

**MARKETING PRACTICES OF FRUIT AND
VEGETABLE PROCESSING INDUSTRIES IN
THRISSUR DISTRICT**

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THESIS

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(RURAL MARKETING MANAGEMENT)

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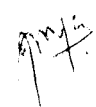
KERALA AGRICULTURAL UNIVERSITY
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DECLARATION

I hereby declare that this thesis entitled "Marketing Practices of Fruit and Vegetable Processing Industries in Thrissur District" is a bonafide record of research work done by me during the course of research and that the thesis has not previously formed the basis of the award to me of any degree, diploma, associateship, fellowship, or other similar title of any other University or Society.

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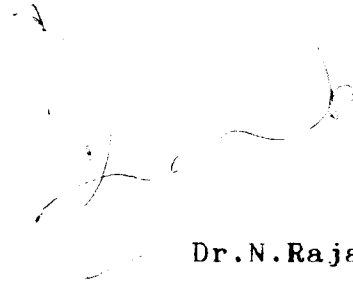

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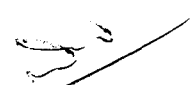


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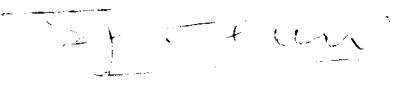


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TABLE OF CONTENTS

Chapter No.	Title	Page No.
I	INTRODUCTION	
II	REVIEW OF LITERATURE	
III	PROFILE OF THE INDUSTRY	
IV	MATERIALS AND METHODS	
V	RESULTS AND DISCUSSION	
VI	SUMMARY AND CONCLUSION	
	BIBLIOGRAPHY	
	APPENDICES	
	ABSTRACT	

LIST OF TABLES

Table No.	Title	Page No.
1.1	Production and area under major fruits	
3.1	Category wise number of F&V processing units	
3.2	Region wise distribution of F&V processing units in India (Licensed)	
3.3	Basic statistics of the Indian F&V Industry	
3.4	Share of fruit and vegetable exports in total Horticultural Exports of India (1986-1991-92)	
3.5	Exports of processed fruits and vegetables	
3.6	Percentage share of fruit and vegetable products in India (1984)	
3.8	Area and production of major fruits and vegetables of Kerala used for processing (1994)	
3.9	Processing varieties of mango and pineapple	
3.10	Cost escalation of packaging materials	
3.11	Distribution pattern of fruit and vegetable products in Kerala	
4.1	Marketing costs and margin	
4.2	Price spread in Channel 1	
4.3	Price spread in Channel 2	

Table No.	Title	Page No.
4.4	Price spread in Channel 3	
4.5	Price spread in Channel 4	
4.6	Price spread in Channel 5	
4.7	Share in market price of mango and pineapple	
4.8	Suggested procurement channel	
4.9	Comparative price	
4.10	Marketing costs and margin	
4.11	Unit A - Channel 1	
4.12	Unit A - Channel 2	
4.13	Unit B - Channel 1	
4.14	Unit B - Channel 2	
4.15	Unit C - Channel 3	
4.16	Unit C - Channel 2	
4.17	Unit D - Channel 4	
4.18	Unit D - Channel 2	
4.19	Percentage share in marketing pineapple jam	
4.20	Percentage share in marketing pineapple squash	
4.21	Percentage share in marketing tender mango pickle	
4.22	Items of purchase	
4.23	Frequency of purchase	

Table No.	Title	Page No.
4.24	Usage pattern	
4.25	Occasions of preference for processed fruit/vegetable	
4.26	Usage period	
4.27	Reason for preference of products	
4.28	Product-wise brand preference	
4.29	Shift in brands	
4.30	Need for shift of brand in future	
4.31	Preference of brand	
4.32	Brand promotion	
4.33	Need for advertisements	
4.34	Decision making for purchase of products	
4.35	Purchaser of processed product	
4.36	Place of purchase	
4.37	Branded new products demanded	

LIST OF CHARTS

Chart No.	Title	Page No.
1.	Marketing channel of fresh fruits and vegetable produces	
2.	Procurement channel of processing units	
3.	Distribution channel of processed items	
4.	Channels of distribution in fresh fruits and vegetables - Thrissur district	
5.	Fruit and vegetable procurement channels of processing units	
6.	Distribution channel	
7.		

Introduction

CHAPTER I

INTRODUCTION

India is one among the many important fruit and vegetable producing countries in the world. The varied climatic regimes ranging from the temperate to the tropical, prevailing in India, allows for the production of a wide variety of fruits, vegetables, flowers, spices, medicinal and aromatic plants. Since these horticultural crops are more remunerative than cereal crops, there has been tremendous growth in this sector in the last few decades.

India is the second largest producer of fruits and third largest producer of vegetables. And the total output from horticulture sector is estimated to be around 70 million tonnes per annum which constitutes 18 per cent of the agricultural produce of the country. According to Food And Agriculture Organisation (FAO) estimates, India accounts for over 8 per cent of the fruit and vegetable production of the world.

Rana (1984) highlights the process of economic development through the emergence of horticulture as an important sector from agriculture because fruit and vegetables form an indispensable part of human diet due to their nutritive values, resources of productive foods like vitamins and their high palatability both in fresh and processed form. The marked increase in the area and production of fruits in the last two decades supports the argument. The total area

under fruits is estimated to be 3.21 million hectares. The total production of fruits in 1992-93 was almost 33 million tonnes. According to Eighth Five Year Plan document, 40 million tonnes is the production target during 1996-97. The production of major fruits grown and their percentage shares are presented below .

Table 1.1 PRODUCTION AND AREA UNDER MAJOR FRUITS

(Area in '000 hectares and production in million MT)

Fruit	1991-92				1992-93			
	Area	% of area	Production	% of production	Area	% of area	Production	% of Production
Banana	384	13.4	7.8	27.2	396	12.4	10.5	31.7
Mango	1078	37.5	8.8	30.6	1137	35.5	9.2	28.0
Citrus	387	13.5	2.8	9.9	370	11.5	3.0	9.0
Guava	94	3.3	1.1	3.8	112	3.5	1.2	3.7
Appie	195	6.8	1.1	4.0	191	6.0	1.2	3.5
Pineapple	57	2.0	0.8	2.7	59	1.8	0.9	2.6
Papaya	45	1.6	0.8	2.8	47	1.5	0.8	2.4
Grapes	32	1.1	0.7	2.3	34	1.1	0.7	2.0
Sapota	27	1.0	0.4	1.4	31	1.0	0.4	1.3
Litchi	49	1.7	0.2	0.9	54	1.7	0.3	0.8
Others	526	18.3	4.1	14.5	775	24.2	4.9	14.9
Total	2874	100.0	28.6	100.0	3206	100.0	33.0	100.0

(Source: National Horticulture Board (1994), New Delhi.

In India, the total area under vegetables is estimated to be 5.1 million hectares. And the current production of vegetables is estimated to be 15 million tonnes, excluding roots and tuber crops. The supply side of the fruits and vegetables thus offer a high scope for value addition process.

Almost corresponding to the same time frame the total demand for food and raw materials has risen quantitatively and qualitatively. The demand increased quantitatively with the growth of population, per capita income, urbanisation, increase

in the number of working couples, steady breakdown of joint family system. The qualitative change in the pattern of demand is evident from the shift from inferior to superior foods and from raw to processed or 'convenient' foods. Thus the change in consumption pattern in the recent years has created high demand for food products in processed and preserved form to suit the changing life styles. These products include jams, pickles, squashes, dehydrated fruits and vegetables, bread, butter cheese and sherbets. Naturally, these developments call for an urgent need for developing the processing sector in India.

The processing sector can create very useful linkages and spread effects in terms of production, productivity, processing, marketing as well as income and employment generation, thereby, relieving rural poverty and unemployment. They can also serve the consumers in a much more desirable manner.

The supply and demand factors in the sector ought to have paved way for a strong linkage through the processing sector. But the performance of the processing sector has shown a lopsided development in the past. This may be attributed to several factors existing in the horticulture sector that hinders the growth of processing sector on the right lines.

The fruit and vegetable marketing, in particular, is characterised by high perishability, seasonality and bulkiness, which makes them distinctive from other agricultural produces like cereals and nuts. The special care and attention in marketing of these crops is a necessity, though it results in increased marketing costs. In addition, the imperfect market structure and existence of chain of traders in the marketing system has negatively influenced the prices realised by the growers and the multiplicity of channels causing disturbances to the processing sector.

However, effective marketing of fruit and vegetable crops has of late been treated equally important to their production. Along-with the distinctive features of fruits and vegetables, localised consumption and less inclination of consumers towards the consumption of processed products, involves large number of intermediaries for performing different marketing activities. Huge post harvest losses obviously have an impact both on the macro and micro levels of the economy. It can reduce post harvest losses, increase the farmers returns and thereby can contribute to the national income with greater impact to both internal and external markets.

Unfortunately, the quantity of fruits and vegetables processed in India accounts for only about 0.01 per cent of vegetables and 0.5 percent of fruits as against 30-50 per cent in the case of developed countries. So, there is a strong argument to speed up the development of fruit and vegetable processing and preservation industry in India.

The processing scene in Kerala also is not different. Despite horticultural crops dominating the farming situation in Kerala, the processing sector is far behind with only around 226 Food Products Order (FPO) licensees. Due to various difficulties faced by these units, more than 100 units appearing in the list of registered firms seemed to be defunct. It is also reported that of the total units existing, 34 per cent are in the small scale sector and 66 per cent in cottage scale. The major drawback of these small and cottage sector units are that they lack proper and effective marketing strategies to get an upperhand over established or national brands. Cost of raw materials and packaging are great concerns which affect the pricing policy of the products. The technology adopted by these units cannot be claimed neither modern nor superior. -

The long chain of intermediaries involved in marketing of fresh fruits and vegetables resulted in high procurement cost for the processing industry. Direct marketing of processed items also posed difficulties forcing the processor to depend on intermediate salesman. This has increased the final cost of products.

The Ministry of Food Processing (1986) states that the small scale and cottage scale units in Kerala cater to the needs of schools, restaurants, hotels, canteens, or to other licensed manufacturers. This is done to avoid entering into promotional and publicity measures where huge expenses occur but cannot be met by these units. These arrangements are more often found to be casual and loosing markets.

The major raw material base for processing industries in Kerala originated from the excess supply of Pineapple in the production centres. Mango and Pineapple still continue to share the prime position in the horticultural sector. Among vegetables, chilli and bittergourd are being used most commonly for preserved items. However, the processing of these vegetables is normally taken up by cottage scale units since sun drying is the popularly used technology for this.

Though there has been several research studies on the problems of horticultural marketing, an upto date detailed study on the marketing practices of fruit and vegetable processing industries is conspicuous by its absence. It is in this context, the present study is proposed with the following objectives.

Objectives of the Study:

1. To examine the practices in procurement of inputs.
2. Selection of product mix and cost.
3. To examine the marketing efficiency of the fruit and vegetable processing industries.

Scope:

The scope of the study primarily includes an examination of the practices in input procurement by processing units in Thrissur district. It also identifies the product mix and cost of products. The different channels involved and the efficiency in distribution of products will be tested making a comparison

of prices at different levels of marketing over the same period of time. The study will also examine the marketing efficiency of the fruit and vegetable processing industries to find out the most effective channel.

Practical Utility:

The study will help in identifying the processes and areas where cost reduction is feasible for the processing industries. It will enable to make changes in the marketing policies. The study will also suggest measures to improve the income generating capacity of the processing industries. It will also help in suggesting measures for increasing the output and employment generation opportunities thereby contributing to the development of the area.

Limitations of the Study:

The main limitation of the study was that the response from processing units selected for the study was not encouraging since these units were operating in private sectors and hesitated to disclose financial aspects except by the Co-operative society. This has limited the use and application of sophisticated tools. So a descriptive approach alongwith averages and percentages were applied in most cases.

Plan of the Study:

The report is divided into five chapters and the chapterisation is as follows. A critical review of the past studies relevant to the topic is presented in the second chapter. The third chapter presents the profile of the processing industry and justifies the selection of Thrissur district for the study. The fourth chapter deals with the materials and methods used for analysis and explains the concepts involved. The fifth chapter is dedicated to the analysis of these objectives of the study. The major inferences are summarised in the last chapter.

Review of Literature

CHAPTER II

REVIEW OF LITERATURE

INTRODUCTION

As has been noted earlier, despite considerable increase in production, fruits are not readily available in adequate quantities in the markets. This is because fruits are grown mainly for domestic market and are sold as fresh fruits and export is only about 0.01 per cent. Similar is the case with vegetables. Both fruit and vegetable preservation industry in India utilises at present hardly 0.5 per cent of the total production of fruits and vegetables. Barring a few bigger processing plants the major contribution of processed items are accounted by small fruit and vegetable preservation and processing units. These units are highly scattered and concentrate more on the production of processed items like jams, jelleys, candies, squashes, pickles and other beverages.

Canning of fruits like peach and pear, pineapple and papaya are quite common. It is observed that the quantitative and qualitative losses of fruits and vegetables are abnormally high after harvest until they reach the final consumer. Studies which could quantify the losses at different points like picking, packing, grading, transportation, storage etc. are seriously lacking. Fresh fruits and vegetables even today constitute a largely neglected group of the exports from India. The special characteristics of fruits and vegetables

distinguishes them from other agricultural crops. This calls for great attention in providing form, time and place utilities. Their natural characteristics like moisture content, texture and unit size make them highly perishable resulting in huge post harvest losses. These peculiarities make their marketing and its channel more complex. Fruit and vegetable processing industry can provide effective and efficient solutions to these complexities. The industry could provide answers to problems concerning unemployment and nutritive requirements and augment export income.

Keeping in view the different aspects related to horticulture sector especially to fruit and vegetable section, an attempt is made here to present the available review of past studies under categorical heads.

The review part is classified under the following heads:

1. Production Aspects.
2. Processing Aspects
3. Marketing Aspects
4. Channels of Distribution
5. General Aspects

Production Aspects:

The importance of fruit and vegetable cultivation and the contribution made by this sector to the development of our economy is traced from the review of literature. It also reveals existing production status of the industry and potentials for further useful exploitation.

Mahalanobis (1971) opines that there is greater scope for increasing the production of vegetables and fruits if the seasonal surpluses which create glut in the market are effectively utilized. Due to their high perishability, they are usually sold out quickly at lower prices causing heavy loss to farmers and this restricts the farmer from producing more.

Bhalerao Setal (1980) suggests cost reduction in vegetable cultivation through improved techniques and marketing practices to necessitate a considerable increase in the production and consumption of vegetables. The high cultivation cost and price spread makes it difficult for the medium and low income group of the population to consume vegetables to the desirable extent.

David(1984) states that for the development of horticulture sector an outlet for profitable disposal of the fruit is essential which will encourage cultivation and processing. He also cites the example of pineapple canning industries in Kerala. The establishment of these units was to meet the supply of pineapple and simultaneous development in pineapple production to meet the demand from the industry which gave them a monopoly in the sector.

Pandey (1989) writes that India is gifted with wide range of fruits and vegetables and contributes main sources of nutrients forming a valuable supplement to the food resources of the country and thereby improving overall nutritional standard of the people. The per capita consumption of fruits in India is around 60 grams and vegetables is 75 grams which is too low when

compared with the minimum dietary requirements of 85 grams and 200 grams respectively.

Subramanyam (1989) contradicts that even though Kerala is the leading pineapple producer in India, the lowest per hectare return was from Kerala, highest being Karnataka. Despite pineapple being an important fruit crop, India does not figure among important pineapple exporting countries.

Chadha and Retinam (1994) cites that the fruit and vegetable produce has shown an impressive growth and it should not be difficult to attain an export value of Rs. 800 crores by 2000 AD. India can capitalise on natural advantages like cheap labour, abundant sunlight, highly skilled farming community etc and the availability potential can be boosted up. Whereas Kavitha Mehta (1992) emphasises the need of plant bio-technology to boost yield potential. In pineapple, the average yield in India is 15-20 tonnes per hectare as against 60-70 tonnes per hectare in Hawaii and Philippines.

