ranked on a five-point scale. For this, statistical tools such as chi-square test and percentage analysis have been employed. The chi-square test was employed to judge whether there is any significant difference in the satisfaction level of growers towards working of coconut marketing co-operatives. The chi-square test analysis was made

on the basis of the regions. The respondents were asked to indicate the degree of their attitude for each of the factors mentioned in the statement. The responses were coded and weightage was given in the following order. For each item, five possible responses were given according to the nature of statement and scores for the responses were as for first answer 5, second answer 4, third answer 3, fourth answer 2 and last answer 1. The scores were reverted for negative answers[16].

1. Price paid by the marketing co-operatives

The attitude of coconut growers towards the price paid by the marketing cooperatives for the coconut supplied by the growers is to be examined thoroughly because it is the most important variable considered by the growers while selecting the buyers for their produce. Only those buyers who give better price for the product will be selected as their buyer. The growers in total are of the opinion that the price paid by the marketing cooperatives is comparatively high.

Table 6.34: Attitude of Growers towards the price

Factors	South	Central	North	Total
Very high	Nil	7 *(5)*	2 *(1)*	9 *(2)*
High	98 *(65)*	139 *(92)*	130 *(87)*	367 *(81)*
Normal	49 *(33)*	4 *(3)*	18 *(12)*	71 *(16)*
Low	3 *(2)*	Nil	Nil	3 *(1)*
Very low	Nil	Nil	Nil	Nil
Total	150 *(100)*	150 *(100)*	150 *(100)*	450 *(100)*
Chi-square = 67.07, (Significant) d.f = 8, Table value at 0.05 = 15.507,				

Note: Figures within parenthesis denotes percentage to total
Source: Survey data

During the survey period there was a great fall in the market price of coconut and the support price exceeds the market price. It is observed that

only because of this, the growers who supplied most of their marketable surplus to the private middlemen, turned into coconut marketing co-operatives. But still, 16% of the growers are of the opinion that the price paid by the growers is normal. At the two extremes, 0.7% of the growers answered that the price is low but at the same time 2% answered that it is very high. These two opinions constitute only a nominal percentage and so can be ignored. The growers of central region are more satisfied with regard to the price offered by the coconut co-operatives than other regions.

The attitude of growers towards price of co-operatives has been tested through Ch-square test. The calculated value of chi-square is 67.07 and table value for 8 d.f at 5% level is 15.507 (Table 6.34). This shows that the price offered by the co-operatives for the coconut among regions is significantly different.

2. Period of Payment:

Since the coconut growers of Kerala are economically weak and their coconut holding very small, they need the sales proceeds immediately after the sale of nuts. Even though the small growers have some other subsidiary work, they also depend on the revenue from the coconut field. At the same time large growers can wait for sometime for the sale proceeds, if they get better price. So it is also find from the study that the large growers are supplying coconut to the co-operatives, when the payment is not regular and fast. So the growers of Kerala are very much concerned about the time of payment of the product. Hence, the time taken by the co-operatives for making the payment is analyzed to find out the attitude of growers towards the society. The chi-square value is also calculated to find out, whether there is any variance in the period of payment among regions.

Table 6.35: Status of growers getting the payment

Factors	South	Central	North	Total
Advance	Nil	Nil	Nil	Nil
Ready	102 *(68)*	9 *(6)*	38 *(25)*	149 *(33)*
Next day	9 *(6)*	22 *(15)*	19 *(13)*	50 *(11)*
Within on week	36 *(24)*	53 *(35)*	23 *(15)*	112 *(25)*
More than one week	3 *(2)*	66 *(44)*	70 *(47)*	139 *(31)*
Total	150 *(100)*	150 *(100)*	150 *(100)*	450 *(100)*
Chi-square = 169.83 (Significant), d.f = 8, Table value at 0.05 = 15.507				

Note: Figures within parenthesis denotes percentage to total
Source: Survey data

It can be noticed from the table 6.27 that no society is making advance payment for the produce. 33 % of the growers say that the co-operatives are making ready payment. 11% of the growers are of the opinion that the co-operatives are making payment in the next day of sale of produce. This situation can be managed by the growers, but the only difficulty is that they have to come over again in the co-operatives for collecting the cash. Since most of the count growers have some other subsidiary work as mentioned earlier, create additional problems to the growers. 25% of the growers say that the co-operatives make payments only within one week and about 31% of the growers are of the experience that the cooperative take more than one week for the payment of produce. It is observed from the study that some co-operatives fail to pay the sales proceeds even after one month. So the societies, which cannot pay cash within one week, can be treated as inefficient as far as their financial position is concerned.

Among the regions taken, the societies belong to southern region are more efficient than the societies of other two regions with regard to the prompt payment, because 68% of the growers of this region gets ready payment for the produce from co-operatives. But it is 25% in Northern region and only 6% in central region. The societies which belong to northern

regions take a long time for the payment. 47% of the growers of northern region gets the fund only after one week of the sale of produce and 44% of the growers from central region also say that the co-operatives of this region take more than a week for the payment. The calculated value of chi-square is 169.83 while the table value for 8 degrees of freedom at 5% level is 15,507 (Table 6.35). It is proved that there is significant difference among regions in terms of the period of payment.

3) Waiting in the Co-operatives for Disposing Coconut

The coconut cultivation of the majority of growers in the state is only a subsidiary work. The growers do not like to spend their time for disposing their produce. So 'waiting for the disposal of produce' amounts to the consideration of measuring the attitude. This has been tested through chi-square. The calculated value of chi-square is that 97.59 and table value for 8 d.f. at 5% level is 15.507 (Table 6.36). This shows that the attitude of growers toward the attribute - waiting for disposal- is significantly different among regions.

Table 6.36: Waiting time for disposing coconut

Factors	South	Central	North	Total
Very Quick	Nil	Nil	3 *(2)*	3 *(1)*
Quick	29 *(19)*	13 *(9)*	10 *(7)*	52 *(11)*
Normal	91 *(61)*	90 *(60)*	47 *(31)*	228 *(51)*
Long waiting	30 *(20)*	47 *(31)*	65 *(43)*	142 *(31)*
Very long waiting	Nil	Nil	25 *(17)*	25 *(6)*
Total	150 *(100)*	150 *(100)*	150 *(100)*	450 *(100)*
Chi-square = 97.59 (Significant), d.f = 8, Table value at 0.05 = 15.507				

Note: Figures within parenthesis denotes percentage to total
Source: Survey data

Table 6.36 shows that more than 50% of the growers waiting time are normal among regions. 60% of the growers of southern and central region have the same view, but only 31% of the growers of northern region give the same opinion. Growers of northern region are more dissatisfied towards this attribute than other two regions. Again, about 17% of the growers of northern region opined that they have to wait very long time for disposing their produce. Only 11.5% of the growers are of the opinion that the transactions are quick in marketing societies. So it is inferred that the societies of southern region are more efficient in transaction process and the society of northern region are the least efficient one.

4) Weight and Measurement

The middle men in the coconut trade always resort to various types of malpractices in taking weight and measurement of coconut brought by the growers. Sometimes the private middlemen offers good price for the coconut, but they adjust this high price by malpractice in weight and measurement of coconut. But co-operatives are not doing this type of malpractice, which can be clear form the table 6.37.

Table 6.37: Level of satisfaction towards weight and measurement

Factors	South	Central	North	Total
Excellent	1 *(1)*	10 *(7)*	4 *(3)*	14 *(3)*
Good	116 *(77)*	107 *(71)*	101 *(67)*	324 *(72)*
Fair	30 *(20)*	33 *(22)*	35 *(23)*	987 *(22)*
Poor	3 *(2)*	Nil	10 *(7)*	13 *(3)*
Very poor	Nil	Nil	Nil	Nil
Total	150 *(100)*	150 *(100)*	150 *(100)*	450 *(100)*
Chi-square = 22.73 (Significant), d.f = 8, Table value at 0.05 = 15.507				

Note: Figures within parenthesis denotes percentage to total
Source: Survey data

About 72% of the growers responded that the weights and measurement of the co-operatives are comparatively good. Among the regions, 67% of northern region, 71% of central region and 77% of southern region are of the same view. Only 3% of the growers responded that the weight and measurement of co-operatives are poor. 22% of the growers are of the opinion that the weight and measurement of co-operatives are fair. This opinion is more or less similar among growers of different regions. Only 3% of the growers says that the weight and measurement of the co-operatives are excellent. So it can be inferred from the table that the growers of central region shows more satisfaction than other two regions towards the weight and measurement.

When chi-square is applied to test the attitude of growers of different regions towards the weight and measurement of co-operatives, the result is 22.73 while that the table value for 8 degrees of freedom at 5% level was 15.507 (Table 6.37). This shows that the growers of all regions do not show similar attitude towards the weight and measurement of co-operatives.

5) Allowances Taken by the Co-operatives

Another malpractice practiced by the middlemen of the coconut-marketing channel is the system of taking coconut as allowances. The private middlemen sometimes deduct 2 to 8% of the number or weight of the coconut as the case may be, as allowances to make up the future shortage in weight due to high moisture content, requirement of further drying, rubbery nature of copra etc. These malpractices are widely practiced by the middlemen throughout the state. Since the coconut growers in Kerala are unorganized and as they have less bargaining power, they are compelled to accept this nature of malpractice. So the attitude of growers towards the co-operatives with regard to the allowances of coconut to be studied to know

how the co-operative as middlemen behave in this respect. It is presented in Table 6.38.

Table 6.38: Opinion of growers regarding Allowances taken by the co-operatives

Factors	South	Central	North	Total
Never	17 *(11)*	4 *(3)*	9 *(6)*	30 *(7)*
Rarely	31 *(21)*	9 *(6)*	6 (4)	46 *(10)*
Often	11 *(7)*	7 *(5)*	Nil	18 *(4)*
Frequently	5 *(3)*	11 *(7)*	1 *(1)*	17 *(4)*
Always	86 *(58)*	119 *(79)*	134 *(89)*	339 *(75)*
Total	150 *(100)*	150 *(100)*	150 *(100)*	450 *(100)*
***Chi-square = 62.85 (Significant), d.f = 8, Table value at 0.05 = 15.507**				

Note: Figures within parenthesis denotes percentage to total
Source: Survey data

75% of the growers responded that, even though the weight and measurement of co-operatives are good, they are always taking allowances as deductions in weight; 89% of the growers of northern region, 79% of the central region and 58% of southern region agreed with this view. It is also observed that the co-operatives are taking more allowances than the private middlemen. Only 7% of the growers responded that the co-operatives never take allowances. It can be inferred from the study that the co-operatives of southern region take less allowances while the co-operatives of northern region take more allowances.

Disparities among the regions with regard to the allowances taken by the societies are found out by testing through chi-square test and the result obtained is 62.85 whereas the table value for 8 degrees of freedom at 5% level is15.507. This shows that there is a significant difference among societies of different regions towards the allowances taken while collecting

the coconut.

6) Nearness to Field

As mentioned elsewhere, the yield of coconut of smallholders not worthwhile to bring into the buyers' place for disposing the coconut. Since majority of the growers are small, they are making more of on-farm sales than the off-farm sales. It is observed from the survey that the co-operatives are situated at a distant place from the field and so, the growers will prefer private buyers who make field procurement and are very near to the growers' field. Hence the growers' attitude towards this attribute is also analysed and result are presented in Table 6.39.

Table 6.39: Opinion regarding - Nearness to field

Factors	South	Central	North	Total
Very near	6 *(4)*	3 *(2)*	5 *(3)*	14 *(3)*
Near	2 *(1)*	19 *(13)*	25 *(17)*	46 *(10)*
Normal	50 *(33)*	40 *(27)*	33 *(22)*	123 *(27)*
Far	62 *(42)*	31 *(20)*	30 *(20)*	123 *(27)*
Very Far	30 *(20)*	57 *(38)*	57 *(38)*	144 *(33)*
Total	150 *(100)*	150 *(100)*	150 *(100)*	450 *(100)*
Chi-square = 49.39 (Significant), d.f = 8, Table value at 0.05 = 15.507				

Note: Figures within parenthesis denotes percentage to total
Source: Survey data

Only 13% of the growers have responded that the marketing co-operatives are 'very near' to their field, and 27% responds that the distance to the co-operatives are 'normal' and they can carry their goods without any additional expenses. But according to 60% of the growers the marketing co-operatives are either 'far' or 'very far' from their coconut field and this will make additional burden on them, if they carry their yield to the co-

operatives. So it can be concluded that the marketing co-operatives situate very far from the grower's field.

Disparities among different regions with regard to the distance of the societies are finding out by testing through chi-square test and the result obtained is 49.39 whereas the table value for 8d.f. at 5% level is 15.507. This shows that there is no relationship among societies of different regions towards the attribute – Nearness to field.

Only 4% of the growers of southern region responded that the marketing co-operatives are near to their field, while 15% (2+13) of the growers of central region and 20% (3+17) of the growers of northern region responded that the co-operatives are very near or near to their field. The remaining growers' opinion is that the marketing co-operatives are either at normal distance or very far from their field. So it can also be concluded that the marketing co-operatives of southern region are situated very far from the growers' field as compared to other two regions. The difference in opinion among regions was also tested with chi-square and the result obtained is 104.05, while the tabular value for 8d.f. at 5% level is 15.507. From this, it is clear that there is significant difference between the attitudes of growers among regions.

7. Storage Facility

For efficiently undertaking marketing operation of any agricultural produce, a co-operative marketing society essentially requires storage facility. But it was found from the previous chapters that almost all the coconut marketing co-operatives faces the shortage of storage facility, especially when copra is procured under PSS and consequently they are forced to reject or stop the coconut procurement operation. It can be seen

from the survey that the co-operatives have to store the collected nuts for more than seven days before it is delivered to the buyers. Moreover, the provision of storage facility to the growers is also one of the objectives of the co-operatives. Only very few societies are providing this facility. Hence the attitude of growers towards the co-operatives with regard to their storage facility is analysed to find out to what extent each society has the facility. The attitude shown by the growers are presented in Table 6.40.

Table 6.40: Opinion of growers regarding the storage facilities

Factors	South	Central	North	Total
Excess	1 *(1)*	17 *(11)*	3 *(2)*	21 *(5)*
Sufficient	36 *(24)*	20 *(13)*	23 *(15)*	79 *(17)*
Insufficient	80 *(53)*	74 *(50)*	86 *(57)*	240 *(54)*
Very less	20 *(13)*	23 *(15)*	25 *(17)*	68 *(15)*
No Storage facility	13 *(9)*	16 *(11)*	13 *(9)*	42 *(9)*
Total	150 *(100)*	150 *(100)*	150 *(100)*	450 *(100)*
Chi-square = 29.09 (Significant), d.f = 8, Table value at 0.05 = 15.507				

Note: Figures within parenthesis denotes percentage to total
Source: Survey data

It is clear from the Table that most of the co-operatives have insufficient storage facility. Only 18% of the growers responded that the co-operatives have sufficient storage facility and 5% are of the opinion that their co-operatives have excess storage facility. According to the remaining growers, the co-operatives have either insufficient or no storage facilities. The co-operatives from the southern region have the least storage facility as compared to other regions. The southern and central regions are more or less in similar storage facility. The variations in storage facilities among regions are tested with chi-square. The calculated value of chi-square is 29.09 while the table value for 8 degrees of freedom at 5% level is 15.507 (Table

6.40) It is proved that there are significant differences among regions with regard to storage facility.

8. Information and Guidance

The marketing co-operatives are supposed to give suitable guidance and information to the growers regarding the cultivation, processing, marketing, various subsidies, facilities provided by the government etc. Such information if provided suitably can strengthen the relationship among the co-operative societies and their members. Ultimately, the growers will continuously supply heir marketable surplus to the co-operatives, if they get such additional facilities.

Table 6.41: Opinion of growers regarding the information and guidance

Factors	South	Central	North	Total
Very good	1 *(1)*	1 *(1)*	1 *(1)*	3 *(1)*
Good	89 *(59)*	9 *(6)*	26 *(17)*	124 *(27)*
Bad	13 *(9)*	27 *(18)*	13 *(9)*	53 *(12)*
Very bad	14 *(9)*	16 *(11)*	53 *(35)*	83 *(18)*
No guidance	33 *(22)*	97 *(64)*	57 *(38)*	187 *(42)*
Total	150 *(100)*	150 *(100)*	150 *(100)*	450 *(100)*
Chi-square = 161.75 (Significant), d.f = 8, Table value at 0.05 = 15.507				

Note: Figures within parenthesis denotes percentage to total
Source: Survey data

But the attitude of respondents presented in Table 69.8 shows that only 29% of the growers are getting good information and guidance about the agriculture including marketing. The remaining 71% of the growers responded that the information and guidance provided by the co-operatives are not useful. The societies which belong to southern parts are providing useful information and guidance to the growers than the other two regions. The differences in regions tested through chi-square test and the result

obtained is 161.75 whereas the table value for 8 degrees of freedom at 5% level is 15.507 (Table 6.41). This shows that there is no relationship among the regions with regard to the provision of information and guidance.

9. Discrimination

The co-operatives are formed to promote self-help and co-operation among the members that all the members of the co-operatives have to be treated in similar manner when any transaction is made by the co-operatives with them. It is one of the principles of co-operation. While from the survey it is found that the marketing co-operatives sometimes shows discrimination between small and large growers while procuring coconut/copra from them. Hence the growers' attitude has to be analysed to know whether the co-operatives are making any discrimination among the members while procuring coconut. The table 6.42 shows the frequency of degree of discrimination shown by the growers.

Table 6.42: Opinion of growers regarding the discrimination

Factors	South	Central	North	Total
Never	50 *(33)*	37 *(25)*	30 *(20)*	117 *(26)*
Rarely	31 *(21)*	77 *(51)*	28 *(19)*	136 *(30)*
Often	17 *(11)*	21 *(14)*	19 *(13)*	57 *(13)*
Frequently	28 *(19)*	5 *(3)*	56 *(37)*	89 *(20)*
Always	24 *(16)*	10 *(7)*	17 *(11)*	51 *(11)*
Total	150 *(100)*	150 *(100)*	150 *(100)*	450 *(100)*
Chi-square = 88.72 (Significant), d.f = 8, Table value at 0.05 = 15.507				

Note: Figures within parenthesis denotes percentage to total
Source: Survey data

It can be seen from the Table that only 26% of the growers have responded positively about the co-operatives which shows no discrimination among the growers. 11% of the growers have experienced the

discrimination always from the co-operatives while supplying coconut, the co-operatives are always rejecting the produce by saying various reasons, while at the same time the co-operatives take the nuts brought by other growers, who can influence the co-operatives. 30% of the growers have responded that the co-operatives are rarely showing discrimination while 13% of the growers opinion is that the co-operatives are showing discrimination very often and 20% have responded that the co-operatives are frequently showing discrimination.

The growers of northern region is facing severe discrimination from the co-operatives as compared to central and southern region, because only 20% of the growers responded from the northern region felt that the co-operatives have never shown any discrimination and the remaining 80% of the growers have experienced the discrimination from the co-operatives, the only difference is in the degree of discrimination. This shows that the co-operatives are showing discrimination against small growers. The chi-square test applied to know the variations with regard to the discrimination gives the result 88.72 and the Table value for 8 degrees of freedom at 5% level is 15.507. This shows there is significant difference between the regions.

10. Dealings

Even though the price offered by the buyers is the prime consideration while selecting a buyer, the nature of dealings will also be considered for selecting a buyer, especially when there is not much difference in the price of both vendors. The growers prefer those buyers who have better dealings with them. But the employees of the co-operatives do not have any commitment to the growers. So the dealings towards the growers will also not become good. But the private parties attract the growers by providing better services and have good dealings. So, the

attitude of the growers towards the dealings of co-operatives has to be analysed so as to know the type of dealings the co-operatives have with the member growers. The opinion shown by the growers are presented in Table 6.43.

Table 6.43: Opinion of growers regarding the dealings of co-operatives

Factors	South	Central	North	Total
Excellent	10 *(7)*	20 *(13)*	15 *(10)*	45 *(10)*
Very Good	68 *(45)*	50 *(33)*	65 *(43)*	183 *(41)*
Good	33 *(22)*	51 *(34)*	31 *(21)*	115 *(25)*
Bad	30 *(20)*	29 *(20)*	31 *(21)*	90 *(20)*
Very Bad	9 *(6)*	Nil	8 *(5)*	17 *(4)*
Total	150 *(100)*	150 *(100)*	150 *(100)*	450 *(100)*
Chi-square = 21.36 (Significant), d.f = 8, Table value at 0.05 = 15.507				

Note: Figures within parenthesis denotes percentage to total
Source: Survey data

The Table shows the dealings of the co-operatives towards the growers are good. 20% of the growers have responded that the dealing of the co-operatives are bad and 4% have the opinion that the co-operatives are dealing very badly. The remaining 76% of the growers have responded positively towards the dealings of co-operatives. The growers of different regions have shown similarity in the nature of dealings of co-operatives.

The variation in the responses among regions is also tested with chi-square and the value obtained is 21.36 while the table value for 8 degrees of freedom at 5% level is 15.507 (Table 6.43). This shows that the dealings of the co-operatives among regions are different.

11) Input Supply: Input Supply is another important subsidiary function the marketing co-operatives are supposed to provide the growers with. Input supplies like, implements, seeds etc are the things the co-operatives usually

give to the growers at subsidised rate. But very less or no marketing co-operatives are providing these inputs to the growers. So this attribute is analysed by taking the opinion of growers about the marketing co-operatives. The satisfaction level indicated by the growers towards the input supply of marketing co-operatives are presented in Table 6.44.

Table 6.44: Opinion of growers regarding the input supply

Factors	South	Central	North	Total
Excellent	1 *(1)*	1 *(1)*	Nil	2 *(0.5)*
Very Good	3 *(2)*	7 *(5)*	11 *(7)*	21 *(4.5)*
Good	9 *(6)*	14 *(9)*	15 *(10)*	38 *(8)*
Bad	40 *(27)*	25 *(17)*	24 *(16)*	89 *(20)*
Very Bad	97 *(64)*	103 *(68)*	100 *(67)*	300 *(67)*
Total	150 *(100)*	150 *(100)*	150 *(100)*	450 *(100)*
***Chi-square = 12.79 (Insignificant), d.f = 8, Table value at 0.05 = 15.507**				

Note: Figures within parenthesis denotes percentage to total

Source: Survey data

It can be seen from the Table that most of the societies are not providing the inputs required for the growers. 20% of the growers have responded that the input supply of the marketing co-operatives is 'poor' and 66.5% of the growers have responded that it is 'very poor'. 8.5% of the growers say that the input supply is 'good', and 4.5% of the growers have answered that it is 'very good' but only 0.5% of the growers says that it is excellent. The responses of the growers of different region are more or less similar in respect of input supply of the marketing co-operatives. On an average about 9% to 17% of the growers of different regions responded positively towards the input supply of co-operatives of respective regions. The chi-square test was also made to know the variation of responses among regions and the calculated value derived is 12.79 whereas the table value of 8

degrees of freedom at 5% level was 15.5.07 (Table 6.44). This shows that the grower's attitude towards input supplies in different regions are uniform.

12. Period of Procurement (Regular market)

Availability of regular market is one of the important factors considered for selecting a buyer. Almost all the coconut growers have his own regular buyer, and these buyers have a good relation with the growers. All the private buyers provide regular market for the coconut irrespective of the season and variation in prices. These buyers will always collect the product either from the growers' field or premises. It is found from the survey that majority of the market co-operatives are not providing regular market for coconut. They are collecting the product when there is PSS or when the apex body requests for the produce. Hence the attitudes of growers towards the period of procurement made by the marketing co-operatives have to be analysed to know the period at which the co-operatives are collecting the produce. The attitudes of growers in this respect are presented in Table 6.45.

Table 6.45: Opinion of growers regarding the period of procurement of co-operatives

Factors	South	Central	North	Total
Through out the year	22 *(15)*	30 *(20)*	16 *(11)*	78 *(17)*
Up to 9 months	29 *(19)*	16 *(11)*	11 *(7)*	56 *(12)*
Up to 7 months	52 *(35)*	18 *(12)*	27 *(18)*	97 *(22)*
Up to 5 months	45 *(30)*	67 *(45)*	88 *(59)*	190 *(42)*
Up to 3 months	2 *(1)*	19 *(12)*	8 *(5)*	29 *(7)*
Total	150 *(100)*	150 *(100)*	150 *(100)*	450 *(100)*
Chi-square = 63.04 (Significant), d.f = 8, Table value at 0.05 = 15.507				

Note: Figures within parenthesis denotes percentage to total

Source: Survey data

The Table shows only 17% of the growers respond the marketing co-operatives are buying coconut throughout the year. So the co-operatives are not at all providing regular market for the coconut and this itself indicates the level of influence of the co-operatives in the coconut marketing is very less. Only 12% of the growers have the opinion that the co-operatives are buying nuts 9 months in a year and 22% of the growers say that the co-operatives are taking their product only upto 7 months in a year. Again 42% of the growers responded that they can supply their nuts to the co-operatives only during 5 months in a year since the coconut is a perennial crop and are giving yields throughout the years the growers needs a regular market for supplying their product and 7% of the growers say that the co-operatives are taking the product on an average of 3 months period. Therefore, it can be concluded that co-operatives never provide regular market for coconut.

When chi-square is applied to test the difference in the attitude of the growers of different regions, the result arrives at 63.04, while that the table value of 8 degree of freedom at 5% level is 15.507 (Table 6.45). This shows that the attitude of growers towards the 'regular market' is significantly different among regions.

13. Malpractice

While analysing the data in terms of malpractices of marketing co-operatives in coconut marketing, it has been found that most of the co-operatives are doing malpractices while collecting coconut (Table 6.46).

Table 6.46: Opinion of growers regarding the malpractices of Co-operatives

Factors	South	Central	North	Total
Never	91 *(62)*	56 *(37)*	43 *(29)*	190 *(42)*
Rarely	26 *(17)*	81 *(54)*	35 *(23)*	142 *(32)*
Often	14 *(9)*	13 *(9)*	36 *(24)*	63 *(14)*
Frequently	8 *(5)*	Nil	27 *(18)*	35 *(8)*
Always	11 *(7)*	Nil	9 *(6)*	20 *(4)*
Total	150 *(100)*	150 *(100)*	150 *(100)*	450 *(100)*
Chi-square = 115.60 (Significant), d.f = 8, Table value at 0.05 = 15.507				

Note: Figures within parenthesis denotes percentage to total
Source: Survey data

42% of the growers responded the marketing co-operatives are 'never' doing malpractices while 32% responded that the co-operatives are 'rarely' doing malpractices. So it has been inferred that malpractices are very less in co-operatives when compared to private middlemen. Private middlemen are doing various types of malpractices while undertaking coconut marketing. They are deducting weight, false weight and measurement etc. The co-operatives are very perfect in these activities while doing the coconut marketing. But some exceptional cases have bee reported while the copra is being procured under PSS during the procurement period, 1999-2001. 4% of the growers responded that the co-operatives are 'always' doing malpractices; while according to 14% of the growers the co-operatives are doing malpractices 'very often'.