Indian Food Packer (May-June 1992) revealed that the growers of fruit and vegetables receive unremunerative prices as the present system of collection of raw materials and their processing is disadvantageous to both the growers and the industry. The transportation costs, handling and middlemen charges eat away the profit margins thereby putting the growers with less inspiration to attain higher production level.

Studies in Kerala also considers horticulture sector as the path for agricultural development of the State. Raju (1994) observes that horticultural crops, with a wide range, dominate the farming situation. But due to the highly perishable nature and lack of appropriate handling methods, 30 per cent of the production is lost during post-harvest periods. Narayanankutty (1994) revealed that even when we are in an advantageous position to fetch premium prices in upcountry markets as the fruiting season for mango starts early in Kerala, we have not been able to exploit the internal and export markets using this resource.

The review presented depicts a picture of production base for fruits and vegetables in India and some studies projects processing as a means to overcome the post-harvest losses. But the studies could hardly bring out an appropriate measure for controlling this huge losses or an appropriate marketing strategy to minimise loss

Processing Aspects:

Processing is one of the alternatives to overcome post-harvest losses on account of perishability and seasonal factors in the case of fruits and vegetables. This necessitates a probe into the review related to the industry so that the factors, problems and prospects of processing industries can be identified.

Dhawan (1969) who conducted a case study of fruit and vegetable processing with regard to location found that such industries have mainly a city oriented deposition.

Gupta (1979) states that the strategy of economic growth has to integrate rural and urban economies. This can be attained by reducing economic disparity and regional imbalances. He points out three main characteristics for a well planned agro-industry such as (a) interdependence between agriculture and industry, (b) industry be based on raw materials from agricultural sector (c) improved indigenous technology capable of increasing productivity.

Mani (1980) tried to explore the economics of fruit and vegetable processing industries in Trissur district of Kerala and opined that profit margin in different units were very high and that sufficient potential for the development of industry exists there.

Rana (1984) mentions the hindrances of Indian processing industries due to high prices paid for raw materials, high cost of sugar and sanitary cans, high price of packaging materials like bottles, crown , pilfer proof caps, labels, packing cases etc. compared to the cost of these in foreign countries.

Srivastava (1987) in a study conducted in Delhi indicated that for the selected horticulture crops like Pineapple, Mango etc. post harvest handling losses range from 6 percent to 19 percent. In addition to these marketing losses, consumption

point also witnesses loss and there is no accurate estimate of these losses. The researcher suggests an effective network of processing facilities in the form of well equipped mobile units using female labour and thereby publicity to the processing industry for creating income and employment to the women folk.

Subhanarasaiah and Mohan (1987) observes that the producers are generally ignorant of the stock positions, arrivals and prevailing prices in different markets for which the latest positions with regard to prices and stock is to be made available by appropriate means to guard distress sale.

Sukhpal and Vinod (1989) conveys the experience of agriculturally developed state like Punjab showing that growth has taken place in the field of primary processing of agricultural produce but at the same time secondary processing sector which contributes to value addition is not commensurate with the same growth rate and identifies the latter sector as a field for future research. And vegetable processing industries must be looked upon as a means of stimulating national development as it can help increase food supplies, double employment and encourage higher production of raw materials.

Khambhar and Singh (1991) but suggests that the final cost of processed food can be reduced considerably by proper monitoring of post harvest operations for which conservation of material, efficient and judicious use of inputs, by-product utilisation, capacity utilisation of the plant and overall efficient management.

Vijaya Sethi (1992) in her seminar paper suggests methods to boost export of horticultural products from the country. She points out that, quality being an important consideration in the world market, good quality products prepared under hygienic condition and new technology will help us to gain a better position in the export market for processed products. She suggested that bulk aseptic packing units close to the production centres would guard high perishability. In a paper on export of horticultural crops, Chadha and Rethinam (1992) estimates that in India there are over 4000 food processing units with FPO license and a total installed capacity is around of 4.8 lakh tonnes. However, this capacity is barely adequate to handle 0.5 percent of the total farm output. This leads to a low capacity utilisation at 35 percent in the fruit and vegetable processing industry. Mainly it is due to seasonality, locational disadvantages and high perishability of fresh produces. Still, welcome changes have taken place in the use of new technologies by these units to make use of maximum production capacity; though they are in the cottage and small scale sectors.

Desai and Namboodiri (1992) found that such industries have mainly a city oriented deposition. They suggests that location of these industries should be encouraged in rural areas where the basic raw materials, labour and incremental income would emerge.

Subramanyam and Sudha (1993) argues that encouraging the fruit and vegetable processing industry will certainly help India in earning much needed foreign exchange as there exists good scope for exports. The highly seasonal nature coupled with

perishability results in wide fluctuations and processing is one of the measures to overcome this situation.

At the same time Agri Research Yearbook(1994-95) pinpoints inadequate quantity and poor quality of fresh fruits as the major problems that leads to lack of effective use of the processing capacity of units at all times. So in-order to retain the vitamins and flavour in its original form with the available quantity, high pressure processing is recommended. This helps in keeping the products at a hygienic level and extends the shelf life of food and its quality. They also remarked that horticulture is the recent trend in research and have identified the priority areas for research in processing to be development of new products to standardised containers in transportation of semi processed and fully processed items.

The studies reviewed here reveal the need and importance of processing industries to Indian economy. Hindrances and ways to overcome these have been suggested through these studies. However, no measures have been mentioned by the researchers to influence the farming and processing community to develop the sector. The raw material and processing base are highly scattered and disorganised, there arises the need for effective forward and backward linkages. Considering the wide choices expressed by consumers at different regions, there also has to be a mechanism to translate the differing needs into acceptable forms of products. Cost reduction methods are also to be analysed to make the price of the final product match the market. Unless such measures are resorted to, the sector will continue to be a sleeping giant.

Marketing Aspects

Having reviewed the production and processing aspects, it is essential to explore the importance of marketing in the fruit and vegetable sector both fresh and processed items.

Ram and Hamsagar (1986) observed that expansion in the market for ready-to-eat packaged foods is necessary since mass production facilities are being introduced in India recently. Commensurate with demand for snack foods, rapid introduction of newer technologies for high quality processed items increases its importance in the economic front.

Natrajan et al (1989) maintains that processing of fruits and vegetables have lot of potential internally and externally and farm income can be enhanced through elimination of middleman and wastage. He thus argues that the function of linking the growers and processing firms directly, for performing in a better manner is necessary in marketing. He also points out that national brands shared 80-90 per cent of the market share creating problems of lack of preferences for local brands. The entry of brands like 'Priya' and 'Palat' have also been given a warm welcome by the markets.

Subramanyam (1989) at the same time brings out the constraints for increasing exports. High cost of production, size of fruits and packaging materials push up the ultimate cost of the product alongwith air freight charges and export duties. He also calls for a review of the existing policies.

Mani and Srinivasan (1990) recommends concession on excise duties on various components like machineries, packaging material etc., which should be strictly enforced by the Government and passed on to the farmers and consumers. The study also revealed the fact that consumers preferred established brands than local brands and certain people kept away from processed items considering it as 'costlier', 'elite' or 'luxury' item.

Chadha and Retinam (1994) invites attention on international market for Mango, which is also called as the "Fruit Ambassador of India" including its juices, pickles and canned varieties, contributed Rs. 117 crores of the total Rs. 280 crore export of fresh and processed items of fruits and vegetables.

Subramanyam and Sudha (1993) further points out that the main problems faced by the small scale fruit and vegetable processing units is the stiff competition they face from established big manufacturers and low household demand. They suggest the preparation of intermediate products like pulp or paste by the small units and supply it to the big manufacturers as a way out; or resort to a common brand name by uniting the rural processing units as is the case of Lijjath Pappad. They also emphasise that the fruit and vegetable processing industry is mainly in the hands of private owners and a very few are in public or co-operative sector. This is due to lack of information on the economic feasibility of setting up such a unit.

The Agricultural and Processed Food Products Development Authority (APEDA) conducted a study to determine the export potential of selected horticultural products from India. They estimated that the country could achieve exports of over Rs. 1850 crores by 1996-97 including all fruits, vegetables, spices and ornamental plants. Of these, the share of fresh vegetables is estimated at Rs. 415 crores, fresh fruits at Rs. 365 crore and processed and processed fruit and vegetables at Rs. 345 crores. At present, fresh and processed fruit and vegetable products together contribute about 9 per cent in the total agricultural exports. This estimation highlights the future prospects of the industry in World market says Ramphal (1994).

Vijaya Sethi (1994) writes "notwithstanding the large area under fruit and vegetable cultivation in the country, the export of such processed items from India is very little. The items of exports are juices, pickles etc. Besides Europe, Gulf markets look quite lucrative due to the presence of people of Indian origin in these regions and a demand for Indian processed items exists in many western countries. There is a need to boost this sector in the global market.

Nair (1994) points out that the marketing strategies for any product be taken up by relating t o the marketing mix elements namely product, price, physical distribution and promotion. So is the case of fresh and processed fruits and vegetables. Conversion of fresh produce into distinguishable products open up facilities for application of all marketing strategies. However, problems like seasonality and existence of long chain of intermediaries do exist in this sector.

Studies on marketing of horticultural crops by Subbanarasaiah (1994) reveal the fact that processing serves as an adjunct to the marketing operations like transportation, storage and merchandising. It is found to be a device for relating a given supply of a commodity to a prevailing market demand situation by differentiating between uses and improving quality and prices of the produce to enhance the total revenue of the producer. He also reports that picking/plucking leads to loss; dependence and cost of imported packs influences final price thereby restricting consumer interests and sales.

Scrutinising of the Eighth Plan allotment reveals that National Horticulture Board (NHB) has been allocated Rs. 200 crores for development of post harvest technology and marketing infrastructure as stated in Agri Research Year Book (1995). The National Horticulture Board alongwith the APEDA is to develop the necessary linkages for augmenting such facilities and creating a window for exports in the country. They also have to organise buyer-seller meets in major importing countries. This export enhancement programme is viewed as a happy part of horticulture sector.

Though all reviewed studies have peeped into the marketing aspects of fresh and processed fruits and vegetables, the share of advertisements or promotional methods to be adopted is seriously missing. Advertisement, which is an investment for future, has a great role in the marketing strategies as had been done by national and multinational products in India. It is also

reported that more multinational companies are entering the market shortly.

Channels of Distribution:

To study the marketing margins and price spread, there is a need to continue comprehensively the various channels of marketing. The effectiveness and efficiencies in marketing is the result of scientific design of a distribution system. Hence, there is a need to review the literature available in this area. This will bring out the impact of middlemen and their influence in the ultimate price of products.

Rhodes (1978) analysed the last stage of produce movement and conveys the message that almost all consumers buy their food products from retailers or service outlets which arrives there through the wholesaler and /dealer. Since the processed products moves through the hands of various channels they are vested with more bargaining power than the processor, at the retail level.

Subramanyam (1986) found that produces are sold usually by the cultivators on the basis of area at the time of flowering or sometimes even earlier for a fixed amount without bothering for the yields or future market price. The farmers believe that they are relieved from bearing the risk of damage in transportation and storage and extra expenses related to the transfer of produce from the farmgate to the market. He also analysed the self-marketing practices which was contrary to the above practice and observed that the orchardists of all size groups earned extra

returns and savings even after meeting all expenses when produce is taken by the farmer to the market. So he is of the opinion that there are definite advantages if farmers are able to limit the number of middlemen. However, the exploitation on farmers on grounds of perishability and risk bearing ability should also be taken into account.

Pawar et al (1987) says that to establish the bridge between scattered production and localised demand, there is a need for a large number of intermediaries. Perishability of these produces makes them quick movers for which such complexities are a must in almost all cases.

Narain (1988) observed that vegetables marketing is in the hands of wholesalers, commission agents and retailers who represent the successive functionaries in the marketing channel. He also observed that the structure of marketing system in the country itself involves three types of markets through which the agricultural commodities flow from the producers to the ultimate consumers ie: primary rural markets, wholesalers assembly markets and terminal markets.

Subramanyam (1989) views it as a middleman's affair, eating up a greater share of the consumers price and leaving the cultivator with a meagre profit. Processing industries being the largest consumer of Pineapple, get no or very little fruits directly from the producers. Sood (1989) agrees citing the case in Bangalore, the horticultural city, where the average city dweller consumes 60 grams of vegetables. This indeed is a very

low intake rate. He adds, even after a bumper harvest, the farmer is left with a small portion of profit as distress sale occurs due to the perishable nature of products which helps the middleman to earn 30 to 40 per cent of the final price. As a way out, the Bangalore Horticulture Producer Marketing and Processing Co-operative Society was established. It was agreed upon by Tilekar and Hinge (1993) who conducted a study on the marketing of fruit and vegetables through co-operatives and private traders and concluded that marketing through co-operatives was cheaper and the farmer has less responsibility regarding the transfer of produce from the farm to the market destination. They could also realise that the net price gained by co-operatives were comparatively better.

Gupta and Verma(1993) made an attempt to study the variations in the transportation cost in the marketing of perishable commodities. They classified different channels existing in the transfer of commodities and observed that intermediates hold back a good portion of the consumers price leaving the farmer and consumers as the ultimate sufferers.

The studies reviewed here clearly states that there is a need for reorientation in the channel construct in the horticultural sector for improving the efficiency and effectiveness of the channel.

General Aspects:

As the reviewed literatures rightly points out, the fruit and vegetable sector and its processed products do face numerous problems. But the emergence of processing units all over the country during the recent past invites our attention to the benefits that accrue from the running of such units.

Murdia (1979) refers to growth of per capita income, urbanisation and growing population as reasons for increase in the total demand for food and raw materials. The demand pattern has also undergone a shift from inferior to superior foods and from raw to processed or 'convenient foods' calling for the development of processing industries.

David (1984) finds prospects for processed products in a nuclear family where the husband and wife works to meet the flaring family expenses. Canned products serves them the best when cooking and cooks turn to be a problem.

It is estimated that in India the post harvest handling losses in horticultural crops range from 6 percent to 19 percent per year. In addition to this losses also occur before harvesting and at the point of consumption. Dr. Srivastava (1987) points out that to avoid this loss of fruits and vegetables an effective network of processing facilities should be developed.

Seetharam and Picholiya (1989) views that keeping the consumer price low and persuading the consumers to purchase the products would help the industry to a great extent. They also suggests that the integration between the farm and industries would be a better measure to overcome the related problems of procurement thereby helping to reduce the production costs.

To strengthen the horticultural scenario in India, the Eight Five Year Plan stated that :

"Agro-processing of fruits and vegetables is a potential area for development of group efforts by the farmers. These processing units should ideally be part of integrated projects linking production with agro-processing and supporting by-products. The major weakness of the present fruit and vegetable processing units are non-utilization of capacity and inefficient technical and financial management. Efforts are to be made during this plan period for improvement of the group efforts to secure better return for the agricultural producers with higher value additions".

Chadha and Retinam (1990) estimated that the food processing units of nearly 4000 in numbers licensed under Food Products Order (FPO) has a total installed capacity in excess of 4.8 lakh tonnes. However, despite the enormous increase in licensed capacity from 2.7 lakh tonnes in 1980-91, the industry has a capacity which is barely adequate to handle only 0.5 percent of the total farm output in fruits and vegetables. He also states that due to the seasonal nature of the industry and the location

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factors, capacity utilisation of the industry has remained low and more or less stagnant around 35 percent. The total production of processed fruit and vegetables by FPO licenses was estimated at 2.16 lakh tonnes in 1988-89 out of which export accounted for a little over 42,000 tonnes.

Sarin(1992) recognises the food processing industry as a golden goose to be nurtured and not hacked and is not happy with the abolition of excise duty alone by the Government as the taxes on containers, bottles, cans, etc., have not been put down and considers it a major constraint in the entrance to domestic and foreign markets.

Thakur (1993) considers the potential of processed foods industry and remarks the progress as not more than moving by the surface.

Raju (1994) views the establishment of more processing units as a measure to check the social problems of mounting ^{un}employment. The process of value addition will help in reducing the post-harvest losses and will also indirectly create employment opportunities. He adds that the high literacy rate of the State will help the processors in marketing these value added products. Focusing on the employment potential of the industry he explains it by an example as given below:

One tonne of pineapple at an average gateprice of Rs.3,000 will give 2,500 bottles of pineapple squash. At the then market price of Rs.24 per bottle, it will earn Rs.60,000. After meeting all

expenses, the net price earned will be Rs. 7,000. Processing one tonne of pineapple, thus, helps to generate an additional employment of 30 mandays. Since the yield per hectare is 40 tonnes, the mandays required per hectare will rise to 1200. The value earned from one hectare will then be Rs. 24,00,000.