The attitudes of the growers in respect of malpractices of co-operatives are more or less similar among the regions except in the southern region, where 61% of the growers responded that the co-operatives never doing malpractices. While only 29% of the growers of northern region and

37% of the growers of central region have given this opinion. The differences of opinion among regions are tested with chi-square and the result arrived is 115.60 and the table value for 8 degrees of freedom at 5% level is 15.507 (Table 6.46), it has been found that there is significant differences among the regions in respect of the attitude of growers towards the malpractice of coconut marketing co-operatives.

14) Field Procurement

The field procurement is another important factor considered by the small growers while selecting a particular channel for coconut marketing. As mentioned in the previous chapters that the yield of the small growers are very less in quantity and it will not be economical for them to carry this to the marketing co-operatives. Hence the attitude of growers towards the field procurement is also been studied to analyse their views and the result are presented in the Table 6.47.

Table 6.47: Opinion of growers regarding field procurement of coconut

Factors	South	Central	North	Total
Always	Nil	Nil	Nil	Nil
Frequently	11 *(7)*	18 *(12)*	15 *(10)*	44 *(10)*
Often	49 *(33)*	30 *(20)*	40 *(27)*	119 *(26)*
Rarely	40 *(27)*	40 *(27)*	45 *(30)*	125 *(28)*
Never	50 *(33)*	62 *(41)*	50 *(33)*	162 *(36)*
Total	150 *(100)*	150 *(100)*	150 *(100)*	450 *(100)*
Chi-square = 12.25 (Not Significant), d.f = 8, Table value at 0.05 = 15.507				

Note: Figures within parenthesis denotes percentage to total
Source: Survey data

The Table shows that about 36% of the growers have the opinion that the societies 'never' undertake the field procurement. This opinion is more or less similar among the regions. 28% of the growers opined that their co-operatives are 'rarely' making the field procurement while 26% says that the co-operatives are making field procurement 'very often'. Only 10% of the growers answered that the co-operatives are frequently making field procurement. It is also observed from the survey that these types of societies are the societies affiliated to both the federations. No grower has answered for the question whether the co-operatives are always making field procurement. From the Table it can be concluded that the feelings of the growers among the regions are also more or less similar to the total opinion.

But when the differences of opinion among regions are tested with chi-square the result obtained is 12.25 and the table value for 8 degrees of freedom at 5% level is 15.507 (Table 6.47) shows that there is no significant difference among the regions in respect of the attitude of growers towards the field procurement of coconut by the co-operatives.

The analysis of the above fourteen factors shows that the attitude of growers towards the co-operatives among the regions are significantly different except for the factors 'Input supply' and 'Field procurement'. This will be clearer from the summary of result of the Chi-square test applied for the above fourteen factors, which is given in the Table 6.48.

Table 6.48: Summary of result of the Chi-square test (for fourteen factors)

Sl.No	Name of Factors	Calculated Chi-square value	Table value	Result
1	Price	67.07	15.507	Significant
2	Period of procurement	169.83	15.507	Significant
3	Waiting for the disposal	97.59	15.507	Significant
4	Weight and Measurement	22.73	15.507	Significant
5	Allowances Taken by the society	62.85	15.507	Significant
6	Nearness to field	49.39	15.507	Significant
7	Storage facility	29.09	15.507	Significant
8	Information and guidance	161.75	15.507	Significant
9	Discrimination	88.72	15.507	Significant
10	Dealings	21.36	15.507	Significant
11	Input Supply	12.79*	15.507	*Insignificant
12	Period of Procurement	63.04	15.507	Significant
13	Malpractices	115.60	15.507	Significant
14	Field procurement	12.25*	15.507	*Insignificant

Note: Degrees of freedom for all variables is 8
Source: Survey data

Growers show positive attitude only towards factors like Price, Weight and Measurement, Discrimination, Dealings and Malpractices. The remaining nine factors give no satisfaction to the respondents. This will be clearer from the attitude index given below.

Attitude Index:

For the purpose of objective analysis, the qualitative grading of the respondent growers is assigned values as explained earlier. The product of frequencies against each grading and the numerical value of the relevant

level of attitude for each factor are obtained. Then the sum of the products divided by the total of the frequencies of the relevant factors to arrive at the attitude index. The formula applied for the calculation of the index is

$$SIi = \frac{\Sigma Vi \times ni}{N} \text{ where,}$$

SIi = Attitude Index for the ith factor

Vi = Numerical value for a particular level of attitude for the ith factor.

ni = Number of respondents deriving the particular level of attitude for the ith factor.

N = Total number of respondents for that factor for all levels of attitude.

The indices calculated by applying the above formula is presented in Table 6.49.

Table 6.49: Factor-wise Attitude Index and their Ranks

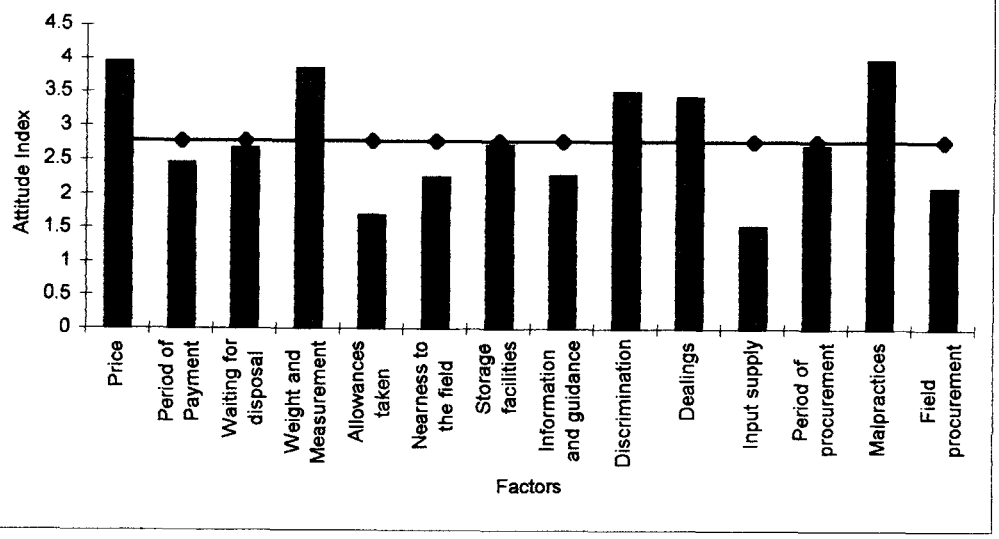
Sl. No.	Factors	Attitude Index	Rank
1.	Price	3.94	II
2.	Period of Payment	2.46	IX
3.	Waiting for disposal	2.67	VIII
4.	Weight and Measurement	3.85	III
5.	Allowances taken	1.69	XIII
6.	Nearness to the field	2.25	XI
7.	Storage facilities	2.73	VI
8.	Information and guidance	2.27	X
9.	Discrimination	3.50	IV
10.	Dealings	3.43	V
11.	Input supply	1.52	XIV
12.	Period of procurement	2.72	VII
13.	Malpractices	3.99	I
14.	Field procurement	2.10	XII

Note: Average index calculated is 2.79

Source: Computed from the Survey data

The average of the attitude index is calculated by averaging the sum of numerical values of the five levels of attitude. Thus average index is compared with the actual attitude index against each factor to highlight the factors that are of least positive attitude to the co-operatives societies. The average thus found out is 2.79. The factors whose attitude indices are less than 2.79 require immediate and special attention for corrective measures.

Fig. 6.6: Factor-wise Attitude Index



It is quite clear from the Fig. 6.6 and the Table 6.49 that nine factors i.e., Input supply, Allowances taken by the societies, Field procurement, Nearness to field, Information and guidance, period of payment, waiting for disposal, Period of procurement and Storage facilities have not reached up to the level of positive attitude expected by the respondents. So it requires special attention to succeed the marketing of coconut through co-operatives.

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Chapter VII

SUMMARY, CONCLUSIONS AND SUGGESTIONS

- *SUMMARY*
- *CONCLUSION*
- *SUGGESTIONS*

VII SUMMARY, CONCLUSIONS AND SUGGESTIONS

This chapter presents a brief summary of the main findings and the conclusions of the present study along with some important implications and suggestions for future research work.

Agriculture is the mainstay of Kerala's rural economy in view of its multifarious contributions to income and employment. The major part of the commercial crops such as Coconut, Rubber, Cocoa, and Cashew, Arecanut etc., produced in India comes from the Kerala state. Out of this, coconut plays an important role in Kerala's economy with coverage of nearly a lakh hector; it occupies 42 per cent of the net cropped area and provides livelihood for over 3.5 million families in Kerala.

Even though the state holds a virtual monopoly in the production of coconut, the marketing facilities available for this is very few and it is facing severe competition in the domestic as well as in the global market. One of the peculiar features of the Kerala's coconut sector is that it is cultivated in homestead land and most of the growers are tiny or marginal farmers. So the marketable surplus of the growers is small in quantity and it is not economical for them to bring the produce to the main market which is usually far from their places. Moreover, in Kerala there are no well set up markets for raw coconut. Coconut is being traded as copra in Kerala. This also prevents the growers from getting good price for their produce and thus increases their difficulties. These deficiencies of the coconut growers are exploited by the middlemen and they are taking considerable part of the value of produce from the growers.

Coconut marketing in Kerala is unorganized. The co-operative movement in Kerala is strong and deep-rooted as evident in the large

number of credit co-operatives successfully operating in the state. Considering the fact that most of the farmers are small and marginal, the need for co-operative marketing becomes more essential. Though it is proven that the existence of these societies bring much benefit to the farmers, the growth of the coconut marketing co-operatives has not been impressive due to many reasons.

A study is necessary to analyse the reasons for the coconut growers not depending upon the co-operative societies even though the societies have the advantages of organized marketing structure and to analyse the problems of coconut marketing agencies and coconut growers. The main purpose of this study is to examine whether the co-operative movement can rightly be described as a panacea for the ills of the coconut sector in Kerala and can provide a fair deal to the growers by way of reasonable return to their investment without creating much hardship to the consumers.

The primary objectives of this study are (1) to examine the present marketing practices of coconut in Kerala in general and the role of co-operative marketing societies in coconut marketing in particular. (2) to analyse the efficiency level and the factors influencing efficiency of the coconut marketing co-operative societies in Kerala. (3) to identify the market share of the co-operative sector in the coconut market of the state (4)to study the attitude of coconut grower members towards coconut marketing cooperatives and (5) to identify the problems of coconut marketing cooperatives and coconut grower members in Kerala.

The study is designed as an empirical one based on field-survey. It covers the cooperative societies which are undertaking coconut marketing in the whole of Kerala. Data were collected from both primary and secondary sources. Two groups of samples (coconut marketing cooperatives and coconut grower members) were selected. For the selection of coconut

marketing cooperatives, a multi stage random sampling techniques is adopted, while growers are selected randomly from the list given by the selected coconut marketing cooperatives. In order to analyse the coconut economy of India as well as Kerala, secondary data have been used extensively. For the analysis of efficiency structure of the societies an efficiency index has been prepared after studying the principles and techniques used by the various co-operative giants in India like Amul, Campco etc,. To study the differences of opinion of coconut growers towards the coconut marketing cooperatives, the statistical tool, chi square, was used. The informants were interviewed personally with the help of structured interview schedules.

In addition, the collected data were analysed by using appropriate statistical techniques such as ratios, percentages, averages, co-efficient of correlations, step-wise regression analyses, scheffe test, tests of significance like 't' test, 'F' test , chi square test etc, wherever necessary.

Coconut Sector in India

From 1995 to 2000 India ranks first in terms of the production of coconut in the world. After 2000 it fell down to the third position. Indonesia and Philippines rank first and second positions in terms of area and production. During 2000-01 India has a cultivated area of 1839.8 thousand hectors, which forms 15.61 per cent of the total cultivated area in the world, the production being 12597.3 million nuts, which accounted for 22.4 per cent of the world's production. India is also leading in the productivity of coconut; it has a productivity of 6846 nuts/hector from 18.4 lakh hectors. The major portion of the coconut production in the country comes from the states of Kerala, Karnataka and Maharashtra followed by the Eastern Coast Plains and hill regions comprising Andhra Pradesh, Orissa, Tamil Nadu and Pondicherry. Kerala's contribution to the total area is 53.4 per cent. There is a

tremendous growth record in the production of coconut in India. From the level of 3.28 billion nuts in 1950-51 to about 14 billion nuts in 2000-01, recording a growth rate of 3.1 per cent. The increase in the area of cultivation of coconut during the same period was nearly 12 million hectors with a growth rate of 2.45 per cent. But the overall improvement in productivity during these periods was far from satisfactory. About 50 per cent of coconut in India is consumed raw, while the remaining quantity is converted into copra to obtain coconut oil.

Coconut Economy of Kerala

Kerala is the major producer of coconut in the country. It is an important source of cash income supporting a large farming community accounting for nearly 15 per cent of the state income and 35 per cent of the agricultural income during the year 2000. It is the mainstay of the people with the entire fabric of the rural economy being closely woven around it.

The cultivation of coconut is spread through out the states. Out of the total cropped area in the state 30.81 per cent is utilized for coconut cultivation. Almost all the districts have coconut cultivation. Among the fourteen districts Kozhikode district with 131061 hectors of area of cultivation and 1059 million nuts of production, ranks first followed by Malappuram district with 107142 hectors and 717 million nuts and Kannur district with 95257 hectors of area and 515 million nuts of production (during 2000-'01). There is wide variation in the productivity of coconut among the different districts. The average productivity of coconut in the state during 1999-'00 recorded 6140 nuts/ha. Among the districts, the Kozhikode recorded highest productivity of 8080 nuts/ha. and the lowest productivity is recorded in the Waynad district with 2490 nuts/ha.

Coconut is essentially a small holder's crop in Kerala with the average size of holding as small as 0.25 hector. Out of 2.5 million coconut holdings

about 90 per cent of the holdings covering 60 per cent of the area under the crop are in marginal holdings not capable of supporting an average farm family.

Coconut Marketing:

Coconut marketing in general includes the marketing of raw coconut, copra, coconut oil and other value added products. But actually it refers to the marketing of copra and coconut oil only because the trading in raw coconut, tender coconut and other value added products are insignificant and not worth studying. In India, the entire production of coconut is consumed within the country. Of the total production of nuts in the country, 57 per cent is used as raw nuts and the rest is converted into copra. The coconut utilized for industrial exploitation is roughly 35 - 40 per cent and that consumed for food and beverage purpose is 55 - 60 per cent.

One of the distressing features of the coconut industry is its abnormal fluctuation in prices - both seasonal and cyclical. Such variations in prices make supply, management, demand satisfaction and optimum use of resources difficult. As coconut production in Kerala is a small farm enterprise, price variation affects the income of a large number of small cultivators and consequently their purchasing power.

There are four marketing channels prevalent in Kerala for coconut trading. They are:

1. Farmer - Copra maker - Oil miller -Consumer
2. Farmer - Oil miller - Consumer
3. Farmer - Commission agent - Upcountry consumer
4. Farmer - Co-operative society - KeraFed/Marketfed - Consumer

74 per cent of the coconut farmers in Kerala prefer the first channel, which poses the maximum problems from intermediaries. But very few

coconut farmers depend on the fourth channel, consisting of co-operative sector which give more share to them.

Foreign trade in coconut of India is very nominal. Export trade in coconut products is practically restricted to coir products. But India is importing coconut oil and coconut oil cake.

Organisational structure of coconut marketing co-operatives

Basically two types of cooperative organisation pattern are prevalent in the state. One is the unitary type and the other, federal. In the unitary type, the primary society does the business independently. But such type of coconut marketing cooperatives are very few in number, while under the federal structure, the primary coconut marketing co-operatives function as collection agents of the state marketing federations. They are simply procuring copra from the coconut growers when their apex bodies demand it.

In the state, there are two state marketing federations viz, Kerafed and Marketfed are functioning for the procurement, processing and marketing of coconut. This two apex federations, in turn, are affiliated to the National Agricultural Co-operative Marketing Federations (NAFED). The major product from the coconut is coconut oil which is marketed by the Kerafed in the name of 'Kera' and Marketfed in the name of 'Ashwathi'. The majority of primary coconut marketing societies are under the federal or two tier structure. Producers of agricultural commodities, small traders and the government constitute members of the marketing societies.

The analysis of the data shows that 90.44 per cent of the yield of coconut is available as marketable surplus. Out of this the market share of the State Marketing Federations' (here Kerafed and Marketfed) worked out to be a minimum of 4.11 per cent of the total marketable surplus of coconut in the state. When comparing to other middlemen, the market share of the

state federations is very nominal.

Coconut Marketing - Role of co-operatives

Co-operatives in the field of agriculture started during the last century. The major objectives of the marketing co-operatives in agricultural marketing were to eliminate the middlemen and supply credit, inputs and to help the farming community in getting remunerative prices to their agricultural produces.

Out of the 1700 co-operative societies, which include 1585 (Primary Agricultural Marketing Co-operatives) PACs and 115 General purpose marketing societies, only 1013 societies (59.6%) are affiliated to the state federations - Marketfed and Kerafed- and out of this only 205 societies (20%) are engaged in the coconut marketing activity. This does not mean that all the 205 societies are actively participating in the coconut marketing. Participation of such societies in the coconut marketing is very nominal. About 53 per cent of such societies entered in the coconut marketing activities only due to government pressure, 10 per cent procured coconut due to political reasons and only 37 per cent of the societies are undertaking coconut marketing out of their own interest. It is observed from the study that the (Service Co-operative Banks) SCBs which are undertaking coconut marketing come into the picture of coconut marketing only when there is copra procurement under the Price Support Scheme (PSS).

The copra procurement, support price and the market price shows a positive relationship but the relationship between quantity of copra procured and the market price is negative. The same relationship can be found between the number of growers who supplied coconut to the societies and support price and market price.

Only 10.4 per cent of the societies are procuring nuts as owners, the remaining societies procure nuts for their apex bodies by acting as

commission agent. But 50 per cent of the societies which are affiliated to both the federations are procuring nuts as owners.

Most of the coconut growers in the state prefer on-farm sales rather than off-farm sales. 93.4 per cent of the societies are not doing field procurement. Only one sample society (3.3%) is doing field procurement 'always'. Similarly, 30 per cent of the societies are procuring raw coconut and the remaining societies procure only copra. There are different methods adopted for the raw coconut procurement. Important among them are 'Cutting and Weighing', 'On the basis of Sample' and 'On the basis of Weight with water'. Out of this, 91 per cent of the societies are adopting the first method. Different pricing methods are also followed for the raw coconut. Most of the societies fix prices on the basis of the prevailing market price of coconut or coconut oil (current news paper rate).

Very few societies are processing the collected coconut. 23 per cent of the societies are undertaking the primary processing of converting raw coconut into copra, while 14 per cent of the societies undertake the secondary processing. 63 per cent of the societies have no processing facilities. They are simply collecting the copra from the growers and supplying it to their apex federations. The societies affiliated to both the federations have sufficient processing facilities. Most of the Kerafed societies are not going for the coconut processing.

An analysis of the storage facilities owned by the co-operative societies shows that all the societies are facing severe shortage of storage facilities, especially the societies affiliated to the Kerafed. The societies affiliated to the Marketfed and both the federations (Kerafed and Marketfed) are having sufficient storage facilities, still these societies also faces the problem of shortage of storage facilities during the massive procurement operations under PSS. The average storage capacity owned by a Kerafed

affiliated society is worked out to be 67.94 MT and the Marketfed affiliated society is 226.3 MT, but the average storage capacity of the society affiliated to both the federations is only 87.63 MT. The average storage requirement of a Kerafed affiliated society is 102.18 MT and the Marketfed affiliated society is 233.3 MT while that of the society affiliated to both the federations is 94.82 MT. The survey analyses that there is great differences in the requirement and availability of godown facilities. All the sample societies have shortage of storage facilities, especially the societies affiliated to Kerafed.

Only 14 per cent of the total societies process the collected produce in their own mill and market the value added products in the local market. It shows that very limited number of societies, one each from Kerafed and Marketfed (5.5% and 17% respectively of the affiliated societies), are undertaking the real kind of coconut marketing. Societies affiliated to both the apex bodies are leading (about 33%) in this kind of business. These societies are general agricultural produce marketing co-operatives and they have efficient system of processing and marketing.

With regard to the transportation facilities, the survey reveals that less than 10 per cent of the societies own transport facility for marketing their produce. The marketing co-operatives pointed out this as another reason for the poor performance of coconut marketing.

It is also inferred from the study that more than 50 per cent of the societies are undertaking the coconut procurement only for a period of 'below six months' in a year and the quantity procured by these societies are very nominal. These societies are hence not serious in the coconut procurement. The survey shows that about 67 per cent of the societies are making ready payment for the produce. When comparing societies among the affiliations with regard to the prompt payment the Marketfed societies stand below to other two affiliations. Majority of the Marketfed societies are

not financially strong enough to undertake the marketing operations on a large scale.

The coconut marketing is not fetching any profit to the co-operative societies. Only a quarter of the societies get nominal profit from this trade. The remaining societies run either at loss or stands at break even. But still the societies are sticking to this field only to protect the co-operative spirit.

During 1999-'00 the Nafed had procured as much as 85,000 tonnes of copra. Yet it did not achieve its objective of raising the market price of coconut. Instead, coconut became cheaper and the grower poorer.

The analyses made on the data reveals that only 6.78 per cent of the marketable surplus of coconut is handled by the primary level marketing societies. Since the state level marketing federations procure nuts from these primary marketing societies. The marketable share of primary societies consists of their own share and that of the state marketing federations. The detailed analysis further reveals that about $3/4^{th}$ of the market share of coconut under co-operative sector are contributed by the primary level marketing societies. The remaining part ($1/4^{th}$) is only contributed by the state marketing federations.

Efficiency structure of coconut marketing societies:

From the analysis of the efficiency structure of coconut co-operative marketing societies in Kerala, it can be inferred that (1) in general, the efficiency level of the coconut marketing societies in the state is above medium (2) when comparing the efficiency level of the societies among the different affiliations, it shows that; (a) there is significant differences in the level of efficiency of the coconut co-operative marketing societies affiliated to single apex societies (Kerafed or Marketfed) ;and both the apex bodies. (b) There is no significant difference between the level of efficiency of the coconut co-operative marketing societies affiliated to Kerafed and

Marketfed. (3) Within the affiliation types also (ie., Kerafed, Marketfed and Both), there is no uniformity in the efficiency level of societies.

When the regions and affiliations are taking together for measuring the differences in the efficiency level between the societies, the analysis shows that the regions and affiliations have no significant effect on the level of efficiency of the coconut marketing co-operatives in Kerala.

The overall study of efficiency structure of coconut marketing co-operatives reveals that about 80 per cent of the societies (societies affiliated to Kerafed and Marketfed) are having similar efficiency level. These societies achieved 30 to 35 per cent of the highest possible efficiency index (Efficiency Index 60). But the performance of these societies towards coconut marketing is found to be very poor. Only 20 per cent of the societies (societies affiliated to both Kerafed and Marketfed) have achieved about 75 per cent of the maximum efficiency level. These societies have taken the coconut marketing seriously. So it can be concluded that even though the general marketing societies and PACS in Kerala are efficient enough to undertake coconut marketing activities, they are reluctant to do this because of many reasons.

Problems of Co-operative Marketing in Coconut

The coconut sector faces many problems right from cultivation to marketing. The marketing problems like unprecedented fluctuations in the market price of coconut, competition from the other middlemen, high marketing costs etc. makes it the most acute among the problems. Therefore, this area needs the greatest care and possible solution.

Some marketing problems are external i.e. the problems which results from factors beyond the control of the societies and some other problems are internal which can be solved by the society itself.

Problems of co-operative marketing societies

The study shows that the existence of co-operative sector in the coconut marketing in Kerala is very nominal. The co-operative societies which are serious in coconut marketing find it difficult to get enough quantity of copra from the farmers. Because of the inadequacy of staff, transportation facilities and buying copra instead of raw coconut by the societies, it was not able to attract coconut farmers.

The co-operative societies were not able to procure the coconut continuously because of reasons such as shortage of storage facilities, lack of funds and improper lifting of copra by the apex bodies from the society's godown etc,. it is observed that about 70 per cent of the societies stopped procurement of coconut at least once during the year 2000-'01, but it was only 80 per cent during 1999-'00, during which the highest procurement of coconut was recorded in the state. The societies stoppage of procurement showed a decreasing trend during 1996-'97, 1997-'98 and 1998-'99

The marketing societies could not undertake processing activities because of the shortage of fund, labour and other infrastructural facilities. Finding suitable market for the processed products also poses problems to the societies. Primary processing requires large area of grounds, dryers, labour etc, which most of the societies lacks. Similarly, secondary processing requires production units and market support which the societies failed to arrange themselves.

The marketing problems of the primary coconut marketing societies are: High marketing cost, competition from private traders, lack of government support etc

The copra procurement under PSS also creates a lot of problems and difficulties to the coconut co-operatives. The conditions imposed by the apex bodies on the quality of the product, packing procedures, storage of stocks,

delivery of stock, stock at procurement centre, payment of the proceeds etc, are very difficult to follow for the coconut marketing societies. The transportation allowances and allowances for the incidental expenses are insufficient. The apex bodies rejected the copra load of the societies several times. The analysis shows that most of the societies which have undertaken coconut procurement legally suffered huge loss. The coconut marketing societies are not at all satisfied over the approach of the apex bodies.

The existing coconut processing and marketing societies suffer from lack of sufficient funds, absence of linkage between service co-operative societies and marketing societies, on one hand, and between the primary marketing societies and the apex federation, on the other, violent price fluctuations in the market, bad management and absence of committed leadership.

lack of infrastructure facilities like processing facilities, storage, transportation and shortage of fund and lack of staff are the important reasons pointed out by most of the co-operatives for not undertaking field procurement, raw coconut procurement etc.,

Coconut Grower Members - a Profile

Coconut is the most popular crop cultivated by the largest number of household in Kerala. 45 lakh out of 55 lakh households in Kerala cultivate at least on coconut palm. Another peculiarity of the coconut cultivation in Kerala is that about 97.5 per cent of the coconut holdings are marginal and small, only 2.5 per cent have more than 2 hectors of coconut field. The survey shows that 91.5 per cent of the coconut farmers are small farmers. The state average of coconut holdings is far less than the sample data. So it shows that only the coconut farmers who have large holdings depend on the co-operative marketing societies for disposing their marketable surplus. The region-wise analysis of the coconut growers reveals that the coconut

growers belonging to northern region have the highest coconut holdings.