This emphasises the scope of post harvest technology in generating employment and income. But the processors are at the mercy of policy makers, who even though have identified horticulture as thrust area for development, remain unaware of the high processing and packaging costs. The inadequate facilities in storage and transportation are other leading issues. Chadha and Rethinam (1992) also supports this argument and invites the attention of policy makers to rethink on the matter.

The studies reviewed here have pinpointed the need for attention at policy level to strengthen and broadbase the processing industries. The huge production base and post-harvest losses adds to the need for setting up more processing units for which Government support is projected as most important. Keeping in view the consumer demand for the processed items in the recent past, the scope of processing units for development is emphasised further. However, there is also high need for attention and adoption of appropriate marketing strategies and institutions, thereby, creating a congenial environment for the growth of processing industries.

Profile of the Industry

CHAPTER III

PROFILE OF THE INDUSTRY

Fruit and Vegetable (F&V) processing industry is an important agro-based industry. It helps minimise losses of fruits and vegetables, prolong the availability period for processed products and helps create employment opportunities in rural areas. Besides this, it also ensures regular availability of nutritious and hygienic food products to the consumers. The benefits brought by industry indirectly and directly stimulate horticultural growth. Some of the derived benefits resulting from this industry are reduction in migration of labour, increase in demand of supplementary raw materials like sugar, chemical and packaging materials and increase in export earnings.

Fruit and Vegetable Processing Industries in India

The fruit and vegetable processing industry in India is dominated by units operating at cottage and home unit level. The number of fruit and vegetable processing units licensed by Food Products Order (FPO) was 2026 in 1980 which grew to 3948 in 1990. About 74 percent of these units fall under the category of cottage or home sector. Further 17 percent of these operate in small scale sector while remaining 9 percent in large scale sector as is presented in Table 3.1.

**Table 3.1 Category wise number of F&V Processing Units
(Licensed)**

Sl no.	Category	Number	Percentage
1	Cottage and Home scale	2921	74
2	Small Scale	672	17
3	Large Scale	355	9

Source : Government of India (1986), Ministry of Food

*Processing," Report on Performance of Processing Industries"-
National Productivity Council.*

A further break-up of units according to geographical location indicates that the largest number of fruit and vegetable processing units are located in western region followed by Northern region. Considering the individual states, the maximum number of units is located in Maharashtra (Western Region), Uttar Pradesh (Northern region), Tamil Nadu (Southern Region) and West Bengal (Eastern region). The region wise distribution of fruit and vegetable processing units in India is summarised in Table 3.2.

Table 3.2 Region wise distribution of F&V Processing Units in India (Licensed)

Sl no.	Region	Number of Units	Percentage
1	Eastern	312	7.9
2	Southern	715	18.1
3	Western	1784	45.2
3	Northern	1137	28.8

Source : Government of India(1986), Ministry of Food Processing

Over a period of time, the performance of most fruit and vegetable processing units in general and those in home and cottage scale in particular, has not been satisfactory according to the study conducted by the National Productivity Council (1986). This is also evident from the fact that these units have continued to make traditional products like pickles, chutneys, jams etc. for a long time. They failed in not creating additional markets because of high production costs. The units are able to process less than 2 percent of total horticultural production. They have failed to make any significant dent in export market. These have resulted in low capacity utilization and low profitability of these units as reported by the National Productivity Council. Ratnam (1989) has laid down the basic statistics of Indian fruits and vegetable industry in his seminar paper on Fruits and Vegetable Products Industry.

Table 3.3 Basic statistics of the Indian F&V Industry

1	Annual produce of fruits and vegetables	70 million tonnes
2	Acreage	5 million hectare (3 percent of cropped area)
3	Range	Almost all fruit and vegetables in the world
4	Number of processing units	3000 (average)
5	Installed capacity (per year)	3,80,000 tonnes
6	Actual production	140,000 tonnes of processed items
7	Domestic consumption	55 percent
8	Exports	45 percent
9	Processed fruits and vegetables as percentage of agri-production	0.5 percent
10	Industry capacity to handle	1.5 percent of annual output of fruits and vegetables
11	Average installed capacity/ unit / year	46 tonnes
12	Total output of the industry	Rs. 250 crore/year (1 year output of the manufacturing industry and 0.1 percent of the GNP)

Source : "Export of Agricultural Commodities-2000 AD"(1987) Vikas Publications, New Delhi.

The above table clearly states that the role of the processed fruits and vegetable industry in the Indian economy is insignificant. But there is immense potential for contribution to Gross National Product (GNP), ability to add value to highly perishable commodities, contribution to rural income, providing nutrition to the population and generation of employment. Prahlad (1989) also points out the potentiality of Indian Fruit and Vegetable processing industry through the illustration of a simple example. He considers an increase in the yield of only

50 percent and the calculations led to the following observations:

- a. A minimum gross value of output of Rs. 12,000/ha (four times the average gross value of output in agriculture)
- b. A minimum net income of Rs. 3000/ha (four times the average in agriculture)
- c. A minimum employment of 500 mandays/ha (three times that of agriculture)
- d. A demand for manufactured commodities of Rs.3000/ha (as against Rs. 180/ha in agriculture).

He also argues that if this production is being processed, the beneficial effects can increase further to :

- a. Spread of industrialisation to rural areas
- b. Nutritional supplement to a population badly in need of it, and
- c. Stable prices and reliable supplies of manufactured commodities. He also observes that every one percent increase in land under horticulture meant for producing and processing fruits and vegetables exclusively for export, could lead to an increase in exports to the extent of Rs. 150 crores.

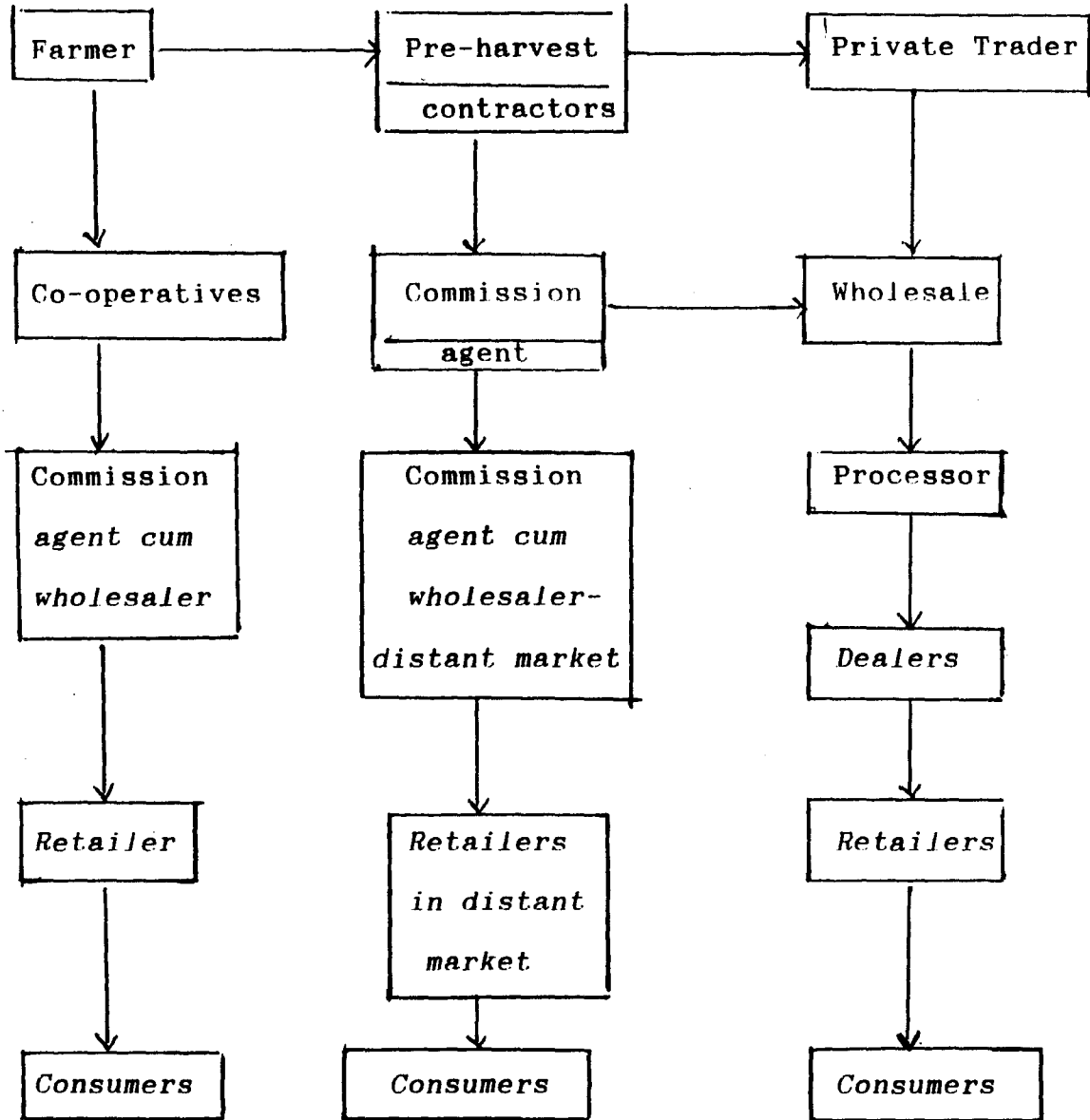
Chadha and Retinam (1990) also observed that the international market is extremely vulnerable since Indian exports are dependent on a very narrow production base and is destined to limited markets. United Kingdom, Germany, Singapore, Canada,

Kuwait and Saudi Arabia are the important countries to which our processed fruit and vegetable items are exported. They also identified Middle East, Japan and South Korea as potential countries for accelerating Indian exports.

A major drawback of the Indian Horticultural sector is cited to be the long chain of intermediaries who share a major portion of the profit generated. The National Productivity council also considers that the reasons for failure of processing units can be attributed to the mark up in price of raw material due to the involvement of intermediaries thereby increasing the procurement, production and market price of the product. Chart 1 gives the illustration of various marketing channels of fresh and processed fruits and vegetables generally observed.

Chart 1

Marketing Channels of Fresh
Fruit and Vegetable Produces



Source : Government of India (1986), Ministry of Food Processing.

Subramanyan and Sudha (1996) agrees with the views of National Productivity Council and states that in India most of the fruit and vegetable processing units are in the private hands. It is interesting to note that a number of small scale units have been set up though the economic feasibility of starting such small scale industries is unknown to many. However, they found that the main problem faced by such small processing units is in marketing their product. This is due to the stiff competition from established and big manufacturers. To a great extent, this has discouraged the entry of new processors in the field. To overcome this difficulty, the National Horticulture Board (NHB) the apex organisation of horticulture sector has been allocated Rs. 200 crore for development of post harvest technology and marketing infrastructure in the Eighth Five Year Plan. The NHB alongwith the Agricultural Products Export Development Authority (APEDA) was assigned the task of developing necessary linkages for augmenting post harvest facilities including refrigeration. APEDA also formulated an export enhancement programme for increasing horticulture exports from Rs. 722 crores in 1991-92 to Rs. 1851 crores by 1996-97 and to organise buyer-seller meets in major importing countries.

The share of fresh fruits in total value of horticultural exports has ranged between 15 and 30 per cent during 1986-1992 as shown in Table 3.4

Table 3.4 Share of Fruit and Vegetable Exports in Total Horticultural Exports of India (1986-1991-92)

Year	Share of fresh fruits(per cent)	Share of fresh vegetables(per cent)	Total Horticultural(Rs.in million)
1986-87	18.6	NA	1661.8
1987-88	30.0	NA	1448.5
1988-89	18.9	NA	1979.0
1989-90	17.6	NA	2379.8
1990-91	19.4	NA	2615.0
1991-92	15.0	26.15	5120.0

(Source: APEDA(1996), "Export Competitiveness of Selected Agricultural Commodities", New Delhi

It seems that fruits do form a sizeable proportion of total horticultural exports of India. In 1992-93, the percentage share of total fruits and vegetables in total horticultural exports was about 63 per cent and the remaining 37 per cent was contributed by processed fruits and vegetables (as estimated by the Directorate General of Commercial Intelligence and Statistics (DGCIS) in the monthly statistics of the Foreign Trade of India)

The export figures of processed fruits and vegetables during the past and the export target for 1996-97 is presented below.

Table 3.5 Exports of Processed Fruits and Vegetables

Year	Value (Rs. in crores)
1988-89	69.8
1989-90	87.66
1990-91	103.08
1991-92	157.78
1992-93	215.00

Source: APEDA(1996), "Export Competitiveness of Selected Agricultural Commodities", New Delhi.

The steady increase signifies the potential of processing industry in the exports of fruit and vegetable products. From an export value of Rs. 69.8 crores, it has increased two fold in the last five year period and the export target projected for 1996-97 is Rs. 345 crores.

The Ministry of Food Processing , India (1986) estimates that India produces over 70 million tonnes of fruits and vegetables every year ,at an estimated value of Rs.10,000 crore of which a total of 30 percent or worth Rs. 3000 crores were wasted due to outdated processing technologies alongwith post harvest losses. They also state that a country which produces 64 percent of the worlds mangoes processes only one percent of its fruit and vegetable produce. The major share of India's processed fruit and vegetable products is contributed by fruit juices and fruit pulp. Table 3.6 shows the percentage share of processed fruit and vegetable products with emphasis on each product produced out of fruits and vegetables.

Table 3.6 : Percentage Share of Fruit and Vegetable Products in India (1994)

Sl.no	Item Name	Percentage share
1.	Fruit juice and fruit pulp	27%
2.	Jams and Jellies	10%
3.	Pickles	12%
4.	Ready-to-serve beverages	13%
5.	Synthetic syrups	8%
6.	Squashes	4%
7.	Tomato products	4%
8.	Canned vegetables	4%
9.	Others	18%
Total		100%

Source : Government of India(1996), Ministry of Food Processing.

Among the fruits and vegetables that are extensively cultivated in India, Pineapple, Mango, Apples, Oranges etc form the major raw material for the processing industries. Mango is known as 'Indian Ambassador' and India ranks 4th in the production of Pineapple. Even with a production of 817 thousand tonnes of pineapple, India does not figure among important pineapple exporting countries. Among the Indian States, Kerala is a leading Pineapple producer.

The Kerala Scenario

The farming situation in Kerala is which is one dominated by horticultural crops. A wide range of fruits, vegetables, plantation crops, spices and medicinal plants are included under the list of horticultural crops. Being highly perishable, the rate of post harvest losses of fruits and vegetables in Kerala is also estimated at 30 percent of production. Kerala farmers grow very important crops like Mango and Pineapple. From the processing point of view, we terribly lack knowledge and skill in all aspects of post harvest handling of these crops and the situation in other crops is still worse. The area, production and productivity of Mango and Pineapple in Kerala is presented to give a clear picture of the supply of these produces within the State.

Among vegetables, Chilli is most commonly used for processing.

Table 3.8 Area and Production of Major Fruits and Vegetables of Kerala used for Processing (1994)

Item	Area (000'ha)	Production (000'Tonnes)	Productivity (tonnes/ hectare)
Mango	76.675	246.050	3.1
Pineapple	4.870	47.241	10.9

Source : Government of Kerala(1994), Farm Guide.

The major varieties of mango and pineapple used for processing in listed in Table 3.9 alongwith the processing attributes of each variety.

Table 3.9 Processing varieties of Mango and Pineapple

Fruit	Variety	Processing attributes
Mango	Alphonso	Fruits are attractive, large sized, oval in shape, excellent sugar/acid blend. Flavour is captivating.
	Ratna-Sindhu	Similar to Alphonso in quality, free from spongy tissue (seedless/rudimentary stone is absent)
	Banglora	Regular bearer, fruits and oblong in shape and apricot yellow color. Skin is thick and good keeping quality, preferred by processing industries mainly due to regularity in supply.
Pineapple	Giant kew	Ideal for canning industry, shape of the fruit is cylindrical eyes, broad and shallow, good for making jams
	Mauritius	Good for juice extraction
	Queen	Good for juice extraction and slices
	Caynme	Suitable for canning
	Singapore Spanish	Suitable for canning

Source : Government of Kerala (1994), Farm guide.