An analysis of the utilisation pattern of nuts showed that the marketable surplus of coconut is 90.44 per cent of the total number of nuts harvested. The rest of the production is used for consumption (2.36%) and other purposes (7.2%). After harvesting, most of the farmers (62%) sell the produce to the market without undergoing any processing activity. About 36.5 per cent of the farmers are found to undertake the primary processing of raw coconut into copra. But in general the raw coconut selling is the practice prevailing in the state. About 80 to 85 per cent of the farmers resort to this kind of selling. Only 1.5 per cent of the farmers are doing any kind of secondary processing.

About 80 per cent of the farmers choose to go in for on-farm sales. A comparison of large and small farmers shows that the tendency of on-farm sale is high among the small farmers (82.6%) as compared to large farmers (68.3%). Between the regions, the southern region is more inclined to on-farm sales (83.3%). The most cited reason by the farmers for this kind of selling is 'convenience'. The farmers have no time to spend for carrying the produce to the market. It is observed that 70 per cent of the farmers sell their produce immediately after harvesting irrespective of change in the market price. 93 per cent of the farmers of southern region, 50 per cent of the central region and 66 per cent of the northern region sell their produce without waiting for a better price for the produce. There is a practice of selling before harvesting in the central and northern region. Only less than 10 per cent of the farmers wait for better market price.

No coconut farmers in the state depend on the co-operative society to dispose their entire marketable surplus. The study reveals that 54 per cent of the farmers sell only 25 per cent and the remaining farmers dispose 25 to 50 per cent of their marketable surplus to the co-operatives, that too only when

the market price is less than the support price. The remaining farmers depend mostly on private vendors for disposing their produce. Only less than 5 per cent of the farmers depend on the other marketing channels like household, coconut oil mill owners etc,. The distributions of marketing channels are more or less equal among the regions. But between the two types of farmers it is different. About 76 per cent of the small farmers preferred private vendors while only 46 per cent of the large farmers sold to private vendors. This reveals that the advantages from the co-operative sector are grabbed mainly by the large farmers. The better market price, field procurement, procurement of raw coconut etc, are the criterion adopted by farmers for choosing a buyer. The over dependence of private vendors by the coconut farmers is mainly because of the field procurement of raw coconut and the regular payment and market offered by the private vendors. More over the rates of allowances taken by the private vendors are less than the quantity taken by the co-operatives. The societies of northern region take more allowances as compared to central and southern regions.

49 per cent of the farmers under the study say that they depend on co-operative societies for disposing their produce only when the society gives better market price. Only 18 per cent depend on the society 'always' and the remaining farmers depends either 'rarely' or 'never'. The frequent rejection of produce by the societies is the main reasons pointed out by the farmers for not choosing the co-operative societies as the buyer.

More farmers have supplied their produce during the first 3 years of the survey period. But at the same time only 30 per cent of the farmers depend on co-operative societies for a continuous 5 years. This shows that during the last period of the survey there was a sudden fall in the market price and the co-operatives in the state actively participated in the coconut procurement under PSS. All the above discussions reveal that only a very

nominal number of coconut farmers depend on the co-operative societies for disposing their produce; that too only at the time of decreasing rate of market price of coconut.

Problems of Grower Members

The coconut growers in Kerala are not organised. These growers are forced to sell their produce to the middlemen because of circumstantial pressures. The private traders who advance money to the farmers make the poor and unorganised coconut farmers fall into their clutches and exploit them in all possible ways. About 81 per cent of the marketable surplus is sold to such private middlemen by the farmers at their farm gate.

The produce of the small farmers are non-viable in size for processing and marketing. Lack of access to post-harvest operations, credit and weak bargaining power to dispose the produce at fair prices are other problems of farmers. About 79 per cent of the growers do not have storage facility and so they are compelled to sell their produce immediately after harvesting at the prevailing market price.

The farmers have no access to the processing facilities. Less than 10 per cent of the farmers are doing any processing activity. Such farmers also have no access to the requisite working capital to stock copra for demand-supply adjustment. The kilns owned by the farmers are not designed properly. Hence they result in over smoked copra which leads to reduction in the price of copra. The copra moisture determination is not scientific and this leads to arbitrary deduction in setting the price for copra.

The instability in coconut oil prices and the consequent instability in copra and coconut prices pose serious problems to the coconut farmers. The prices of coconut and its products, particularly fresh nuts and copra are normally governed by the prices of coconut oil in the terminal market. This

process results in unauthorised interference of private middlemen in the price fixation of coconut.

Grower Members attitude towards coconut marketing co-operative societies

The study has analysed the farmers' attitude towards the functioning of coconut marketing societies in Kerala. The application of chi-square test shows that the attitude of growers towards the co-operative societies among the regions is significantly different except for the variables 'Input supply' and 'Field procurement'. The attitude of farmers towards these two variables is almost the same between the regions.

An attitude index is formed for the purpose of quantifying the variable to know whether the attitude of farmers towards co-operative societies is positive or not. For the purpose of comparison the average of the attitude index is calculated, which is 2.79. This shows that nine out of fourteen variables viz, 'Input supply', 'Allowances taken by the societies', Field procurement', 'Nearness to field', 'Provision of information and guidance', 'Period of payment', 'Waiting for disposal', 'Period of procurement' and 'Storage facilities' have not reached up to the level of positive attitude expected by the respondents. So it requires special attention to achieve maximum success in the marketing of coconut through the co-operative societies. Most of the farmers answered positively (positive attitude) towards the variables like 'Minimum level of malpractice', 'Price offered by the societies', 'Weight and measurement', 'Discrimination' shown by the societies and Dealings of the societies.

Conclusion

All these findings lead to the conclusion that the co-operative system has been beneficial to the coconut marketing, but the present structure of co-operatives for coconut marketing in the Kerala state could not play any

significant role in the coconut marketing of the state. Only 1.7 per cent of the primary level co-operative societies are is carrying out the real coconut marketing in the state. The remaining primary level societies are acting as collection agents of the apex bodies. Most of the time they are procuring nuts for the Nafed and some times to their apex bodies-Kerafed and Marketfed. It was also interesting to note from the study of efficiency structure of co-operatives that the Service Co-operative Banks (SCB) which have undertaken coconut trading during the survey period are efficient enough to continue coconut trade but they are presently doing the coconut trade only because of the pressure from the government or public. Moreover, their coconut trade comprises only the coconut procurement for the apex bodies as a commission agent during the price support scheme. They are not making any primary or secondary processing on coconut. But at the same time the co-operatives set up exclusively for agricultural product marketing in the state are inefficient and they are running at huge losses also. So, it is understood that a society which is set up for exclusive agricultural marketing activities could not survive in the market with its single activity, the reason is that the agricultural produce, especially the coconut shows wide fluctuation in their market price through out the year irrespective of seasons and one could not predict its price in the market.

The coconut growers of Kerala have no policies and principles for marketing their produce. Their choice of buyers depends upon the factors like better market price, field procurement, immediate payment of cash etc, but none of these variables can be offered by the co-operative sector. So it is very difficult for them to withstand against the private vendors who were not controlled by any principles, policies etc,. The private vendors can take any quantity of coconut, they can offer any price for the product, can make field procurement etc,. The study shows that the co-operatives can buy the coconut only when there is procurement operation supported by the Central

government under (Minimum Support Price) MSP. The coconut growers depend on co-operatives under this situation only because they are getting higher prices than those from the open market. But the real coconut farmers in the state are not getting the benefit of support price during these situations. Here also the middlemen or the society personnel are grabbing the major chunk of the scheme by misappropriation and undue influence.

More over the market share possessed by the co-operative sector in the coconut market is as low as 6.78%. To improve the role played by the co-operative sector in the coconut marketing, both the operational and structural efficiency of the primary level co-operative societies have to be stepped up. The relationship between the coconut growers, primary co-operative societies and apex bodies has to be further strengthened in order to increase the operational efficiency of each and every rung of the co-operative ladder. The structural aspects which give permanency and progress to the coconut industry can be improved by adequate supply of coconut, imparting information on modern coconut processing and innovations to the co-operatives and creation of basic infrastructural facilities for the development of coconut sector. The analysis made on the basis of primary and secondary data reveals that most of the societies which are engaged in the coconut marketing activities are found to have concentrated their attention and spent their energy on the banking and other aspects which gives more profit and less risk to them but have forgotten the operational aspects as well as the structural aspects mentioned above, which together make the development of coconut sector healthy. Hence a revamping of the present style of functioning of the societies and apex bodies are necessary for the overall development of the coconut industry. The suggestions given below might go a long way in this direction.

Suggestions:

1. Form exclusive agricultural marketing and processing co-operative societies in the village or block level and which should undertake the marketing and processing of the main agricultural produce which are produced in the respective regions. Then such societies must act as a collection point for those agricultural produce which have less importance in the region and transport it to the main centers, so that coconut produced in every regions of the Kerala state get the co-operative participations in their marketing and processing activities. These societies must endeavor to enlarge the number of members irrespective of class, community or political considerations and insist on getting the active participation of as many members as possible in the coconut production programme. To attain the latter, societies should strictly adhere to the rules regarding the minimum number of days a member has to supply coconut to the society for retaining his membership. Societies must also gives strict directions to the growers that the coconut or copra of those growers who follow the above conditions only will be collected under the Minimum Support Scheme of the Central government, when there is a sudden fall in the market price, so that the societies can ensure the continuous supply of coconut by the growers.

2. If a carefully operated supply management system is implemented in the co-operative sector it will help farmers to have a regular assured market with better stabilised market rate by which crisis due to steep price fall etc, can be avoided. To maintain buffer stock, sufficient working capital should be made available to the co-operatives. If the co-operatives are strengthened and their marketing activities are streamlined and coordinated properly towards implementing efficient demand supply

management system no formal Price Support Scheme/Market Intervention Scheme by the Government will be required as the price stabilization at reasonable level will automatically come.

3. To have some impact on the stabilization of the agricultural prices and to give maximum advantage to the cultivators at least 30 per cent of the marketable surplus will have to be handled by the marketing cooperatives. At present it is only below 7 per cent of the total nuts produced. The volume of trade handled by the Co-operatives has to be stepped up in order to have effective control on the market sentiments.

4. In order to achieve this target the existing societies, especially the General Purpose Marketing Societies, will have to be revitalized and their share capital base strengthened. The required working capital could be made available from the district co-operative banks. The assistance by way of money available from the National Co-operative Development Corporation (NCDC) could also be utilized. The societies should diversify their activities and take up distribution of consumer articles in rural areas and also deal in fertiliser and other inputs.

5. Most of the societies working in the present structure of coconut marketing are in the habit of rejecting the coconut brought by the coconut growers, especially when the coconut is procured under MSP. This creates a lot of difficulties and inconvenience to many grower members. Societies are constrained to reject the produce on account of the shortage of storage facilities and untimely lifting of the coconut by the apex bodies. In order to relieve both the members and the societies from this unpleasant situation, two alternatives seem possible; (a) societies should be provided with storage facilities either owned or rented. Rented storage facilities are advisable because such situations will come only when there is unprecedented fall in the market price (b)

the apex bodies must make it obligatory on their part to procure the entire produce collected by the primary societies without going for the strict quality control measurement. For those quantum of copra brought by the societies which are inferior in quality can be taken after making some deductions in the price and the copra load should not be returned under any circumstances.

6. The practices often followed by societies in fixing the prices of coconut seems detrimental to the interests of growers since the societies do not take into consideration the changing costs of production. They are blindly following the news paper rate of the coconut or coconut oil for fixing the prices. For fixing the remunerative price for coconut the societies in Kerala can follow the methods adopted by the "Malanad Karshaka Sahakarana Sangam" at Thiruvambady, Kozhikode.

7. Complaints from growers concerning measurement and quality testing of copra are common. The hardship experienced by growers in this regard has to be ameliorated by taking steps at the society and apex body level. Effective communication channels have to be established between growers and apex level institutions so as to enable the farmer to lodge their complaints / grievances freely and frankly with the latter.

8. Co-operative is a democratic organization. So its effectiveness depends upon the quality of its leadership. There should be no interference from the politicians and the Government in the day-to-day activities of the cooperatives. The leadership should have vision and commitment. The honorary Directors of the co-operatives must be experts in agriculture but they may not be experts in marketing. So the Board of Directors should be assisted by the efficient, trained and full time managerial as well as other administrative staff. The professionalism in management in the co-operatives is very essential. The principle of co-operative business

requires the participation of the members in the business of their co-operatives with committed leadership, professional management and enlightened members can handle the marketing problems of coconut and its products very efficiently

9. Coconut Development Board should make more funds available for assisting co-operatives in setting up driers in Kerala where there is a longer rainy season, to help increase copra production during rainy season when sun drying is not possible on all days. This will reduce the gap between the quantity of copra produced during season and lean season by which price fluctuation between season and lean season can be reduced. In the production and marketing of coconut oil also the role of cooperative sector should be strengthened. Small oil mills may not be viable as the production cost per unit oil produced may be high. High quality maintenance may not also be possible. All this will affect their marketing in competing with big private processors. So the units set up in the co-operative sector should be with higher production capacity. Necessary financial and technical assistance should be made available by the Government, National Co-operative Development Corporation, Coconut Development Board, etc.