The farming season for Mango starts early in the State giving opportunity to fetch premium prices in upcountry markets. A large variety of pickling mangoes are available in the state whose production is around 2.4 lakh tonnes. In the case of pineapple, production rose to a figure of 47,000 tonnes of Pineapple per year. A variety of products ranging from canned,

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Mango	76.675	246.050	3.1
Pineapple	4.870	47.241	10.9
Chilli	0.531(day)	526 tonnes	N.A

Source : Farm Guide 1994

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	Caynme	Suitable for canning

sliced items to juices, squashes and jams are produced both for internal and external markets.

In a pilot study conducted by Mathew.S (1995) on the status of Fruit and Vegetable Processing Industries in Kerala , it is revealed that, of the existing total units, 34 percent fall under the category of small scale sector and 66 per cent fall under cottage scale. Of these, 54 per cent factories work throughout the year while 46 per cent work only during the fruit season. Regarding the pattern of procurement of raw materials, 59 per cent processors depend on open market, 20 per cent both on open market and farmers, 15 per cent on contract basis and the rest 7 per cent on open market and traders. He also states that frequent price fluctuations, seasonality of raw materials and inadequacy and delay in providing working capital by banks for peak level processing and stocking are the main problems faced by the processors in procurement of raw materials.

Another constraint faced by the processing units in Kerala is the cost of packaging materials. The cost escalation of packaging materials during the past few years is a clear evidence for increasing the raw material cost of processing units. Table 3.10 depicts the cost escalation of packaging materials.

Table:3.10 Cost escalation of packaging materials

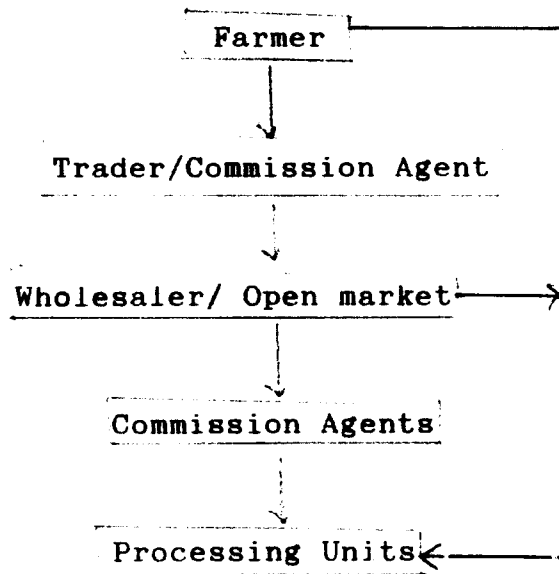
Item	Year		
	1992 (Rs.)	1993 (Rs.)	1994 (Rs.)
Bottle	2	2.50	3.10
Lid	0.9	1	1.20
Can	25	27	32

Source: Mathew.S (1995) Study on Constraints of Processing Industries in Kerala.

The weakness of the processing units in Kerala is also attributed to the existing marketing set up prevalent here. The cost of raw material is also high due to prevalence of a host of intermediaries as in the case of procurement. The chart presented below illustrates the procurement channel for raw materials.

Chart 2

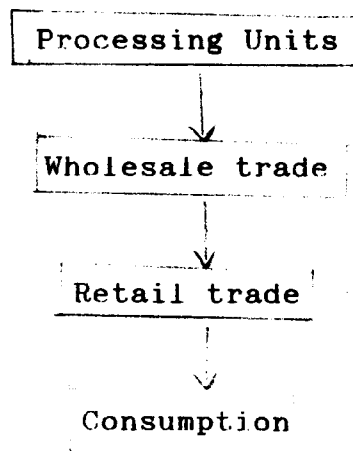
Procurement Channel of Processing Units



Even though the chart depicts a link between the farmer and the processing units directly, this very often does not occur due to irregularity in supplies ,as is stated in the Report of the Institute of Small Enterprise and Development (1992). They traced the marketing channels of processed items which are usually practised in Kerala and observed that the processing units depend heavily on open market agents in order to ensure regularity in supply resulting in increased cost of raw materials. This is clearly shown in Chart 3

Chart 3

Distribution channel of processed items



Regarding the movement of processed items, direct retailing is practised by the unit itself only occasionally, when customers nearby or those visiting the units demand for a bottle of jam or squash. In the normal course, produce moves through dealers or distributors and the retail outlets are the final points of sale. This happens due to the chain that have developed in the distribution pattern which cannot be eliminated due to reasons like inconvenience in distributing to consumers directly and so on.

The distribution of products is within the same district where the units exists. The quantity going in for exports are very little. Table 3.10 shows the distribution pattern of fruit and vegetable products in Kerala.

Table 3.10 Distribution Pattern of Fruit & Vegetable Products in Kerala

Within district	44%
Within Kerala	32%
Outside Kerala	16%
Exports	8%

Source: *Small Industries Service Institute, Thrissur (1990)*
Database

It is the Small Industries Service Institute (SISI) that maintains a list of FPO licensees in Kerala (Appendix I). As per the list there are 226 registered units in the State. But it was found that a number of units that are operating in the district are without registration. They do not fall under the

list since they have hesitated to go in for registration fearing tax burden. Among the available list of factories, more than 100 units are defunct. Of the remaining, many of them are functioning only seasonally. This leads to non-achievement of the targeted production. The reasons for this being shortage of working capital to collect fruits and vegetables in the peak season, non-availability of raw materials as per requirement and lack of packaging materials combined with lack of marketing facility. Mathew.S (1995) also commented on the issues in marketing stating that most small scale units do not depend on publicity and promotion. Because of this units fail to create adequate attention and reference on their products by the consumers.

The report of National Productivity Council also agrees to it and observes that there are non-licensed and non-registered processing units operating all over the country , especially in Southern India. Such units in Kerala depend on institutions or other licensed manufacturers for repacking/relabelling thereby avoiding direct publicity. In such cases there is no effective system to keep a check on the quality of products prepared by the home scale units. They also observed that the actual volume of production by some units operating from urban areas at certain times are much more than what has been stipulated by FPO for specific categories of units. This is done to make the unit operate economically.

The Committee on Revamping of Fruit and Vegetable Processing Industries in Kerala (1993) conducted a survey among the existing

units and estimated that the capacity utilisation of these units is less than 40 per cent and none of the products processed here have reached the national level to compete with the national brands. The major raw materials of the units are mango, pineapple and banana. The availability of mango and pineapple is stretched over a period from April to November. During this period, Units take up processing of maximum produce.

It is also estimated that 40 per cent of the total cost of product is due the high packaging cost. Another observation was that the processing industry on the whole had a very high employment generation potential and that 80-90 per cent of the total labour force is directly or indirectly dependent on this sector. In Kerala, the two major areas where the raw materials are extensively available are Palakkad for mangoes and Vazhakkulam for pineapple, which are the neighbouring districts of Thrissur. So pooling mango and pineapple in Thrissur was much easier. This might be the reason why around 30 licensed FPO units were started in Thrissur district during the early years itself. The accessibility to major mango and pineapple producing centres of Kerala was the most important factor in establishing the processing units in the district apart from being one of the leading pineapple producing centre in the past.

Processing Industry in Thrissur District:

Thrissur, the cultural capital of Kerala, is also known for its contribution to the agricultural sector . The establishment of the Kerala Agricultural University and the development of pockets of fruit and vegetable production centre in the heart of the district headquarters and in the remote areas of the district signifies the contribution of Thrissur district to agriculture sector. With 38 registered units, and more number of unregistered units, the contribution to processing sector also signifies the importance of the district in the horticultural sector of Kerala.

The oldest and the still existent unit in the district got established during March 1947, by name Canning Industries Cochin Limited (CAICO). The unit started functioning on its own using the raw materials available in the district, but the entry barrier restricted their market share. This made them depend on a Bombay based firm after two years of its functioning. However, during the subsequent five years the lessons learned from the Bombay firm were sufficient to build confidence in the management to take on the responsibility on their own shoulders.. So they started producing and marketing its own canned products under the brand name Caico. The company got its brand name established in the due course of time and became the approved supplier to the Indian Army.

The district also has a well known Fruit and Vegetable Marketing Co-operative Society with farmer members. Though the main activity of the society was procurement and marketing of fresh fruits and vegetables, the need for storage and preservation was felt during the peak seasons. This helped them to enter into new areas like processing and marketing fruit and vegetable products. However, when the pineapple belts in the district got reduced the society started procuring raw materials from open market to keep the unit functioning. To overcome its marketing problems, the society entered into an agreement with a reputed firm in the district and started marketing the products under the brand name 'Sudha'.

A number of units emerged and started operating in the district. The prominent among them were Dalco Canning Ltd., Pio Food Packers, Sagara Food Packers, Asian Food Products etc (Annexure 2) which are also on the verge of closing down. Despite the failure of these processing units, more units entered the field of fruit processing. Kalyan Food Products, a unit of Kalyan Group, which was established in 1985 also opened up a soft drinks unit by name Kalyan Soft Drinks in another two years time. With new strategies and promotional methods, Kalyan products became popular among retailers and consumers in a short time. Entering the market as a competitor to Caico, Kalyan's market share is on the increase as per the market trend and has a good product range.

Units like Premier Food Products located away from the town was started with the aim of entering to all range of processed items. But it could not withstand the raw material cost that increased in the recent past. Finally, they got diverted to the production of synthetic soft drinks. However, the unit still depends on horticultural produces by processing and marketing pickles under the brand name 'Premier'. Premier is popular among the consumers of the locality and nearby areas due to its taste and quality. The unit holds a good position in the local markets.

Materials and Methods

CHAPTER IV

MATERIALS AND METHODS

The study on marketing practices of fruit and vegetable processing industries in Trissur District was taken up with the aim of analysing the marketing problems faced by the sector. This was done from three angles on the basis of the objectives framed. The study was found to be meaningful only when the system was tested and analysed in a wholistic way. The analysis focuses on the procurement practices followed by the processing units. Product mix of the existing units were also identified. Marketing efficiency was analysed from different perspectives and seperately for input procurement and ~~output~~ distribution. The consumer response is also presented so as to highlight the implications involved in marketing.

Conceptual clarifications

The various concepts that are used in the study are explained hereunder :

1. Raw Material

The fruits and vegetables that are used for processing alone are termed as raw materials since this is the major raw material that is used in the industry. The other raw materials used for processing and preservation includes sugar, preservatives, chilli powder, salt, masala powder, citric acid, colour, essence, acetic acid, asafoetida, fenugreek, turmeric powder, gingly oil etc. Labour, water, electricity, fuel, packing materials like bottles,

tins, caps and labels are also required for the operation of a processing Unit.

2. *Channel*

Channel is the intra organisational and/ or intermediary structure through which products move from one person to another and from one place to another.

3. *Producer*

Farmers in horticultural Sector, mainly concentrating on fruit and vegetable cultivation is called a Producer.

4. *Processor*

The person/ entity that is engaged in converting raw fruits and vegetables into value added products.

5. *Unit*

The processing factory/ concern is termed as Unit

6. *Channel efficiency*

Channel efficiency is defined as the degree of effectiveness or competence with which a channel structure performs its function.

7. *Consumer price*

Price paid by the consumer for each product of each brand, at the then prevailing market price collected through retailer and consumer surveys.

8. Production Cost

Calculated by moving back from the maximum retail price subtracting the costs absorbed at the intermediate level, excluding the units margin collected through surveys conducted at distributor level and from the information provided by the processing units.

9. Price spread

The price spread is calculated taking into account the price of single product in units. The Maximum Retail Price (MRP) for selected product and the share of each middlemen was collected through administering of schedules.

10. Product mix

The product mix is the full list of all products offered for sale by a processing unit.

11. Market price

Price for a product under the prevailing market situation.

12. Produce

Fresh fruits and vegetables are termed here as produce.

13. Products

Processed items or finished goods of processing units are termed as products.

Study period

The study is completely based on primary data collected from the field directly. The current study was made during the period 1993-96.

Sampling procedure

For the purpose of the study, 4 processing units in Trissur district was selected from the list provided by the Small Industries Service Institute. Out of 38 registered units in the district, a number of units which were selected randomly were found defunct before 1992. So the units were selected purposively based on the criteria given below. This classification justifies the representative nature of the sample.

1. Oldest unit in the district - Unit A
2. Excellent Unit of the district - Unit B
3. Cooperative form of organisation - Unit C
4. A household rural unit - Unit D

The selected units are given only proxy representations.

Data collection procedure

The study is fully dependent on primary data collected from the respondents in each class. A pre-structured schedule designed for each category was administered among them. The data from processing units were collected through casual conversations

The sample selected from each category was classified into five strata as follows :

1. Farmers :
 - a. Mango : 20
 - b. Pineapple : 20

2. Intermediaries (I)
 - a. Pre-harvest contractors : 20
 - b. Agents : 20
 - c. Wholesalers : 10

3. Processing units : 4

4. Intermediaries : (II)
 - a. Dealer : 6
 - b. Retail outlets : 25

5. Consumers : 100

Method of analysis

Descriptive approach is resorted to in the study. Other tools have also been applied in appropriate places. The responses of unit heads are presented as mentioned above. Tabular method and direct reporting are used here. After critically discussing the responses of unit heads, they are related to the responses of farmers and intermediaries in the fresh fruit and vegetable sector. Since supporting secondary data was missing, processing of data with sophisticated statistical technique was not feasible. The number of units selected for the study was only four.

For the price spread analysis, percentage and averages are used. Product mix and price are also analysed using percentages and maximum retail price of products. It would be good if a little more explanation is given. Non-parametric tests are applied for analysing the consumer response in last section.

The Friedman Two way Anova Test

It is used to compare dependent groups (matched groups) on a ranked independent variable. The test is based on the Chi-square distribution and the test statistic is symbolized by χ_r^2 . The formula used is

$$\chi_r^2 = \left[\frac{12}{Nk(k+1)} \sum_{j=1}^k (R_j)^2 \right] - 3N(k+1)$$

Where N = the number of matched groups

k = the number of categories in the dependent variable

$(R_j)^2$ = the squared sum of the ranks for each group

This test is used to evaluate the difference in the ranks assigned to the matched groups.

Produce like mango and pineapple are selected for the analysis on procurement practices. Products like jam, squash and pickles are focused for the analysis on processed items.

Limitations of the Study

The major limitation of the study is the non-availability of secondary data from processing units which limited the applicability of sophisticated techniques in analysis. The scope of primary data was also limited at number of stages from farmers to processing units and traders since as most of them were reluctant to divulge details for their own reasons.

Results and Discussion

CHAPTER V

INPUT PROCUREMENT PRACTICES OF PROCESSING INDUSTRIES

The raw material procurement practice of any processing industry entails certain critical aspects such as ensuring adequate quantity, acceptable quality, availability at an appropriate time and purchase at reasonable cost.

So the first task in the procurement of raw materials is to assess the requirements, in accordance with the production build up. After assessing the requirements, sources of supply have to be located. Each unit also has to take into account factors such as the number of firms producing the same products, the quantity of materials they produce, the raw material procurement practices followed by those units and the competing power of the existing units.

An assessment of such factors will help in determining the possible share of the unit in available raw materials. If the raw material available is unsuitable, efforts can be made to examine the possibilities of acquiring alternate varieties. When the raw materials are extremely seasonal or not available adequately, it is also necessary to find out alternative raw materials so as to utilize the capacity to ensure production built up.

Besides ensuring adequate quantity, it is also necessary to ensure acceptable quality. The requirement of quality of raw materials is linked with quality requirements for finished goods.

These requirements differ from product to product and from market to market. Often, the quality of raw materials also depends on how they were handled from the time of harvesting to the delivery to processing units.

In order to ensure that the required quality of material is procured it becomes necessary to develop specifications and inspection procedures. When the raw materials are not always available according to the specifications, the unit has to upgrade raw materials after procurement.

Processing units often face the problem of seasonality of raw materials. Therefore, they have to understand the seasonal harvest pattern for relevant crops in the procurement areas. In cases where primary raw material is not adequate for the required number of days of operations and / or cannot be stored in acceptable conditions, it is necessary to explore other raw materials which have different harvesting seasons and whose supply may complement the supply of main raw materials.

In addition to the above mentioned aspects, reasonable cost of raw materials is another important factor. It has a direct bearing on the profitability of the unit. So units also has to assess the supply and demand effects on raw material cost. The demand of competing raw material users, the effect on the raw material prices in the area, and the overall effect of varying prices of the supply of raw materials also should be assessed.

The unit also has to decide the channel through which it should procure raw materials. Cost minimization would be one of the major concern in selecting each channel, along with quantity, quality and delivery arrangements for raw materials.

In the light of this background, an attempt is made in the first part of the study to examine the practices in procurement of inputs by the processing units, with special emphasis on fruits and vegetables.

Several attempts were made to collect information directly from the processing units selected for study but full disclosure of information was not possible for three of the private sector units. However, the fourth unit selected from the co-operative sector disclosed their practices . Being a fruit and vegetable marketing society direct procurement of fruits and vegetables is envisaged as their main aim.

To overcome the difficulty in generating sufficient information, the flow of produce took place was identified to locate the channel for data collection. Structured schedules (Appendix -III) were used to collect information. The procurement practices of fruit and vegetable processing industries was analysed here depending fully on primary data rather than data provided by the units. Descriptive approach is adopted for analysis to get a clear picture of the units, and information from the interview are included in this part. The local raw material base for processing of fruits and vegetables is also given for a clear understanding of the whole system.

The different inputs used in processing industries are :

1. Raw material base formed by fruits and vegetables.
2. Sugar
3. Citric acid
4. Essence
5. Water
6. Power
7. Preservatives used in pickle.

The first part is focused on the raw material procurement practice of processing units. The emphasis here is on the practices that are applicable to fruits and vegetables only as they constitute major input to the industry.

Fruit and Vegetable Supply:

Marketing of fruits and vegetables take place through various channels starting from pre-harvest contractors to retailers. Though there is movement of produce from the farmer to consumer through a channel, the distribution network varies widely. To examine the procurement practices of processing units, an identification of various channels is done first so as to understand the existing system in the flow of produce to open market. Open market is considered to be the largest customer of fruits and vegetables from where the movement of these produce occurs for final sale. So it is highly essential to identify the channels involved in the movement of produce from the producer to consumer; be it the processing unit or the consumers of fresh

produce.

Marketing Channels:

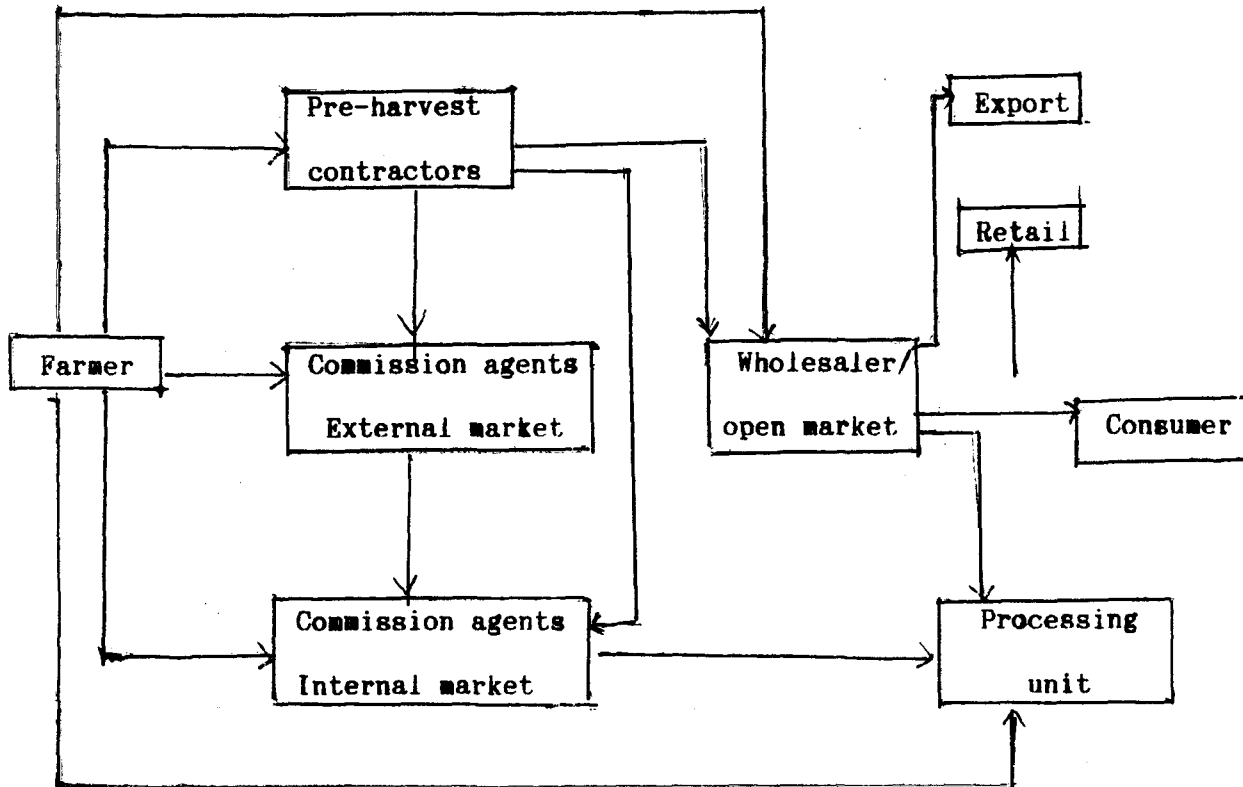
The American Marketing Association defines a market channel as the structure of the company organisation units and extra company agents and dealers, wholesale and retail through which a commodity , product or service is transferred to the final consumers.

Marketing channels are routes through which produce or products move for producers to consumers. The length of the channel varies from commodity to commodity, depending on the quantity to be moved, the form of consumer demand and degree of regional specialization in production.

By locating the major wholesalers in the main fruit and vegetable wholesale market in Thrissur, an inquiry back to the origin of produce was attempted. The identified channels in the marketing of fresh fruits and vegetables in the district is presented in Chart 4

The chart shows five main channels existing in the markets. Each channel is analysed below to ascertain the flow of produce and simultaneously to identify the channels that depended on processing units for disposing off the produce.

Chart 4 CHANNELS OF DISTRIBUTION IN FRESH FRUITS AND VEGETABLES - THRISSUR DISTRICT



The chart reveals that different channels existed in the flow of fresh fruits and vegetables from farmers to customers and to final consumers. Marketing Channels for fruits and vegetables vary from commodity to commodity, from producer to producer and from time to time. The production process is complete only when it reaches the hands of final consumers. However, all products produced by the grower cannot be distributed or delivered to consumers directly since consumers are widely scattered. So the movement of produce from the production point to the consumption point, either in raw or in processed form, necessitates the existence of market functionaries like pre-harvest contractors, commission agents,

wholesalers, retailers and processing unit. From the processing point of view, these functionaries perform different functions that enables the processors to procure raw materials for processing. The location of these units were mainly market oriented and were situated hardly 5 km away from the town or final point of sale. To analyse the functional advantages of each marketing agency a case by case attempt is made below, right from farmers to processing units.

40 farmers, 20 pre-harvest contractors, 20 commission agents and 10 wholesalers in Thrissur market were contacted. Pre-structured schedules were used (Appendix III) to collect information from each category. The role of each intermediary in the channel is analysed with special focus on the processing sector.

Farmers/Producers :

Most farmers or producers perform one or more marketing functions. They sell their produce either to the pre-harvest contractors in the flowering stage itself or to commission agents in the district. Some farmers, especially large farmers, transport the produce to nearby market and sell it either to market agents or wholesalers. Some farmers take their produce to the processing units, especially when such units exist nearby. In such cases, all marketing costs are met by the farmers themselves. When direct contact exists between farmer and processor, or wholesaler there is complete elimination of market intermediaries and they are able to perform the functions of

market middlemen. Regarding price realisation, the share of farmers in consumer price is only around 40-50 paise per rupee. When marketing costs are higher, their share is reduced further. The main factors which influence decrease in farmer price is the existence of marketing intermediaries and related costs. Also, the price realised for low/last grade produce is often meagre which, at times, have forced the farmer to even dump the produce field itself.

Pre-harvest contractors :

These intermediaries perform the functions of a marketing agency and financing agency. The practice followed in procuring fruits and vegetables is that an assumed market price is fixed for the produce at the flowering stage itself based on the past experience and enters into a contract with the farmers. This assumed price is given to the farmer who is thus saved from lending in the initial stage of cultivation. Though uncertainty is an influential factor, their continuance in the system is essential in certain cases. The prevalence of pre-harvest contractors are usually found in crops like pineapple, mango and banana. However, these pre-harvest contractors often tend to operate through commission agents or wholesalers and not processing units directly. Unexpected crop loss or damage will hinder the supply to processing unit who always needs assurance of supply in specific quantities. Apart from financial support, farmers are relieved from unexpected crop loss and the marketing costs and time is saved due to the existence of such intermediaries.

Commission Agents :

The commission agent act as a link between farmer and wholesaler, pre-harvest contractor and wholesaler or between farmer and processing unit directly or through open market linkage. Their functions are performed at different levels to suit the need and to bridge the gap that exist between the produce and customer. The usual practice followed by commission agent is that they procure produce from either pre-harvest contractors or from farmers at a commission of 8 percent. This transaction, often, occurs just outside the market. They then forward the produce to the wholesaler at a margin acceptable to both the parties. Most commonly, wholesalers and commission agents are found to form a cartel to restrict the direct entry of farmers and pre-harvest contractors to safeguard their existence in the system. However, the advantage in their existence is that locating and linking produce from different areas to open market or processor is done by this intermediary. So there is a continuity in flow of goods in adequate quantities.

Commission agents also supply produce to processing units. In peak seasons, large quantities of produce is routed to the units enabling them to preserve the produce in semi-processed form for use in lean season. Indirectly, they perform the function of regulating the market price to create demand by restricting flooding of produce in the market. The demerit in the existence of commission agent is that a percentage of profit that might add to the farmers share is transferred to these commission agents who takes no pain in production process.

Wholesalers :

Wholesalers are those middlemen who buy and sell produce in large quantities. They buy either directly from farmers, or from pre-harvest contractors or commission agents and sell to retailers, other wholesalers and processors. Significant quantities are not sold by them directly to ultimate consumers. Wholesaler performs functions like assembling goods from various localities and areas to meet the demand of buyers, sorting goods in different lots according to their quality, equalising and regulating the flow of goods etc. They also finance farmers at times and can assess the demand of prospective buyers and processors from time to time and plan the movement of goods over space and time.

The price fixation in the main market is done by the wholesalers which is let known to the commission agents. Wholesalers enjoy the advantage of having a specific location unlike the pre-harvest contractors and commission agents. The wholesalers usually maintain contacts with processing units to dispose off the surplus produce that arise from trading. This helps them to realise a price for the produce which would otherwise be lost due to decay. The processing unit also gain from the transaction since bulk procurement is possible at a cheaper rate than the prevailing market price.

To conclude, the various intermediaries existing in the fruit and vegetable sector performed numerous functions like transportation, locating produce, financing, storage, assembling, distribution and so on which are vital and inevitable. So an

attempt is also made here to examine the existing local raw material base of the units, so as to analyse the role of each channel in the procurement practice of selected processing units. For this, the channels are categorised into separate systems and the functional performance with respect to processing units is analysed. Ultimately, this analysis will help in suggesting a new model of distribution network by using the existing intermediaries to enable the farmers and processing units to earn better profits.

The major raw material of the processing units was already identified as fruits and vegetables. So an examination is attempted on the supply potentials of the locality to provide raw materials to the processing units and the need for dependence on other areas for raw material procurement.

Raw material base for procurement of fruits and vegetables:

Though all 4 units selected for the study fall under the category of processing units, the major fruits processed by them from locally available resource was limited to mango and pineapple. Even when banana is widely cultivated in Kerala, the consumption behaviour of Keralites are dominated by the use of raw fruit when compared to the processed items of banana. Moreover, the final price of processed banana items were effected by the price of oil, the medium which is used for dehydration/ frying to increase the shelf life of the products. This restricted the units to depend more on other fruits like mango and pineapple, especially, which are available locally.

The huge raw material base in the district, for crops like mango and pineapple, in the early years promoted the establishment of a number of processing units then. These units were adding value to surplus produce through value addition processes and also would guard drop in price of fresh produce in peak seasons.

However, the production base decreased leading to scarcity in supply of adequate local produce. It led to dependence of units on production centres, in the neighbouring districts, through procurement from open market. Vazhakkulam in Ernakulam district is the largest production centre for pineapple in Kerala while Palakkad was identified as the production centre for mango. The study being limited to Thrissur District, no attempts were made to contact those markets directly.

The selected units undertook processing of fruits like mango, pineapple, lime, orange, grapes etc. by procuring fruits even that are produced outside Kerala. The procurement of such fruits were directly from the open market. Even when the units were initially started with the objective of absorbing excess production of local items, the seasonality in production necessitated the dependence on out of state fruits, variety in product mix was another reason for processing fruits produced outside Kerala. Though the selected units fall under the category of fruit and vegetable processing units, majority of the processed items of these units constitute fruit products. The dependence on vegetables is restricted to pickle products for which vegetables like beetroot, carrot, lime, ginger and garlic are used. Raw mango, is but the main raw material used for

pickling too. Vegetable processing is taken up mainly during off seasons for local varieties of fruits like mango and pineapple. However, the use of local vegetables for processing was restricted to Bittergourd, Chilli and Bittergourd are widely consumed as 'Kondattom'/ chips, prepared in the traditional sun dried form. The possibilities of processing other local grown vegetables like Snakegourd, Ashgourd, Cowpea and Cucumber on a large scale are yet to explore. Since salting and sun drying is a labour intensive technology, bigger units hesitate to enter the field as labour charges will increase the production cost.

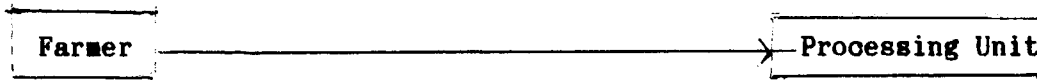
The examination of raw material base for processing units indicates that procurement of produce took place through various channels and there was the involvement of different functionaries to perform the market function. Local raw material base is used up through market functionaries within the district. Products that are produced outside the district and the State demanded more number of intermediaries in the channel to transfer the produce to the district. So the procurement practices followed by the processing units is examined through identification of channels relevant to processing sector and the channels adopted by each unit from time to time. This will reveal the functional merits and demerits of each channel employed in the sector. It will also help in finding out the most suitable and efficient channel to suggest a cost effective method to the fruit and vegetable processing units.

Identification of Channels:

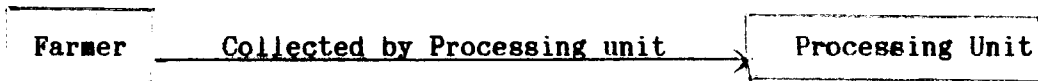
Chart 5

Fruit and Vegetable Procurement Channels of Processing Units.