10. With regard to the diversification of products co-operatives are usually reluctant to take up production of new products which are not much popular, because of the risk involved to divert their limited resources for a new product, the marketability and the net return of which are not ensured or not much known. Investment for popularizing a new product may not be viable for a co-operative having limited resources. So the government and the organizations like Coconut Development Board have to extend assistance for popularizing new product and in overcoming the initial difficulties. Providing subsidy by the government

or organizations like Coconut Development Board for this purpose in the initial stages may also be thought of. Sufficient working capital and know-how should be made available to them.

11. The government is now making efforts to make the farmers realize that fixing of support price and procurement activities are not the real solutions for the crisis in the coconut industry, but adopting efficient product utilization at the on-farm and community levels is the viable strategy for getting reasonable price for their produce. So more and more co-operatives should come forward to set up the processing units to promote diversification in coconut product. The activities of the co-operatives should not be confined to copra procurement alone. The co-operatives should develop facilities for procuring coconut, converting them into copra and for production of the coconut based products

12. Experience has shown that the process of procurement of copra by the co-operative societies has failed to yield the desired results. At present the real beneficiaries of the copra procurement policy of the co-operatives were the copra traders and not coconut growers. So the co-operative societies in the state must procure coconut instead of copra to ensure that the procurement benefits reach the coconut growers.

13. Irregularities in the copra procurement by the co-operatives under MSP, which deny the grower his legitimate benefits, could be avoided to an extent if purchase advisory committees comprising growers' representatives, officials and peoples' representatives are set up in cooperatives societies to monitor the purchases. The procurement exercise could also be made transparent by publishing periodically lists of the copra purchased from the farmers.

14. Coconuts could be procured through coconut committees formed by the agricultural department. Processing centers could be set up in all blocks

as a long term measure to help the growers get good returns. These centers could be made use of to convert coconut into copra which the Nafed could procure.

15. The analysis of the performance efficiency of societies given in Chapter V shows that the level of efficiency of societies is above the medium and that it varies from society to society and from region to region. But the performance of co-operative societies in the coconut marketing is seemed to be not at all satisfactory. The main reason for this is the lack of farmer orientation among the members and the loose and voluntary relationship existing between societies and the respective apex federations. So as a means to improve the performance of societies, the voluntary nature of relationship has to make obligatory. This will help the societies to secure the guidance of apex societies which in turn will gain the privilege of supervising and directing the activities of societies. Mutual obligations will enable societies to shunt their excess collection of coconut to the apex society and the apex society will be bound to receive it. Apex society can also open pooling centers to collect coconut from interior rural areas.

16. The price of coconut has to be kept at a level that the common man can afford. A spurt in coconut price could trigger a rise in prices of coconut oil. This may turn counter-productive for the growers in the long run as the buyers may turn to cheaper oil for his daily needs.

17. Another alternative observed during the study is, instead of going for the present co-operative structure of co-operative marketing it is advisable to form self-help groups comprising of not more than 25 member growers residing nearby in a village. So that the coconut procurement and its further processing can be centralized and can make a good and stable return from the product by avoiding middlemen from the channel. while

forming such groups no considerations will be given for the size of holdings, caste, creed, religion etc,

18. The government should provide the market information and other financial and management assistance to these 'self-help groups' so that it can be assured that the single penny spent for the coconut development are reaching to the real beneficiaries.

Lastly it makes some indications of further areas of research findings. The present study is undertaken with some special objectives. Therefore, all the aspects relating to the area are not covered here. The co-operative marketing of coconut in Kerala requires a study in depth on many more aspects. The following are some of the areas suggested for further research.

- Coconut marketing under co-operative sector in Kerala is mainly handled by the two apex federations - Marketfed and Kerafed. The present study reveals that these two federations can handle only 4.11 per cent of the total marketable surplus of coconut in the state. Moreover they are using only less than 15 per cent of their processing capacities. Similarly there are wide disparities in the expected and actual procurement of copra by the federations. So their performance efficiency may be studied in detail to know the deficiencies in the management of the federations in general and marketing structure and policies in particular.
- The study also shows that only 7.8 per cent of the affiliated PACS and 71.3 per cent of the General Purpose Marketing Societies are actively engaged in the coconut marketing activities in Kerala. So a further study may also be made to know the reasons for not participating actively in the coconut trade.

APPENDICES

APPENDIX I

INTERVIEW SCHEDULE FOR CO-OP. COCONUT MARKETING SOCIETIES

Regn. Code:
Society Code:
Date of Interview:

A. General Information

1. Name :
2. Registration number of the society :
3. Date of Commencement of Business :
4. Whether affiliated to any apex body : Kerafed☐ Marketfed☐ Both☐ No Registration☐
5. Area of operation of the society :
6. Nature of activity :

a. Purely a banking society ☐ b. Purely a marketing society ☐

c. Banking and marketing society☐ d. Production and marketing society ☐

e. Any other _____

7. What is the primary objective of the society?
8. What is the constitution of membership :

	A Class	B Class	C Class	Govt.
At the time of establishment				
At present				

9. What is the constitution of the B/D?

	Govt. nominee	Society Rep.	Members	Others
At the time of establishment				
At present				

10. What are the functions the society is entitled to do as per its bye-law?: a) Banking ☐ b) Consumer store ☐ c) Agri. market☐ d). All ☐ e) Any Other_____

11. What are the functions the society is actually performing now? a) Banking ☐ b) Consumer store ☐ c) Agri. market ☐ d) All e) Any other_____

12 Are you really interested in coconut marketing activity? Y/N

13. Under what circumstances you were entered in to the coconut marketing?:
a) Pressure from the government ☐
b) Proposal from the general meeting ☐
c) Political reason ☐

B. PROCUREMENT, STORING AND MARKETING

1. All members of the society are farmers Y/N
2. Are you procuring coconut/copra from growers only? Y/N
3. Copra \ coconut procurement details: (Qty. in '000 / tone)

Year	1996-'97	1997-'98	1998-'99	1999-'00	2000-'01
Quantity					
Avg. no. of growers					

4. Whether the society rejects, anytime, the copra / coconut brought by the members

1996-97	Always	Frequently	Often	Rarely
1997-98				
1998-99				
1999-00				
2000-01				

5. If rejects, state reasons:

a. When the godown is full		b. The quality of copra is inferior	
c. When the apex body stops procurement		d. others, specify	
e. When there is long queue			

6. Does the society exercise effective control over the quality of coconut (Copra)

Excellent	Good	Fair	Poor	Very poor

7. What is the expense per Qtl. / '000 of copra / coconut procurement?

1996-97	Below 100	100-150	150-200	200-250	Above 250
1997-98					
1998-99					
1999-00					
2000-01					

8. To whom you pay higher price for the coconut procured

Member growers	Others	Same price to both

9. Type of evidence demanding from the coconut growers while procuring coconut?

No evidence	Certificate from government officials	Certificate from directors	Any Other:

10. Do you have field procurement?

	Always	Frequently	Often	Rarely	Never
1996-97					
1997-98					
1998-99					
1999-00					
2000-01					

11. If not always, please rank the reasons according to priority:

a. Farmers supply only raw coconut		b. Quality cannot be maintained	
c .Lack of transport facilities		d. . inadequate staff	
e. Lack of fund		f. others, specify	

12. Which competitors do you have to face in the market?

Private vendors	Other societies	Others	No competition

13. Do you have any instruction from apex body for grading? Y/N

14. Do you grade the copra? : Yes/No

15. If no, is it because of

Inadequate staff		Lack of space	
Inadequate fund		Others	

16. Are you procuring raw coconut; Yes/No

17.If yes; a) What is the method of procurement ;

1.by cutting and weighing	2.on the basis of sample	3.On the basis of weight with water	4.Other:

b) Average price paid for 1) (price per kg); Rs. 2) (Price per number) Rs.

3) (Price per kg); Rs. 4)

18. Can you carry out the banking functions and copra procurement simultaneously? Y / N

19. If no, please rank the reasons according to priority;

a. inadequate staff		b. Lack of storage facility	
c .Lack of transport facilities		d. Lack of processing facility	
e. Lack of fund		f. Others specified	

20. How do you fix the price of the coconut/copra when the market price is higher than support price ?

Support price	Market price (paper rate)	Fixed by the apex body	Fixed by the management

21. Time taken for the payment to growers

same day	One week	Two weeks	one month	More than one month

22. Will the support price really benefit the growers? (Your opinion):

a) Fully		b) to a great extend	
c) to some extend		d) no benefit at all	

23. Are the growers satisfied with your price? (Your opinion):

a) Fully		b) to a great extend	
c) to some extend		d) no benefit at all	

24 When are you recording the procurement details in the books of accounts

Same day	next day	at the end of the week	

25. Purpose of the copra/coconut procurement

Own processing	Marketing	For the apex body

26. Have you ever stopped the procurement in any period: Yes/No
If yes, please rank the reasons according to the priority

a) non availability of copra		b) less demand of copra	
c) shortage of storage facilities		d) In adequate fund	
e) when the apex body fails to lift stock in proper time		f)when there is no procurement on support price	
g) lack of fund		h) others	

27. When did the supply of copra from growers increases

When production increases	When support price is higher than the market price	When market price increases

28. Revenue (commission) per quintal of copra/coconut ('000) procured.

below Rs. 50	50-100	50-100	100-150	150-200	Above 200

29. Time taken for getting fund from apex body for the copra procurement.

below one week	1-2 weeks	2-4 weeks	more than one month

30. What is your total storage capacity?

Year	In Tons	
	Requirement	Actual
1996-97		
1997-98		
1998-99		
1999-00		
2000-01		

31. Details of storage capacity:

Owned		Rented		Nil	

32. If you have excess storage capacity, how do you employ that space?

kept idle	using for some other purpose	letting to other societies	letting to other parties

33. How long have you been keeping copra after procurement.

less than 15 days	15-30 days	more than 30 days	More than two months

34. How many times the apex body rejects your copra load from the godown

less than two times	2 to 4 times	4 to 6 times	More than six times

35. Period of procurement in a year

less than three months	3 to 6 months	6 to 9 months	9 to 12 months

36. How long do you have to wait in the godown for unloading copra

Same day	Less than two days	Less than four days	More than four days

37. Are you satisfied the quality testing of copra by the apex body's officials

a) Fully		b) to a great extend	
c) to some extend		d) not at all	

38. Do you stop procurement only because of shortage of storage facility?

1996-97	Always	Frequently	Often	Rarely	Never
1997-98					
1998-99					
1999-00					
2000-01					

39. Do you have processing facility? Yes/No

40. If yes, what type of processing you do?

Raw coconut to copra	Coconut oil	Others:

41. If no processing of copra, please rank the reasons according to priority

a.Inadequate fund		b.Lack of staff	
c.Non-availability of coconut		d.Lack of demand for processed coconut	
e.Inadequacy of machine and equipment		f.High cost of processing	
g.Difficulties in the marketing		h.	

C. MEASUREMENT OF OPERATIONAL EFFICIENCY OF THE SOCIETY

GENERAL

Sl No.	Indicators of operational efficiency	Year	Weightage 5	4	3	2	1

1.Total membership of the society (in '00):

1996	Above 100	100-75	75-50	50-25	Below 25
1997					
1998					
1999					
2000					

2. Proportion of active members to total(in'00):

1996	Above 80	80-60	60-40	40-20	Below 20
1997					
1998					
1999					
2000					

3.Profit of the society(Rs. In lakhs)

1996	Above 15	15-10	10-05	05-0	Loss
1997					
1998					
1999					
2000					

4. What is the net worth of society (Rs. in lakhs)

1996	Above 25	25-20	20-15	15-10	Below 10
1997					
1998					
1999					
2000					

5. Storage facilities of the Society:

1996	Excellent	Very Good	Good	Poor	Very Poor
1997					
1998					
1999					
2000					

6. Provision of inducement to growers:

	Excellent	Very Good	Good	Poor	Very Poor
1996					
1997					
1998					
1999					
2000					

7. Do the society organize seminars discussion, classes, shows etc. for exposing coconut growers, to the latest years.

1996	Always	Frequentl	Fair	Rarely	Never
1997					
1998					
1999					
2000					

8. Does the society exercise effective control over the quality of coconut (Copra)

1996	Excellent	Good	Fair	Poor	Very poor
1997					
1998					
1999					
2000					

9. Average coconut/copra collection per day (In Nos./Qty):

1996	Above 600	400-600	200-400	100-200	Below 100
1997					
1998					
1999					
2000					

10. Whether the society procures entire quantity of coconut supplied by members:

1996	Always	Frequentl	Often	Rarely	Never
1997					
1998					
1999					
2000					

11. Profit from coconut \ copra trading: (Rs. in '000)

1996	Above150	150-100	100-50	50-0	Loss
1997					
1998					
1999					
2000					

12. What is the overhead cost of the society per kilo/No. of copra/coconut procured?

1996	Upto 5ps.	5-10	10-15	15-25	More than 25
1997					
1998					
1999					
2000					

(Please collect last five years financial data, P/L a/c and Balance Sheet)

D. FACTORS INFLUENCING THE OPERATIONAL EFFICIENCY OF SOCIETY

Sl. No.	Variable	Weightage				
		5	4	3	2	1

a) Input Supply

a. The society provide Fertilizer/manures etc

Always	Frequently	Often	Rarely	Never

b. The society provides storage facilities?

Always	Frequently	Often	Rarely	Never

c. The society provides marketing information to growers?

Always	Frequently	Often	Rarely	Never

d. The society provides pesticides or other means against pests and diseases?

Always	Frequently	Often	Rarely	Never

e. The society provides implements on hire?

Always	Frequently	Often	Rarely	Never

f. Any other services (specify):

Always	Frequently	Often	Rarely	Never

b) Infrastructure Facilities

a. You have godown facility

Own godown	Far from society	Arranging somewhere	Farmers godown	No godown

b. What is the distance from the society to the nearest market?

Within 10km	10-25	25-50	50-100	Above 100

c. What is the present condition of the oil content testing of copra

V. good	Good	Bad	V. bad	No facility

d. The nature of transport facility for transporting copra to apex body

V. good	Good	Bad	V. bad	No Transport

e. You have the facility to test the water content

V. good	Good	Bad	V. bad	No Transport

c) Link with the Apex Body (Kerafed/Marketfed)

a. The apex body procures the entire quantity of coconut supplied by the society?

Always	Frequently	Often	Rarely	Never

b. How many times the apex body rejects your copra load from the godown?

Never	Less than 2	5-2	8-5	More than 8

please give reasons for rejection:

c. How far the apex body's godown from your godown? (in Km)

Less than 25	25-50	50-100	100-150	More than 150

d. The apex body provide fertilizers/seed to society for distribution among members?

Always	Frequently	Often	Rarely	Never

e. The apex body arrange any coconut development programmes for the benefit of members

Always	Frequently	Often	Rarely	Never

f. The apex body arranges loans to members for cultivation of coconut tree

Always	Frequently	Often	Rarely	Never

g. Visiting intervals of the mobile team officials (of the apex body)

Every week	Once in two weeks	Every month	Once in two months	Not regular

h. You visit the apex body office for solving any common problems?

Always	Frequently	Often	Rarely	Never

i. Your representative in the apex body attend the union meetings regularly?

Always	Frequently	Often	Rarely	Never

j. Are you satisfied with the service rendered by apex body to the society

I) Fully		ii) to a great extend	
iii) to some extend		iv) not at all	

d) Attitude of Members

Sl. No.	Variable	Weightage				
		5	4	3	2	1

a. The members supply their marketable surplus of coconut to the society?

Always	Frequently	Often	Rarely	Never

b. The members attend the meetings regularly?

Always	Frequently	Often	Rarely	Never

c. The members try to solve their common problems in the meeting?

Always	Frequently	Often	Rarely	Never

d. The members react positively to the work done by the society for their benefit?

Always	Frequently	Often	Rarely	Never

e. You think that at any time members react with their political or other personal aims?

Never	Rarely	Often	Frequently	Always

e) Attitude of the Management

Sl. No.	Variable	Weightage				
		5	4	3	2	1

a. You think that the management takes effective care in the running of the society?

Always	Frequently	Often	Rarely	Never

b. How many times does the managing committee meet in a year?

More than 24	24-18	18-12	12-06	Below 06

c. You think that the management tries to bring problems to the notice of higher authorities?

Always	Frequently	Often	Rarely	Never

d. The members of the managing committee supply coconut to the society?

Always	Frequently	Often	Rarely	Never

e. How do you rate the efficiency of the present managing committee?

V. good	Good	Bad	V. bad	No building

f) Financial Assistance Received By The Society

Sl. No.	Variable	Weightage				
		5	4	3	2	1

a. Does the society face any financial difficulty?

Never	Rarely	Often	Frequently	Always

b. Does the society receive any assistance from the government for its running

Always	Frequently	Often	Rarely	Never

c. Does the society get any financial assistance from any financial agency for the construction of building, purchase of equipment etc.

Always	Frequently	Often	Rarely	Never

d. Do scarcity of finance result in stoppage of business?

Never	Rarely	Often	Frequently	Always

e. Does the society avail itself of various subsidies given by the government.

Always	Frequently	Often	Rarely	Never

g) Government Attitude Towards Coconut Co-Operatives

Sl. No.	Variable	Weightage				
		5	4	3	2	1

a. You think that the government policy of coconut development is helpful for the growth of societies?

Always	Frequently	Often	Rarely	Never

b. You get necessary help from the nearest government official connected with coconut development

Always	Frequently	Often	Rarely	Never

c. You get the help of the nearest government agriculture officer?

Always	Frequently	Often	Rarely	Never

d. You think that officials of the government departments work against the interest of producers?

Never	Rarely	Often	Frequently	Always

i. You think that Govt. policy on coconut marketing is sufficient? Y/ N

ii. You think that Kerafed / Marketfed are functioning as you expected? Y/N

iii. You think that Kerafed / Marketfed are serving the purpose for which it is constituted? Y / N

iv. Are you satisfied with the level of business (copra procurement) of your institution?

I) Fully		ii) to a great extend	
iii) to some extend		iv) not at all	

Please give three major problems faced by the societies while coconut marketing?

1.

2.

3.

Do you have any suggestion to remove such problems?

1

2

3

Any other points you wish to add
(Add operational Efficiency given below)

APPENDIX II
INTERVIEW SCHEDULE FOR COCONUT GROWERS
(Please put a tick mark (✓) against the correct answer)

No:
Area Code:
Date:

A. General Information

1.Name and Address :

2.Place : Southern/Central/ Northern Region

3.Family size : Below 4 ☐ 4 to 6 ☐ 6 to 8 ☐ 8 to 10 ☐ Above 10 ☐

4.Education of the head of the family.
No formal education ☐ Primary ☐
Secondary ☐ Collegiate☐

5.Occupation

Main		Subsidiary	
a. Agriculture		a. Agriculture	
b. Employment in government Semi-govt and pvt. Sector		b. Employment in government, semi-government and private sector	
c. Trade and business		c. Trade and business	
d. Others		d. Others	

6.Yearly average income of the family (Rs. in thousands)
a) Below 20 ☐ b) 20-40 ☐ c) 40-60 ☐ d) 60-80 ☐
e) 80-100 ☐ f)100-120 ☐ g)120-140 ☐
h) Above 140 ☐

B. Details of Farming:

1. Size of land holdings

a. Up to 0.5acre		b. 0.5 to 1 acre	
c. 1 to 1.5 acres		d. 1.5 to 2 acres	
e. 2 to 2.5 acres		f. 2.5 to 3 acres	
g. 3 to 3.5 acres		h. 3.5to 4 acres	
i. 4 to 4.5 acres		j. Above 4.5 acres	

2. Nature of farming
a. Single ☐ b. Mixed ☐

3. Area under cultivation (in acres):
a) Coconut: _____ b) Others _____ c) Idle ____

4. Whether inter crops affects coconut cultivation?
a. Favourable ☐ b. Unfavourable ☐ c. No affect ☐

5. Total number of coconut palm:
i) Bearing:
a. Below 50 ☐ b.50-100 ☐ c. 100-150 ☐
d.150-200 ☐ e. 200-250 ☐ f. 250-300 ☐
g. 300-350 ☐ h. 350-400 ☐ i. Above 400 ☐
ii) Non-bearing:
a. Below 15 ☐ b. 15-30 ☐ c. 30-45 ☐
d. 45-60 ☐ e. 60-75 ☐ f. 75-90 ☐
g. 90- 105 ☐ h. 105-120 ☐ i. Above 120 ☐

6. Irrigation facilities: Yes/No

7. What is the annual estimated expenditure per coconut tree ?
a. below 50 ☐ b. 50 - 100 ☐
c.100 – 150 ☐ d. above 150 ☐

8. Yield taking interval
a. Every month ☐ b. One and half month ☐
c. Two months ☐ d. Not regular ☐
d. Others: ☐

9. Total yield per harvest (number of coconut)
a. I n Season:
a) Below 500 ☐ b) 500-1000 ☐ c) 1000-1500 ☐
d) 1500-2000 ☐ e) 2000-2500 ☐ f) 2500 to 3000 ☐
g) 3000-3500 ☐ h) 3500-4000 ☐ i) Above 4000 ☐
b. In off Season :
a) Below 500 ☐ b) 500-1000 ☐ c) 1000-1500 ☐
d) 1500-2000 ☐ e) 2000-2500 ☐ f) 2500 to 3000 ☐
g) 3000-3500 ☐ h) 3500-4000 ☐ i) Above 4000 ☐

C. Consumption

1. Personal consumption (per month):
a. As raw coconut
a. Below 20 ☐ b. 20-40 ☐ c. 40-60 ☐
d. 60-80 ☐ e. 80-100 ☐ f. Above 100 ☐
b. For coconut oil
a. Below 20 ☐ b. 20-40 ☐ c. 40-60 ☐
d. 60-80 ☐ e. 80-100 ☐ f. Above 100 ☐

2. Do you purchase any edible oil? (With quantity)
a. No ☐ b.Vegetable Oil ☐ c. Palm oil ☐
d. Local or branded coconut oil ☐ e.Others

3. Why are you purchasing that oil
a. By custom & practice ☐ b. Convenient ☐
c. Good for health ☐ d. Cheap ☐
e. easy availability ☐ f. Others ☐

4. Edible oil consumption per month:
a. Less than 2 kg ☐ b. 2-4 kg ☐ c. 4-6 kg ☐
d. 6 - 8 kg ☐ e. more than 8kg ☐

D. Storage and Transportation

1. Do you have enough storage facilities? Yes / No
2. If yes, in what form you store?:
a. Raw coconut ☐ b. Copra ☐ c.any other:- ☐
3. If selling conditions are unfavourable, what time you retain the crops
a. No retention ☐ b. up to one month ☐
c. up to three month ☐ d. up to six month ☐
e. Till selling conditions are favourable ☐

4. If not retaining, why (Please rank the alternatives)?

a. Financial stringency		b. Fear of further price fall	
c. Stock deteriorate by keeping long time		Lack of storage facilities	
d. Others :			

5. Did you take the produce to buyer's premises in the last year? Yes / No / own processing

6. If yes, state the reasons
   a. No buyer approaches you ☐ b. You get higher price ☐
   c. Could not wait for buyer to arrive due to financial stringency ☐ d. You need other goods in exchange ☐
   e. Crop is already pledged ☐ f. Others ☐

E. MARKETING

1. In what form you sell the coconut?
   i. As tender coconut: a) Nil ☐ b) Below 25% ☐
   c) 25-50% ☐ d) 50-100% ☐
   ii. As coconut (%) : a) Nil ☐ b) Below 25% ☐
   c) 25-50% ☐ d) 50-100% ☐
   iii. As copra (%) a) Nil ☐ b) Below 25% ☐
   c) 25-50% ☐ d) 50-100% ☐

2. When do you dispose the yield?
   a. Immediately after harvesting ☐
   b. Selling before harvest ☐
   c. Wait for better market price ☐
   d. Others .....

3. Marketing channels used:

Channels	% of Coconut / copra disposed	Rate (in Rupees) per 1000/qtnl (last sales)
a. Co-op society		
b. House hold		
c. Private vendor		
d. Processing (own facility)		
e. Copra Mill		
f. Others		

4. Criteria for preferring a marketing channel (Rank the reasons according to priority)

Reasons	Rank	Reasons	Rank
a. Higher price		b. Less labour cost	
c. Regular payment		d. Field procurement	
e. Regular market		f. Nearness to field	
g. Fair practice		h. Free from formali	
i. better dealings			
j. Others			

5. If private parties are preferred is it due to? (Please rank reasons according to priority)

Reasons	Rank	Reasons	Rank
a. . When the society stops procurement		b. very easy to market	
c. No service of society in the area		d. . They takes raw coconut	
e. Dissatisfaction in society's formalities		f. They do field procurement	
g. Regular payment		h. Less labour cost	
i. Regular market		i. Others:	

6. The rate of allowances for loss in weight (water content, defective grade etc,.) (Kg. / Nos. per Qtl. / '000)

   a. Co-op. society: (in Kg.) / (in Nos.)

Nil	Below 2	2-4	4-6	6-8	Above 8

   b. other parties: (in Kg.)