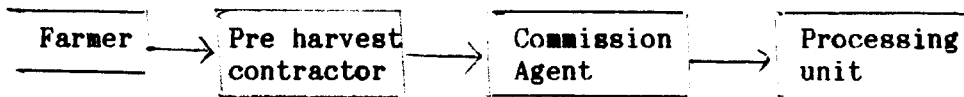
Channel 1



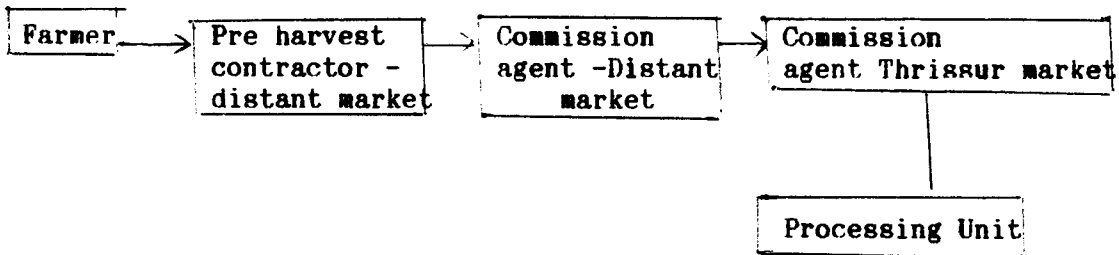
Channel 2



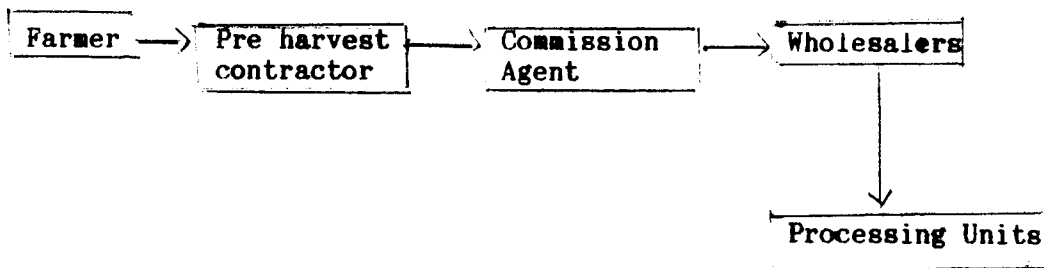
Channel 3



Channel 4



Channel 5



The chart presents two types of channels :

a) Direct Channel

b) Indirect Channel

Channel 1 and 2 represents direct channel since flow of produce takes place directly from farmer to processing units ie: there is complete elimination of intermediaries in the transfer of produce. Though direct contact between the farmer and processing unit occurs in both these channels, channel 2 can be differentiated from 1 on the basis of the practice followed in the procurement.

In channel 1, produce is taken by the farmer directly to the processing unit and all marketing costs are met by the farmers themselves. Whereas in channel 2, the marketing costs are met by the processing units who directly procures produce from farmers by arranging transportation and collection facilities.

Channel 3, 4, and 5 represents indirect channel where the processing units procure produce either from the intermediaries or by adopting a channel in which complete elimination of intermediates are not possible for transfer of produce from producer to customer.

Thus, based on the identified channels in the processing sector, an examination of the various channels that was employed by the selected units is attempted below so as to find out the channel that proved to be most relevant for each unit based on the functions performed by each channel.

Unit A:

Unit A started operation on a small scale by procuring pineapple directly from the farmers as in Channel 1. The harvested produce were taken to the unit by the farmer themselves. Marketing costs like loading and unloading charges, transportation cost, loss due to damage and reduction in quantity due to weight loss were met by the farmers. However, farmers started including immature and over-ripe/decayed pineapples in the lot, supervision of each pineapple was not possible since large number of farmers approached the unit at a time. From the unloaded produce, identification of farmers bringing unacceptable produce was also difficult. When the quantum of such produce kept increasing, the chances of incurring loss were also on the higher side.

This prompted Unit A to shift from Channel 1 to Channel 2. All the farmers who had maintained contacts with Unit A were identified and procurement of produce was done directly by the unit. Transportation and collection facilities were arranged by the Unit and inspection of produce was done while loading into trucks. However, the need for a shift became urgent when the procurement costs started increasing since all costs that were borne by the farmers were met by the unit. Also, costs for vehicle maintenance and tax increased the procurement cost.

So the unit shifted from Channel 2 to channel 3 and started procuring produce from commission agents who collect produce from farmers through pre-harvest contractors. Channel 3 depicts

the flow of produce. The pre-harvest contractor assures commission agents to offer produce from each of their areas in each season. Often, produce is taken by them to the market from where the produce is shifted to the commission agents custody. The marketing costs are borne by the pre-harvest contractors while the commission agents assures a ready market for the produce.

However, crop loss or damages disrupted the supply of produce by pre-harvest contractors to commission agents leading to unavailability of sufficient raw material for the unit. In addition, disruption in local supplies due to decrease in production base, increase in number of processing units and simultaneously off-seasons falling in between forced the unit to depend on raw materials produced outside the district and the State. Adoption of channel 4, thus, became inevitable for Unit A.

Though procurement using channel 4 was initiated by Unit A, irregularity in supplies often interrupted the smooth functioning of the unit. Moreover, the difficulty in locating these commission agents became yet another hinderance to the unit's functioning. Finally, channel 5 was adopted for procurement of raw materials. The greatest advantage of the channel was that there was a permanent location for the wholesaler and supply was regular since this was the assembling point. Though the procurement cost was higher due to the presence of a chain of intermediates in the channel, unit still prefers to procure produce through channel 5.

Unit B:

Unit B started off with channel 3. The local produce procured and distributed by the commission agents in this channel, was not confirming to the quality requirements for juice extraction and fruit canning. This often happened due to disposal of unacceptable variety to the unit when open market demanded better quality. The disadvantages faced by Unit A in adopting channel 3 was equally applicable for unit B too. So there was a shift to channel 4. However, channel 4, as mentioned earlier, led to non-utilisation of processing capacity. Also locating such commission agents was a tedious task when there was non-availability of sufficient raw material. This often ended up in increased procurement cost for the unit since purchases are made immediately from open market where the price of produce might have increased due to high demand.

This forced Unit B to depend on Channel 5. The regularity in supply of produce was the greatest advantage of this Channel alongwith its location in a specific place unlike the other intermediaries in the Channel. The Unit admitted that though the procurement costs are high, there is assurance of produce availability as per the orders placed, if any. The advantage in getting produce at cheaper rates in bulk quantities during peak seasons was also cited as a reason for selecting channel 5. Moreover, all crops used for processing, which have origin in out-of-state production centres, also can be procured from a single point.

UNIT C:

Unit C was the society in co-operative sector for marketing of fresh fruits and vegetables of member farmers. The Secretary of the society explained that the main objective of the society was procurement and marketing of fresh fruits and vegetables produced in Thrissur district. When the price of fruits and vegetables started dropping down, the members demanded either for a better price to be offered by the society or to enter the field of processing and preservation,. The second option was accepted by the members since they were well aware that the society would never be able to offer a better price unless it could divert its activities. So in order to safeguard the fall in price and to indirectly create demand for the fresh produce, a processing unit was started by the co-operative society. Though the unit started operating by direct procurement from farmers, due to seasonality in the horticulture sector, the supply of raw materials was interrupted during certain periods of the year. This in turn effected the production capacity of the unit adversely, since procurement from open market was not possible as the society was set up for procurement and processing of member farmer's produce.

However, adoption of channel 5 was necessary for procuring raw materials from open market to keep the unit running smoothly even during off seasons. Also, apart from mango and pineapple, fruits like oranges, grapes and lime was processed by the unit to widen their product range to fully utilise the production capacity throughout the year.

Unit D:

The procurement practices of Unit D was similar to that of Unit C in the initial stages of its establishment. Channel 1 was adopted and procurement was from the nearby areas. Being a unit started on a small scale and located in a rural area, the produce was transferred to the unit by the farmers themselves.

However, the problems faced by other Units in adopting Channel 1 was equally applicable here. So the Unit adopted a procurement channel which was a combination of Channel 1, Channel 3 and Channel 5. Since the Unit processes only mango and lime for producing pickles alone, Channel 1 was adopted when mango in nearby homesteads are taken to the Unit by them. The Unit adopted Channel 3 when agents in the locality approached for disposing the produce collected by them. Channel 5 is adopted when Channel 1 and 3 failed to supply produce and for procuring lime.

The Unit stated that Channel 1 was more profitable compared to other two channels since no additional marketing costs were incurred for the unit, except the cost of produce.

To summarise, the market oriented location of processing units necessitated the existence of numerous intermediaries in the channel for transfer of produce from the producer to the customers/consumers. The channel identification revealed that 5 prominent channels existed in the fruit and vegetable sector with special focus on processing unit. It was observed from the

examination of the performance of each intermediary that each agency performed significant roles in the horticulture sector, mainly due to the seasonality nature of crops and the instability in pricing system.

Functional analysis revealed that, Unit A had dealt with all 5 channels while Unit B tested only 3 channels. Unit C adopted two channels, namely 1 and 5 whereas Unit D went in for a combination of 3 channels.

When Channel 1 was left out on grounds of irregularity in supply and insufficiency in quantity and quality of produce, adoption of Channel 2 was restricted due to high marketing costs incurred by the processing unit. Channel 3 was rejected due to the seasonality nature of the product within the district leading to insufficient supplies at times. Shift from Channel 4 was necessary on disadvantages like increased procurement cost due to the existence of an additional middlemen and the transportation charges involved, along with the difficulty in locating the agents who often tended to break contracts with units leading to disruption in supply.

The present channel adopted by the Units is Channel 5, which do have the demerits spotted in Channel 4, but is well protected due to the permanent location which a wholesaler possess but not the commission agents. Also, Channel 5 is advantageous with respect to regularity in supplies. Another merit of Channel 5 is that it serves the processing units with raw materials at a cheaper rate during peak seasons and also provides market

information to the units. The greatest disadvantage of the system is that the procurement costs are higher , particularly during off-seasons. This resulted in increased price for final product.

To ensure quality of raw materials in procurement of raw materials directly from farmers and to bring in regularity in supplies, linkage with farmer emerges as an extremely useful contributing factor. If there is a strong backward linkage, farmers can be motivated to produce the required quality of raw materials through supply of quality inputs and assured prices for their produce.

Price spread analysis

The marketing margin or price spread refers to the difference between the price paid by the ultimate consumer and the price received by the producer for equivalent quality of produce. This spread consists of marketing costs and margins of intermediaries. Thus, it is a device which indicates how much is actually received by the producer out of every rupee that is spent by the consumer and what portion of it goes into the coffers of intermediaries. It has been observed that, in the midst of diversity of marketing functionaries, all that is spent by customer does not find its way into the producers pocket. In fact, a sizeable proportion of the gain is swallowed by the intermediaries performing the various functions and services from point to point. In brief, the price spread or margin includes all the various types of costs in moving the product from the point of production to the point of consumption.

In general, the more the number of agencies the product pass through, the lesser will be the share of the producer and the greater will be the price paid by the consumer.

The study of marketing costs and margins will be useful to the producer, consumer and the Government to formulate the appropriate price policy that aims to provide incentive prices

to the producers, assuring them a legitimate share in the consumer's rupee. At the same time, it also protects the consumer against usual high prices. Price spread analysis not only shows the cost and margins at different levels of marketing by different agencies, but also show a clear picture of entire marketing system. It also gives some idea about the efficiency of the marketing system, thereby, helping to judge whether the services of intermediary agencies are provided at a reasonable cost.

Marketing margin data is helpful in the development and evaluation of market policies like the regulation of market charges of different functionaries and the functions. A study of marketing margin data is also helpful to compare the relative efficiency of different marketing channels and to judge the efficiency in performing marketing functions by individual functionaries.

The price spread details in the marketing of fresh fruits and vegetables are shown in Table 4.1.

Marketing costs and margin: Fresh produce

The marketing costs and margin in each channel is presented in Table 4.1. The table shows that the costs and margin is less expensive when Channel 1 is employed. Channel 4 is found to be the most expensive. Though the number of

intermediaries involved in Channel 5 is equal to that in Channel 4, the margin of pre-harvest contractor in production centres outside the district was higher. Since the functional analysis revealed that Channel 5 was more acceptable to processing units, this channel can be employed on grounds of regularity. However, there is a need to reduce the procurement cost of the processing units to increase the profit of the unit, either through increase in profit margin, or through increased sales by reduction in the price of final products.

This essentially shows the possibility of employing the least expensive channel. Nevertheless, the price spread analysis is done to examine the economic efficiency of each channel. This will also help in suggesting the appropriate model for procurement of raw materials by the processing units.

The calculations are based on the costs incurred for a truckload of produce. In its full capacity, 3 tonnes of produce makes a truckload. Assuming that each truckload of produce taken to market is in its full capacity, the costs are calculated here for each kilogram of produce. This is done to make the computation and comparisons easy. However, it is learnt that this does not happen always. Often, the produce taken to market on each market day is very much lesser than the truck capacity. Whereas, costs incurred for

transportation and margins remain the same in such cases. So the above assumption is to standardise the procedures and computations while going in for price spread analysis.

The price spread analysis not only reveals the farmer share in consumer rupee. It also brings into light the increase or decrease in the procurement price of processing units when each channel is employed. The effect of this increase or decrease in procurement price in the farmer share will also be reflected very clearly when a case by case analysis is attempted.

Table 4.1 exhibits that the direct channel incurs the least marketing cost among all the channels. While some costs are common in all the channels, a few vary from channel to channel. Transportation costs, grading, packing and marketing costs, loading and unloading charges and other miscellaneous expenses are the common costs in this regard.

It is clear from Table 4.1 that direct channel is the most economical one so far as the cost structure is concerned. Total marketing cost of this channel works out to Rs.3.00/kg. This is the least loaded channel as linkage is between the grower and customer. Hence the commission of marketing intermediaries is absent in this channel. Despite the fact that this type of channel is less expensive, growers hardly

Table 4.1 (Contd.)

Particulars	(Rates/kg)									
	Channel 1		Channel 2		Channel 3		Channel 4		Channel 5	
	Mango	Pineapple	Mango	Pineapple	Mango	Pineapple	Mango	Pineapple	Mango	Pineapple
8. Weight loss	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
9. Damages/waste	0.30	0.30	0.05	0.05	0.30	0.50	0.30	0.50	0.30	0.50
10. Pre-harvest costructors commi.	-	-	-	-	1.00	0.50	1.00	1.00	0.50	0.50
11. Commi. agents margin (internal)	-	-	-	-	0.50	0.50	0.50	0.50	0.50	0.50
12. CA's margin (external)	-	-	-	-	-	-	0.50	0.50	-	-
13. W/S's margin	-	-	-	-	-	-	-	-	0.50	0.50
	3.00	3.00	4.00	4.00	3.8	3.8	4.8	4.8	4.3	4.3

* ~~Weight~~ loss is calculated on a standard measurement collected from Thrissur market. For every 100 kg of produce, 0.40 is deducted as weight loss. Hence the standard weight loss.

opt for the obvious reasons already mentioned in the earlier section.

An attempt was made here to select the best channel that suits the processing units, with least concern of difficulties in their raw material procurement process.

To measure the channel efficiency of the marketing channels of fruit and vegetable processing units, the approach used in the study is price spread analysis. It helps to make an assessment of the economic efficiency of different channels, thereby helping the units to select the procurement channel not only on the basis of its functional efficiency, but also on the basis of economic efficiency. The efficiency of each marketing system is signified based on this price spread analysis. The larger the price spread, lesser the efficiency of the system and vice versa.

The method used here in calculation of price spread is

- (a) the comparison of prices at different levels of marketing like marketing costs, margins etc. over the same period of time.

- (b) Submission of average gross margins obtained by dividing the money value of sales minus money value of purchase by the number of units transacted by each type of marketing agency.
- (c) Following the specific lot of consequents through the marketing system and then assessing the cost involved at each of the different stages.

Price Spread: Fresh produce

The nature of products dealt in the study suggests that the use of first method would be more suitable in the processing scenario. The price spread is calculated for the two major local produces namely mango and pineapple using a simple price comparison table. This Table will help the processing units to test price spread as and when a change in channel is demanded, but without going through complex calculations. Also, this table can be made use of by the farmers for increasing their share in the final price of produce. The price is calculated for per kilogram of produce to arrive at the profit that emerges out when resorted to each channel, since bulk purchase is a regular process for processing units. The price and cost per kilogram of produce is taken as an average of the price that existed in the market during the study period. Averages and percentages are the

most effective methods that can be adopted in horticulture sector for any computation since prices for these produces keeps on varying from time to time, grade to grade, quantity to quantity and customer to customer. The price spread of each channel is calculated for Grade 1 in both produces keeping the farmer price constant to track the actual costs involved in each channel. Figures in bracket denotes percentages.

Table 4.2 presents the price spread for Channel 1. It is calculated on the assumption that the marketing costs are borne by the farmers since produce is taken by them directly to the processors.