Nil	Below 2	2-4	4-6	6-8	Above 8

   any other details:

7. Are you aware of the support price declared by the government from time to time? : Yes/No

8. If yes, are you satisfied with the price: Yes/No

9. If no, what are your suggestions?
   a. Support price should be Rs. ....
   b. (Reasons).....
   c. .....

F. Co-operative Societies

1. Whether member of coconut coop. Society: Yes/No

2. If yes, how long have you been a member?
   a) Below 2 years ☐ b) 2 to 5 years ☐
   c) 5 to 10 years ☐ d) above 10 years ☐

3. If no, please rank the reasons according to priority:

Reasons	Rank
a. No co-op. Society in the area	
b. Difficult to reach in the society	
c. No need of society's service	
d. Not regular in transactions	
e. Other _____	

4. Have you ever supply coconut / copra to the society? : Y/N

If yes, please give details for the following questions

5. When do you prefer the co-op. society as your buyer?
   a. Always ☐ b. Rarely ☐ c. Never ☐
   b. When they give higher price ☐

6 . Reasons for prefering the Co-op society as your buyer. (Please rank the reasons according to priority)

Reason	Rank	Reason	Rank
a. Give better price		b.Ready payment	
c. Correct weight and measurement		d.Nonavailability of other buyers	
e. Nearness to field		f.Others:	

7. How long are you been supplying coconut to the society?
a. Less than a year ☐ b. 1-3 years ☐
c. 3-5 years ☐ d. more than 5 years ☐

8. Number of times you supplied coconut / copra to the society in a year ?
a. Less than 2 month ☐ b. 2-5 months ☐
c. 5-8 months ☐ d. More than 8months ☐

9. Society rejects your produce any time?
a. Never ☐ b. Rarely ☐ c. Often ☐
d. Frequently ☐ e. Always ☐

10. Reasons for rejection
a. More water content ☐ b. fungus ☐c. immature ☐
d . lack of fund ☐ e. shortage of storage facility ☐
f. any other: ☐

11. Have you ever stopped coconut supply to the Society? Yes/N0

12. If yes, please state reasons? (Rank according to priority)

Reason	Rank	Reason	Rank
a. Always rejecting the stock		b. Unfair practice	
c. Delay in payment		d.Incorrect weight and measurement	
e. Prolonged waiting		f. Unnecessary charge for wastage	
g. They do not take rawcoconut		h.when the society stops procurement	
i. Less price		j. Others	

13. **Please give your opinion about the following features of the co-operative societies**

i. Price paid for your produce
a. Very high ☐ b. High ☐ c. Normal ☐
d. Low ☐ e. Very low ☐

ii. Payment
a. Advance ☐ b. Ready ☐ c. next day ☐
d. within one week ☐ e. more than one week☐

iii. Waiting for disposal
a. very quick ☐ b. Quick ☐ c. Normal ☐
d. Long waiting ☐ e. Very long waiting ☐

iv. Weight and measurement
a. Excellent ☐ b. Good ☐ c. Fair ☐
d. Poor ☐ e. Very Poor ☐

v. Deductions in weight.
a. Never ☐ b. Rarely ☐ c. Often ☐
d. Frequently ☐ e. Always ☐

vi. Nearness to field
a. Less than 2 kms ☐ b. 2-4 kms ☐ c. 4-6 kms ☐
d. 6-8 kms ☐ e. Above 8 kms ☐

vii. Storage facilities
a. Excess ☐ b. Sufficient ☐ c. Insufficient ☐
d. Very less ☐ e. No storage facility ☐

viii. Information and guidance:
a. Very good ☐ b. Good ☐ c. Bad ☐
d. Very bad ☐ e. No guidance ☐

ix. Discrimination
a. Never ☐ b. Rarely ☐ c. Often ☐
d. Frequently ☐ e. Always ☐

x. Dealings
a. Excellent ☐ b. V.Good ☐ c. Good ☐
d. Bad ☐ e. Very Bad ☐

xi. Input supply:
a. Excellent ☐ b. V.Good ☐ c. Good ☐
d. Bad ☐ e. Very Bad ☐

xii. Period of procurement in a year
a. > 9 months ☐ b. 9-7 months ☐
c. 7-5 months ☐ d. 5-3 months ☐e. < 3 months ☐

xiii. Mal practice:
a. Never ☐ b. Rarely ☐ c. Often ☐
d. Frequently ☐ e. Always ☐

xiv. Field procurement
a. Never ☐ b. Rarely ☐ c. Often ☐
d. Frequently ☐ e. Always ☐

Please mention three difficulties while disposing your marketable surplus to the society:

APPENDIX III

Test Procedure for Step-Wise Regression Analysis

Suppose $Y_t = B_0 + B_1 X_{it} + \ldots\ldots + B_k X_{kt}$ t= 1,2 ...n. i. There are K explanatory variables, considered for the explanation of Y and there are n sets of observation on these variables. The aim is to select a few of the explanatory variables, explaining Y in the sense that these variables are enough for the explanation of Y i.e, the effect of other explanatory variables are not significant (in statistical language)in the presence of those variables which are selected. This is done using s step-wise Regression procedure.

The procedure starts with identifying that explanatory variable having maximum correlation with Y and its importance in the explanation is measure through the percentage of variation explained. After adjusting the sample on Y variable for this explanation, the variable having the maximum correlation with Y, among the remaining explanatory variables is selected. Its importance is measured by obtaining the additional percentage of variation explained. Again, the variable that is entered earlier is considered and its importance is measured through the partial correlation with Y, keeping the effect of the variable just entered fixed. If this leads to a significant value, both the variables are retained in the regression, otherwise the variable is eliminated from regression. This procedure is repeated, until all the variables are exhausted and the final regression is obtained.

For doing this, the usual procedure of least square is used in obtaining the Regression Analysis of every stage.

APPENDIX IV

Scheffe Test

The rule that a comparison L is declared significant at the 5% level if L/s_L exceeds $t_{0.05}$ is recommended for any comparisons that the experiment was designed to make. Sometimes, in examining the treatment means, a combination which did not intend to test but which seems unexpectedly large. If construct the corresponding L, use of the t-test for testing L/s_L is invalid, selected L for testing solely because it looked large.

Scheffe has given a general method that provides a conservative test in this situation. Declare L/s_L significant only if it exceeds $\sqrt{(a-1)F_{0.05}}$, where $F_{0.05}$ is the 5% level of F degrees of freedom $f_1 = (a - 1)$, $f_2 = a(n - 1)$. In more complex experiments, f_2 is the number of error d.f. provided by the experiment. Scheffe's test agrees with the t-test when a=2, and requires a substantially higher value of L/s_L for significance when a>2. It allows us to test any number of comparisons, picked out by inspection, with the protection that the probability of finding any erroneous significant result is at most 0.05.

APPENDIX V

Price Movement in Coconut

Year	Price of Copra (Rs./Qtl.)	Price of Coconut without husk (Rs. / 000 nuts)*
1980	995 (----)	1327 (----)
1981	941 (-5.4)	1137 (-14.3)
1982	941 (0.00)	1265 (11.3)
1983	1362 (44.7)	1922 (51.9)
1984	2186 (60.5)	2745 (42.8)
1985	1300 (-40.5)	1652 (-39.9)
1986	1404 (8.0)	1850 (12.0)
1987	1966 (40.0)	2448 (32.3)
1988	2099 (6.8)	2718 (11.0)
1989	1595 (-24.0)	2115 (-22.2)
1990	1802 (13.0)	2410 (14.0)
1991	2682 (48.8)	3246 (34.70
1992	3055 (14.0)	3928 (21.0)
1993	2646 (-13.4)	3590 (-8.6)
1994	2188 (-17.3)	2939 (-18.1)
1995	2341 (7.0)	3104 (5.6)
1996	3007 (28.5)	3884 (25.1)
1997	3572 (18.8)	4707 (21.2)
1998	3020 (-15.4)	4208 (-10.6)
1999	3399 (12.6)	4950 (17.6)
2000	2102 (-38.2)	3353 (-32.3)

Source: Compiled from (1) The State Agricultural Prices Board, Tvm.

(2) Coconut Statistics, CDB, Kochi,(2001)

** Prices at Alappuzha Market*

Figures in Parentheses are % change over the previous year.

APPENDIX VI

Indices on Production & prices of Coconut / Copra (1980-81 to 1999-00)

Year	Production		Coconut
	Coconut	Copra	(Farm price)
1980-81	100.00	100.00	100.00
1981-82	99.93	97.21	82.14
1982-83	105.85	118.96	104.29
1983-84	86.50	183.26	175.00
1984-85	114.79	180.06	191.43
1985-86	112.27	139.67	105.00
1986-87	105.49	165.44	172.14
1987-88	111.04	201.34	197.86
1988-89	140.13	190.81	187.86
1989-90	144.88	175.46	145.71
1990-91	140.69	231.51	215.00
1991-92	154.29	296.23	280.71
1992-93	170.35	294.47	300.00
1993-94	172.61	249.69	232.86
1994-95	177.39	233.94	220.00
1995-96	171.38	276.24	236.43
1996-97	191.46	339.82	342.86
1997-98	173.21	NA	354.71
1998-99	170.62	NA	300.61
1999-00	188.83	NA	369.03

Source: Indian Coconut Journal, September 1999, p43

APPENDIX VII

Average Wholesale Price of Coconut Oil in the Important Coconut Markets of Kerala

Year	Kochi (Rs./qtl)	Kozhikode (Rs./qtl)	Alappuzha (Rs./qtl)
1980-81	1572	1570	1571
1981-82	1306	1312	1305
1982-83	1558	1560	1554
1983-84	2396	2387	2395
1984-85	3239	3216	3233
1985-86	1701	1698	1700
1986-87	2433	2430	2433
1987-88	3158	3080	3104
1988-89	3060	3047	3059
1989-90	2237	2331	2320
1990-91	2320	3029	3034
1991-92	4284	4325	4275
1992-93	4576	4665	4601
1993-94	3553	3735	3566
1994-95	3254	3431	3233
1995-96	3693	3842	3705
1996-97	4904	5054	4894
1997-98	4866	5020	4878
1998-99	4586	4728	4585
1999-00	5249	5469	5251
2000-01	3083	3315	3083

Source: Coconut Statistics, Coconut Development Board

APPENDIX VIII

Export of Other Coconut Products from India

Year	Dry Coconut		Desiccated Coconut		Coconut Shell Hukah		Coconut Shell Charcoal	
	Qtty. (in '000 nos.)	Value (Rs in Lacs.)	Qtty. (tons.)	Value (Rs. In Lacs.)	Qtty. (in '000 nos.)	Value (Rs. In Lacs.)	Qtty.(tons.)	Value (Rs. in Lacs.)
1980-81	NIL	NIL	--	--	54.83	12.47	930.60	11.31
1981-82	51.68	1.48	--	--	74.87	33.23	3.20	0.052
1982-83	18.00	0.38	--	--	171.00	20.03	NIL	NIL
1983-84	28.00	0.41	--	--	3.20	0.52	25.00	0.53
1984-85	9.00	0.80	--	--	12.27	2.24	99.00	3.12
1985-86	28.92	0.99	--	--	0.30	0.03	NIL	NIL
1986-87	3.00	0.10	--	--	2.00	0.27	NIL	NIL
1987-88	NIL	NIL	--	--	10.00	1.36	NIL	NIL
1988-89	3.69	0.14	--	--	NIL	NIL	0.50	0.046
1989-90	11.07	0.32	--	--	12.20	0.37	NIL	NIL
1990-91	NIL	NIL	--	--	NIL	NIL	NIL	NIL
1991-92	0.002 tons.	0.02	1.050	0.015	134.62	7.27	8.00	0.28
1992-93	7.93 tons.	0.59	16.650	1.45	20.00	4.35	109.00	3.20
1993-94	5.50 tons.	2.53	5.499	2.53	100.00	6.49	4565.59	85.11
1994-95	7.85 tons.	4.15	0.125	0.044	395.00	9.82	7713.90	176.45
1995-96	36.05 tons.	9.78	70.450	29.02	50.12	13.36	1179.30	22.50
1996-97	38.75 tons.	9.72	256.52	122.64	37.55 tons.	10.61	850.25	62.96
1997-98	83.87 tons.	33.51	134.69	69.86	0.23 tons.	10.00	422.06	43.34
1998-99	83.46 tons.	48.39	211.10	89.22	1.60 tons.	2.93	713.90	64.17
1999-00	174.92 tons.	52.79	209.35	98.26	43.20 tons.	17.31	3222.26	326.31

Source: Coconut Statistics, Coconut Development Board

APPENDIX IX

COCONUT CONVERSION TABLE (KERALA STATE)

(in Metric Tonnes of 1000 Kilos)

Coconut Products	Fresh Coconut meat	Copra	Coconut Oil	Copra Cake/Meal	Desiccated Coconut	Coconut Shell	Shell Char Coal	Shell Flour	Coconut Husk	Mastress Coir Fibre	Coir Bristle	Coir Dust & Shorts	Whole Nuts	Husked Nuts	Coconut Water	No. of nuts required
IMT Fresh Coconut Meat	1.000	0.550	0.347	0.190	0.540								3.800	3.300		3750
IMT Copra	1.810	1.000	0.640	0.290	0.960								9.900	3.950		6750
IMT Coconut Oil	2.900	1.595	1.000	0.550	1.480								15.800	6.250		10700
IMT Copra Cake/Meal	5.250	2.900	1.780	1.000	3.270								37.400	14.700		19300
IMT Desiccated Coconut	2.000	1.040	0.670	0.300	1.000								10.00	4.000		7250
IMT Coconut Shell						1.000	0.330	0.750					12.700	5.050		9000
IMT Shell Charcoal						3.000	1.000	2.270					39.000	12.000		27000
IMT Shell Flour						1.330	0.440	1.000					13.000	4.500		12000
IMT Coconut Husk									1.000	0.300	0.100	0.600	1.150			1200
IMT Matress Coir Fibre									3.330	1.000			4.000			5000
IMT Coir Bristle									10.000		1.000		15.000			14500
IMT Coir Dust & Shorts									1.670			1.000	2.000			2500
IMT Whole Nuts	1.816	0.100	0.060	0.030	0.095	0.096	0.030	0.070	0.600	0.180	0.060	0.360	1.000	0.410	0.085	750
IMT Husked Nuts	0.470	2.40	0.160	0.070	0.240	0.235	0.080	0.175					2.440	1.000	0.210	2000
IMT Coconut Water													11.760	4.820	1.000	9500
1,000 Whole Nuts	0.265	0.147	0.092	0.051	0.140	0.114	0.038	0.760	0.880	0.260	0.080	0.500	1.140	0.460	0.090	1000

Source: Markose, V. T, Sreekumar Pothuval and P. N. Joseph.(1999). Quantitative analysis of mature coconuts from the major states of India. Coconut Journal, Vol. XXX, No. 5. September, p27.

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