Table 4.2 Price spread in Channel 1

Channel	Mango (Rs./kg)	Pineapple (Rs./kg)
Farmer	6.00 (66.67)	2.50 (45.45)
*Marketing costs	3.00 (33.33)	3.00 (54.55)
Purchase price of processing unit	9.00 (100)	5.50 (100)
Prevailing open market price	11.00	7.00

* See Table 4.1

Table shows the price spread of mango and pineapple in Channel 1. When 66.6 per cent of the purchase price of processing unit went directly into the hands of mango farmers, only 45.45 per cent was offered in the case of pineapple. The marketing cost met by the farmers were as high as 33.33 per cent for mango and that for pineapple was 54.55 per cent. This shows that it is the marketing costs that decreases the farmer price and increases the procurement price of processing units. Though the procurement price of the unit is lesser than the market price of Rs.11 this channel was not acceptable to the unit since regularity in supplies was not ensured. The reason for irregularity is seasonality and credit binding by traders. When the market offers a higher price on grounds of quality of produce, naturally a tendency will develop among the farmers to sell the produce in the open market. The remarks of units A and B, as mentioned in the earlier section of the analysis, strengthens this argument. This prompted the units to divert from Channel 1 even when the procurement price was lesser than the market price.

So price spread for Channel 2 is worked out to analyse the economic efficiency of the next channel that was adopted by the units.

Table 4.3

Price spread in Channel 2

Channel	Mango (Rs./kg)	Pineapple (Rs./kg)
Farmer	6.00 (60.00)	2.50 (38.46)
*Marketing costs	4.00 (40.00)	4.00 (61.54)
Purchase price of processing unit	10.00 (100)	6.50 (100)
Market price	11.00	7.00

* See Table 4.1

The share of farmer price is 60 per cent for mango and 38.46 per cent for pineapple. This shows that 40 per cent in mango and 61.54 per cent in pineapple had been used up for direct procurement of produce. Since the unit had employed transportation facilities to procure produce, farmers were relieved from the difficulties encountered in taking produce to the market. Moreover, the greatest advantage offered to the farmer was that he could engage more in the farming activity or could involve in allied activities. Indirectly, this channel would have proved to increase the production base of farmers if the system was continued. But the expenses in procurement appeared as an additional cost to the processing unit. The procurement price, when compared to Channel 1, was also higher.

The functional analysis also revealed that even when such facilities were offered by the processing unit to the farmers, uniformity and regularity continued to be unsolved problems to a certain extent since pre-harvest contractors bind many farmers through advances and credits. The existence of such contractors and commission agents for satisfying the immediate credit needs of the farmers were inevitable in the horticulture sector since processing units did not offer such facilities. The institutional credit facilities, with its detailed and complicated procedures, also were not extended to the farmers in the right time.

Table 4.4 Price spread in Channel 3

Channel	Mango (Rs./kg)	Pineapple (Rs./kg)
Farmer price	6.00 (58.25)	2.50 (39.58)
Pre-harvest contractors margin	1.00 (9.70)	0.50 (7.94)
*Marketing costs-I	1.40 (13.59)	1.40 (22.22)
Commission agents margin	0.50 (4.86)	0.50 (7.94)
*Marketing costs-II	1.40 (13.59)	1.40 (22.22)
Purchase price of processing unit	10.30 (100)	6.30 (100)
Prevailing open market price	11.00	7.00

* See Table 4.1

Channel 3 is analysed to examine the economic efficiency so as to seek the chance of employing the channel for procurement of produce by units. Keeping the farmer price constant at Rs.6.00 for mango and Rs.2.50 for pineapple, the average price received by the farmers during the study period, the price spread is worked out. The table shows that, percentage share of farmers had decreased to 58.25 per cent in pineapple and 39.68 per cent in mango even when the procurement price of the unit increased. It reflects high price spread in the channel. 41.75 per cent of the price was dissolved at the intermediate level in Mango marketing while it was still higher in Pineapple. More than 65 per cent of the procurement price of pineapple was pre-harvest contractor's and commission agent's margin including the marketing costs. However, it was the marketing costs that was higher than the intermediates margin.

From among the two intermediaries involved in the channel, the share of pre-harvest contractors is around 10 per cent and 8 per cent for mango and pineapple respectively while it was only around 5 per cent in mango for the commission agents. Whereas the percentage share of pre-harvest contractors is higher in mango since the risk involved is much more when the price fixation is in the flowering stage itself. Even a little shower after flowering can result in crop loss

by shedding of flowers. The non-availability of produce from local production centres in lean seasons is also one of the reasons for the non-dependence of processing units directly on Channel 3. The intermediaries are often influenced by the market price since profit is their only concern, which also leads to avoidance in supply of produce to processing units when market price is high.

Table 4.5 Price spread in Channel 4

Channel	Mango (Rs./kg)	Pineapple (Rs./kg)
Farmer	6.00 (55.55)	2.50 (34.25)
Pre-harvest contractors (distant markets)	1.00 (9.26)	1.00 (13.70)
Commission agent:1 (distant market)	0.50 (4.63)	0.50 (6.85)
Commission agent:2 (local market)	0.50 (11.63)	0.50 (6.85)
*Marketing costs	2.80 (25.93)	2.80 (38.35)
Purchase price of processing unit	10.80 (100)	7.30 (100)
Prevailing open market price	11.00	7.00

* See Table 4.1

The decrease in local resources due to emergence of hotels and hospitals in the town, adversely effected the smooth functioning of processing units. So channel 4 was attempted as a source of supply for both mango and pineapple to ensure supply throughout the year for units in the district.

The number of intermediaries involved in the system increased to 3; each receiving a small percentage of share from the price for the produce. Channel 4 also witnessed high marketing costs which could not be avoided considering the distance between the unit and the production centres. The border areas of Thrissur district, were good production centres of Mango and Pineapple. The arrangement in Channel 4 was that pre-harvest contractors in those production centres, in the normal course of action, would bind the farmers through credit and advance as in Channel 3. Then the commission agent in those markets ensure a market for the produce, at a commission rate of 5-7 per cent, who in turn is assured of a market for the produce by the local commission agent in the district. The marketing costs are met by these commission agents in lean seasons while in peak reasons it is met by the pre-harvest contractors.

Since the processing units depend on distant markets for produce during lean seasons, when local supplies in the

district is insufficient, table depicts the channel involved in this distribution network. The marketing cost is higher in pineapple with 38.35 per cent.

The price spread in Channel 4 is 44.45 per cent for mango and 65.75 for pineapple, which shows that the efficiency is much lesser in pineapple than in mango. With more than 40 per cent of price spread, it cannot prove to be efficient even in mango.

Table 4.6 Price spread in Channel 5

Channel	Mango (Rs./kg)	Pineapple (Rs./kg)
Farmer	6.00 (58.25)	2.50 (36.97)
Pre-harvest contractors margin	0.50 (4.90)	0.50 (7.35)
*Marketing costs	2.80 (27.18)	2.80 (41.18)
Commission agents margin	0.50 (4.90)	0.50 (7.35)
Wholesalers margin	0.50 (4.90)	0.50 (7.35)
Purchase price of processing unit	10.30 (100)	6.80 (100)
Prevailing open market price	11.00	7.00

* See Table 4.1

The price spread in Channel 5, as shown in Table 4. 6, reveals that 41.75 per cent of price spread occurs for mango while for pineapple it is 63.23 per cent. The farmers are offered a meagre share from the purchase price of the processing unit. The three intermediaries together contribute around 15 per cent in mango and 22 per cent in pineapple in the total price spread of Channel 5. However, the marketing costs remain to be higher in Channel 5 too. The advantage gained by the processing units in this arrangement is that regular supply of raw material is ensured at wholesalers level since major share of produce moves through open market. There is also a twin advantage in the system enjoyed by all the channel members involved. The farmer, pre-harvest contractors and commission agents are offered ready market for their produce in the open market. When surpluses turn to be waste, even at a throw away price, an acceptor for the produce is ensured and it saves the wholesaler from incurring loss. At the same time, the processing units can accept any quantity of produce as there are provisions for storage in semi-processed form. The wholesaler at such times offers produce to the processing unit, at a price much lesser than the prevailing market price because it is his realisation of profit from wasted/unutilised portion of produce.

Comparison of price spread for various channel

From Table 4.2 to Table 4.6 it is observed that price spread is lesser in Channel 1 when compared to other channels, signifying the importance of Channel 1 on the basis of economic efficiency. Only 33.4 per cent of the procurement price was absorbed in the transfer of produce from farmer to processing unit. Among the other four channels, channel 2 was better off when compared to other channels. Channel 5, 3 and channel 4 followed.

Considering the procurement price of the unit and the price spread in the channel, the procurement price in Channel 1 was the least with the price being only 81.8 per cent of the market price in mango and 78.5 per cent in pineapple; as depicted in Table 4. On economic grounds, Channel 5 was the least efficient in supplying mango while on functional grounds, Channel 5 was preferred by the Units. In the case of pineapple, Channel 4 was found to be least efficient when viewed both at the farmer level and at the units level.

To summarise, it is evident from the price spread analysis that Channel 1 is more efficient from the economic point of view. When the functional analysis revealed that the price was high in open market it was dependable based on the regularity of supply. So Channel 5 was selected as the

Table 4.7 Share in market price of mango and pineapple

(Price in Rs./kg)

Particulars	Channel 1		Channel 2		Channel 3		Channel 4		Channel 5	
	Mango	Pineapple	Mango	Pineapple	Mango	Pineapple	Mango	Pineapple	Mango	Pineapple
1. Farmer price	6	2.5	6	2.5	6	2.5	6	2.5	6	2.5
2. Farmer share in procurement price	(66.6)	(45.45)	(60)	(38.46)	(58.25)	(39.68)	(55.55)	(34.25)	(58.25)	(36.77)
3. Other costs	(33.4)	(55.55)	(40)	(61.54)	(41.75)	(60.32)	(44.45)	(65.75)	(41.75)	(63.23)
4. Procurement price of Unit	9 (100)	5.5 (100)	10 (100)	6.5 (100)	10.3 (100)	6.3 (100)	10.8 (100)	7.8 (100)	11 (100)	7 (100)
5. Share of procurement price in market price	(81.8)	(78.5)	(90.9)	(92.85)	(93.6)	(90)	(98.1)	(111.4)	(100)	(100)
6. Market price	11 (100)	7 (100)	11 (100)	7 (100)	11 (100)	7 (100)	11 (100)	7 (100)	11 (100)	7 (100)

efficient channel. However, the economic front looks very negative in Channel 5 when compared to the rest of the channels in the sector.

A suggested method in this context is that organising farmers into a collective force under the umbrella of each unit and imparting credit, training and technical knowhow, marketing support etc. it will help in improving the functions of Channel 1. The extra amount spent while procuring raw materials directly from the open market, can thus be diverted to such activities, thereby helping the farmer to broaden their production base with effective backing from an organised sector. For better results, procuring produce at specified collection points in the field by the farmers themselves and by using/employing a commission agent in the channel, the processing unit can procure produce at a cheaper rate. The transportation charges will also get reduced since specified locations are collection points unlike in the earlier cases where commission agents wandered from field to field for locating and collecting produce. If sorting and grading is practiced by the farmers, it will help them earn better returns. The suggested channel is presented in Table 4.8 below.

Table 4.8

Suggested procurement channel

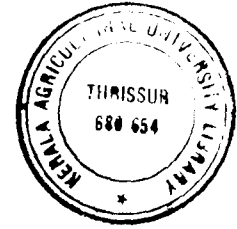
Channel	Mango (Rs./kg)	Pineapple (Rs./kg)
Farmer	6.00 (70.58)	2.50 (50.00)
Commission agent	0.50 (5.90)	0.50 (10.00)
Marketing costs (cut short by bulking)	2.00 (23.52)	2.00 (40.00)
Purchase price of units	8.50 (100)	5.00 (100)
Prevailing open market price	11.00	7.00

It is seen that the revised model offers the farmer an increased share of 70.58 per cent share in mango and 50 per cent in pineapple. The procurement price of the unit also has gone down, increasing the margin between procurement price and market price. This system may be acceptable to both the farmer and the processing unit since there is an opportunity for increasing their share of profit.

PART II

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PRODUCT MIX AND PRICE



The product mix is the full list of all products offered for sale by a firm or concern. It is the set of product lines that a particular marketer offers for sale. The product mix of any company possesses breadth and depth. Breadth denotes the number of product lines carried and the depth denotes the varieties of products offered within each product line.

The location of the production unit, its capacity and product mix are highly interrelated. It is very important for the organisation to decide the product mix for its plant in such a way that the plant can be operated at its optimum level. The raw materials required for agro-processing units are available only in particular seasons. Hence, no processing unit can be operated at optimum capacity by processing only one agro raw material. Because of this, agro processing units have to process more raw material and produce different varieties of products. The product mix also dependssss on availability of raw materials and the demand for the product.

The demand for a product and its price are highly related. The most important factor in pricing a product is to estimate the total demand for the product. The demand schedule represents the demapd for the product in units at different prices. It shows an inverse relationship between demand and price. That is,

higher the price, the lower the demand and vice versa, in the normal course of marketing. This relationship of price and demand, but does not exist in all products. Price keeps on increasing with any increase in demand for products which exhibit peculiar characteristics like perishability, lesser availability and so on. So the importance of price factor varies with the type of the product. But normally buyers are willing to pay more if they get more satisfaction; conversely a low-priced product need not sell more.

So an attempt is made in this section to analyse the product mix and price in the fruit and vegetable processing industry. Though the objective was aimed at examination of product mix and cost, lack of sufficient cost details restricts the scope for an indepth analysis on the cost structure. Hence, the study attempts to examine the price of processed products of the selected four fruit and vegetable processing units namely A,B,C and D. The focus of the study is on the processed items prepared from locally available raw materials like pineapple and mango. So the analysis part is restricted to limited number of items; specifically to those items that are commonly prepared by the selected four units. This examination of prices will serve as a guideline to the processing units to minimise the production cost in order to increase the profit of each unit.

The processed products of the selected fruit and vegetable processing units comprise of :

1. Jam
2. Squash
3. Pickle
4. Sauce
5. Juice
6. Fruit drinks

Among these, jam, squash and pickle form the major share of products. Items like sauce, juice and fruit drinks fall in the product line when raw materials are available at cheap rates and when the production capacity can be fully utilized. So the study is analysed based on the three main products of the selected processing units. However, the items processed by unit D include only pickles. Though the unit started off with full range of products, it could not withstand the competition from well established brands of jam and squash thereby forcing them to concentrate on a single product.

Unit A :

As mentioned in the earlier sections, unit A was the oldest processing unit in the district. The product range of the unit kept increasing from year to year and finally expanded to diversified activities like fish processing. Of late, Unit A has opened up a separate section for fish processing.

During the initial stages, Unit A concentrated only on pineapple

products like jam and squash. Recognising the potential of outside markets for preserved pineapple, products like pineapple slices and pineapple titbits were also included in their product line. The movement of these products within the district and within the State was very limited. Moreover, the availability of fresh pineapple was another reason for less dependence on canned pineapple products.

When mango started flooding in peak seasons, processing of mango into products like mango juice and pickle items were taken up.

No sooner, the range of pickles began to increase. From mango to fish, 6 items of pickle form the product line of the unit. Later on, when the consumption pattern of Kerala started undergoing a change to 'convenient foods' Unit A also initiated the preparation of sauce and syrup.

The raw material base had by then shifted to products like tomato and garlic which are produced mainly outside Kerala. These products were but procured from local agents/wholesalers in the district who purchase them from outside market for sale in local markets of Kerala.

The product mix of Unit A is presented in Appendix (IV). It was observed that the product mix of unit A is very wide with a range of 32 products. It appears that the Unit had made maximum use of the production capacity.

Among the processed items, share of products like squash, jam and pickles were the highest. Though the exact share was not

revealed, the product mix of the unit also revealed that items like jam, squash and pickles contributed the major share of products processed during each year. The range of products varied in quantity and price so as to meet the demand and convenience of different class of customers. When 200 gram containers for jam met the demands of low income group, 4 kilogram tins were meant for canteens, hotels and hostels who are bulk purchasers. Such classifications and varieties are also maintained for squash and pickle. They will certainly attract the customers to the brand and products of the unit.

Though products like pineapple slices, titbits, mango slices and mango bar are also part of the product mix of unit A, these products does not appeal much to the customers in Kerala. They are either exported or are demanded by star hotels who serve foreign customers. However, the unit head remarked that there is lot of potential for our markets to absorb any number of processed items in the coming years and products like sauce and packed fruit juice has recently gained momentum.

Unit B:

Though established in the 80's Unit B also maintains a good product mix. Items like jam, squash and pickle entered the market turning to be a strong competitor for the products of Unit A, which was already an established brand in the market. Through promotional strategies adopted in a media and incentives provided to the sales channel, the popularity gained by this unit was really an astonishment to the retailers and

consumers. All the retailers contacted for the study agreed that they were more interested in marketing the products of Unit B since the incentives provided by them were really competitive.

The product mix of Unit B is presented in Appendix (v). It reveals the fact that, Unit B, even after entering the field of processing business late by around 35 years than Unit A, the product mix of the Unit B is equally competitive. It is also interesting to note that, when Unit A concentrated more on pineapple products, Unit B focused more on mango products. Unique products for international market processed by using the local raw material base is really appreciative.

A comparison of Unit A and Unit B revealed that ,when Unit A concentrated more on variety in same products, Unit B was producing products that are only enterents to the market like Chilli pickle and mixed vegetable pickle. Also, Unit B had tried to be more concise in its production activities by sticking on to fruit and vegetable sector than diverting the activities to allied sectors.

However, the range of processed products of Unit B was only 27 products when Unit A went in for 32 products.

Unit C:

In Appendix, vi the product mix of Unit C is presented for analysis.

Unit C has selected a product mix which is comparatively lesser

than that of Unit A and Unit B. Nevertheless, it is noted that they still stick on to processing of fruits and vegetables than diverting to allied sectors or synthetic products. The new item that emerged here was canned mango pulp. Except for garlic pickle, Unit C also has concentrated their activities on fruit and vegetable products alone, mostly sticking on to locally available raw materials.

Unit D:

Unlike Unit A, B and C, Unit D focussed on a single item prepared out of fresh fruit and vegetable, namely pickles, and a small percentage of production of the Unit is concentrated on bottled fruit juice. During the initial stages Unit D also processed items like jam, squash, pickle and syrup. But with the increase in production cost, the product mix of the Unit became lean. And, Unit D's existence in the industry is marked by the performance of only 4 items in the market.

(see Appendix^{vii} for product mix of Unit D)

A simple surface analysis of product mix reveals that all 4 units have gone in for producing pickles. A reason that can be attributed to this is the consumer preference of the people in the state. Normally, spicy foods are preferred by Keralites. Also, pickles are prepared in the homesteads since they are part of a typical Kerala lunch. So to suit the consumers taste and preference, various pickles are processed and marketed by the processing units.

The table also reveals that the product mix of our processing units have increased considerably. There is still more potential for our markets to absorb processed items, but lies untapped. However, it cannot be ignored that small units cannot enter the processing field with much ease since survival will be very difficult. When both national brands and established local brands do have a monopoly in the market, care should be taken in selecting the product mix- Unit D concentrated more on a single product line limiting itself from going in for more products. Whereas, bigger units like A and B have kept moving fast in the industry. Since Unit C is restricted from depending heavily on raw material supplies from neighbouring states, the product mix has tended to remain lesser than Units A and B.

The cost break up for products were not revealed by the Units since they insisted on maintaining secrecy at the unit level alone. So instead of cost analysis, price analysis is attempted using Maximum Retail Price (MRP) of units.

Comparative Price Analysis :

A comparative price analysis is attempted in this section. Products that are produced commonly by the 3 main units is considered for this analysis. The products of Unit D will also be included here along with the other units but since their product mix is only a few, certain products are missing in the table.

Table:4.9

Price Comparison Between Units

Items	Unit A	Unit B	Unit C	Unit D
Pineapple jam (500 gram)	26.00	*27.00	25.00	--
Pineapple squash(700 Ml)	25.80	25.00	*27.00	--
Tender Mango pickle(400 gm)	*29.50	28.75	24.00	24.00
Tender Mango pickle (200gm)	*19.00	18.00	18.50	13.00
Cut Mango pickle (400 gm)	*25.50	23.75	20.00	20.00
Cut Mango pickle (200 gm)	*15.00	14.00	14.00	11.00
Orange squash (700 ml)	25.80	25.00	*27.00	--
Lime pickle (400ml)	*25.50	23.75	20.00	20.00

* denotes the high priced product in each category.

Of the 8 items selected for the analysis, the products of Unit A stands to be high priced when compared to the price of other units. It shows that 62.5 percent of the products of Unit A are high priced compared to other brands in the market. However, it is also observed that all 5 products come under the category of pickles. This signifies that producing pickles are either costly for Unit A or is a highly demanded product in the market.

In the case of squash , the price of unit C's squash items were higher than that of the other units from which it can be inferred that 25 percent of the units products are comparatively high priced.

As mentioned in the beginning, the price of a product may go up when either the quality of product is good or the demand for the brand is high in the market. Regarding products like jam, the price of Unit B was the highest. By concentrating on very few items, Unit D has also been able to price the products at a lower rate.

Thus , it is observed that the unit which has the highest product mix has more number of high priced items whereas the unit which has the lowest product mix has low priced products. When the raw material of the the unit is not a single produce , the chances of economies of scale is missing. This may lead to high price for the products. However, it can be confirmed only after a detailed inquiry is made into the factors contributing to high pricing.

PART III

MARKETING EFFICIENCY OF FRUIT AND VEGETABLE PROCESSING INDUSTRIES.

Marketing efficiency is essentially the degree of market performance. It encompasses many theoretical manifestations and practical aspects. The efficiency of a market structure can be understood from two angles mainly. One is whether it fulfils the objectives assigned to it or expectations from the system at minimum, possible cost or maximises the fulfilment of objectives with given level of resources. Secondly, whether it is responsive to impulses generated through environmental changes and whether impulses are transmitted at all levels in the system.

Expectations from or objectives assigned to the system are of critical importance in assessing the efficiency because various participants have different expectations from the system, which quite often conflict with each other. Producers expect quick market clearance and higher prices for their produce. Consumers expect ready availability of products in the form and quality desired by them at lower prices. Traders and other functionaries expect steady and increasing incomes and government expect the system to safeguard the interest of all the above mentioned functionaries.

The term marketing efficiency refers to the effectiveness or competence with which a market structure performs its

from producers to consumers at the lowest possible cost, consistent with the provision of the services desired by the consumer. A change that reduces the costs of accomplishing a particular function without reducing consumer satisfaction indicates an improvement in the efficiency. A higher level of consumer satisfaction even at a higher marketing cost may mean increased marketing efficiency if the additional satisfaction derived by the consumer outweighs the additional cost incurred on the marketing process.

An efficient marketing system is an effective agent of change and an important means for raising the income levels of producers and the levels of satisfaction of consumers. It can be harnessed to improve the quality of life of the masses.

This part analyses the marketing efficiency of the fruit and vegetable processing industries. The most commonly processed items like mango and pineapple and its major products jam, squash and pickle are picked out of the product mix to collect informations and to be more specific in the analysis.

Though the product range of all four units vary, as referred in part II, the analysis and study can be justifiable only when the whole process is traced. Since the procurement practices were analysed focussing mango and pineapple, the marketing efficiency of the units are also based on these products. The products selected for study is justified by the fact that the percentage share of jam, squash and pickle is the highest though

percentage share of jam, squash and pickle is the highest though items like, canned titbits, slices, crushes, syrup and juice also are produced by these units.

For an analysis of the marketing efficiency of the processing units, the channels of distribution was also included in the study. Six dealers, 25 retail outlets and 100 consumers were interviewed using a pre-structured schedule.

Tools like percentages, averages and non-parametric tests like Freidman test are used in the analysis. Descriptive approach is also employed to present the response of processing units numbering only 4 and dealers numbering 6.

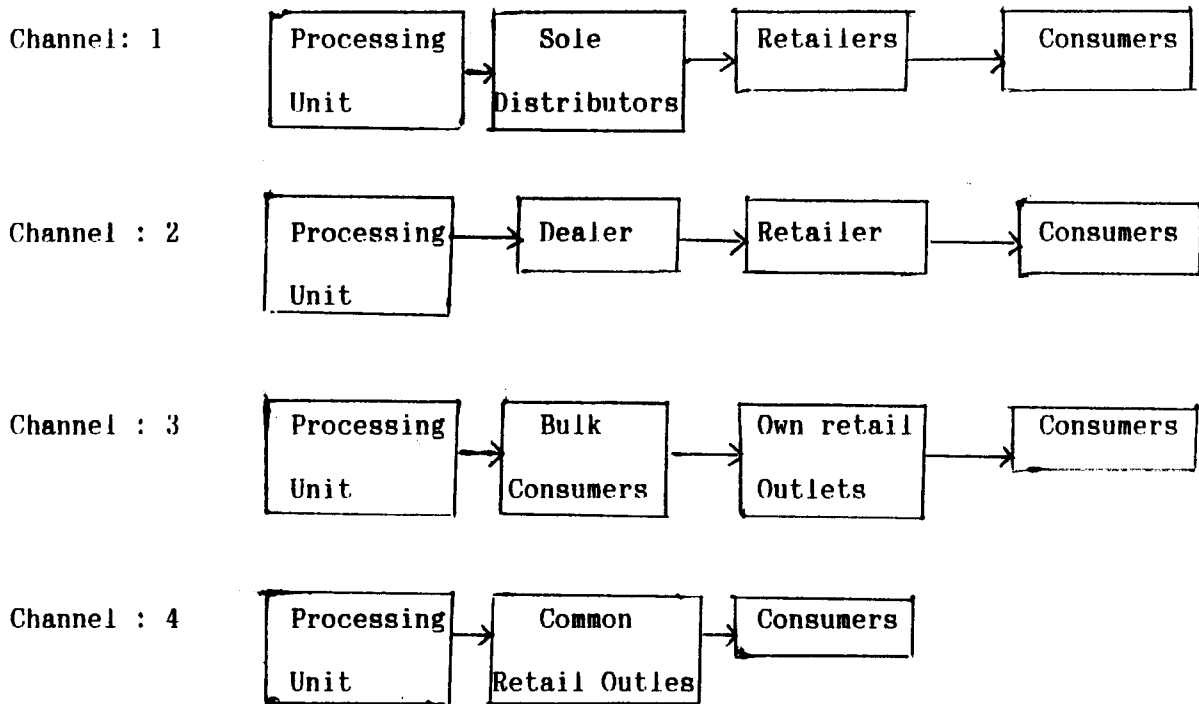
This section thus includes the following:

1. Identification of channels involved in distribution.
2. Examining channel efficiency using price spread analysis.
3. Consumer response analysis using percentages, F-Tests etc.

Identification of distribution channel.

The channels were identified based on the informations provided by the unit heads. Presented below in chart 6 is the four main channels that existed in the processing sector for marketing of processed products. Almost 80 percent of the products were sold within the district. The rest 20 percent sales of Unit A had moved outside Kerala while that of Unit B had moved to Northern districts of Kerala, as estimated by these units.

Chart:6 DISTRIBUTION CHANNEL FOR PROCESSED PRODUCTS



The channels identified in the chart is the normal distribution channel of the processing industries. However, a case by case analysis is attempted here based on the functions performed by each channel.

Functional analysis:

Based on the identified channel in each unit's marketing network, a surface analysis is done here to capture the functions performed by each intermediary in the channel.

Channel 1:

This channel is constituted by sole distributors and retailers in the distribution network. The products manufactured by the processing unit is handed over to the sole distributor. The main function of the sole distributor is procurement of products from the processing unit and marketing them through the retailers on a commission basis. All range of products manufactured by the Unit is distributed through this intermediary who arranges transportation and storage facilities at his cost. The peculiarity of this intermediary was that only the products manufactured by a single firm will be dealt with thereby acting to be an extension of the marketing set up of that unit. However, the commission rates/margin of the sole distributor was on the higher side since all marketing costs like transportation of products from the unit to the distributors godown and further distribution to retailers, storage charges etc. are met by this intermediary.

The products are distributed to retailers, based on the orders placed orally, at prefixed intervals. However, the distribution is also often effected by the personal relationship between retailer and distributor. In cases where intimacy exists between the two, products are delivered at the likes of distributor.

Inspite of this, the profit to be realised by the unit is considerably reduced due to high margin demanded by the distributor.

Channel 2:

Though the number of intermediaries involved in Channel 2 is same as in Channel 1, the distributor is replaced here by a dealer. The major difference between a sole distributor and dealer is that, the dealer takes up marketing of products of local and national brands at a time. This helps to reduce the marketing costs since there is participation of more than one unit. Also, facilities like storage, transportation and distribution to retailers etc are common to products of all units.

The greatest advantage of the system is that, the dealer is well aware of the market price and strategies of various units. The processing unit often consult with the dealers before fixing the maximum retail price (MRP) of the product so as to fix a competing price.

The marketing strategy formulated by the unit is implemented through the dealers. However, the dealers have freedom to market the products using any promotional strategy to promote sales. This risk and responsibility of the dealer is but dependent on the margin provided to them by the processing unit. Higher the margin, better the sales. The margin often ranges from Rs.6 to Rs.8/- per bottle of a product. The 'free case' technique is the most popular strategy used by dealers. For every dozen case of products sold, a case containing 12 to 24 bottles are offered free of cost to the retailer.

The role of retailer in sales promotion is that, brands that offer greater returns are sold out in larger numbers through word-of-mouth promotion. Indirectly, this system blocks the market share of other brands through lack of promotion at the final point of sale. However, most brands prefer Channel 2 in their marketing network due to reasons mentioned above.

Channel 3:

There is a direct link between the processing unit and the consumers in Channel 3. Own retail outlet dealing with all range of products produced by a single unit is the peculiarity of the system. The advantage of the system is that there is complete elimination of intermediaries, helping the unit to reduce the market price of the product. It would help to increase the profit of the unit. But, the system demands own transportation facilities, additional employees and establishment and operational costs for the outlet. This offsets the advantage gained from elimination of middlemen. Another defect of the system is that, unless a wide network of retail outlets are established, the system will limit the reach of consumers. Also, there is little choice in brand selection. However, when bulk sales occur, absolute advantage over profit is gained by both the processor and the consumer.

Channel 4:

As in channel 3, there is direct link between the processor and the retailer in Channel 4. The processor himself distributes the products to the existing retail outlets in the district. The promotional strategy of the Unit is implemented through retailers by word-of-mouth promotion. Since the incentives are provided to the retailers directly, there is enthusiasm among retailers to promote the product. The orders for each week are placed during previous delivery.

The disadvantage of the system is that since the unit takes to direct delivery, all marketing costs are to be met by the unit itself. This reduces the profit gained through elimination of intermediaries. Another disadvantage is that the frequency of distribution is lessor. Though the processing unit is able to correctly estimate the demand for his product in the market, it is a tedious task for bigger units to supply products directly to the retailers in the whole district. In such cases, emergence of sole distributor or any intermediate becomes an essential element.

Channels adopted by Units:

Channel 1 was adopted by Units A and B in the initial stages of marketing. The sole distributor was employed by these units and the finished products would move to their destination from where further distribution to retailers is effected. The

sole distributor is entrusted the distribution of products manufactured/produced by his employer. Since the processing unit had only limited range of products, then the sole distribution system proved to be a bit expensive. Since all marketing costs like transportation, distribution, storage etc. were to be met by the unit, alone through high rates of commission, this prompted them to select other channels that existed in the industry.

Products of national brands like Kissan and Maggie, had the distribution network in the district years ago. Deployment of the same channel for distribution and marketing was suggested as a way out for Unit A. So Channel 2 was adopted by Unit A followed by Unit B too. The advantage in employing Channel 2 was that the processing units were relieved from the responsibility of marketing their products. The marketing strategies to be adopted for each product was developed by each Unit but were implemented through the intermediaries in Channel 2.

Unit C and Unit D followed separate channels as depicted in Chart 5. Unit C took up Channel 3 where they went in for own showroom sale set up for the purpose. The whole district had only this single retail outlet with its location in the heart of the City. A portion of the products were sold by the Unit directly to canteens, hotels and hostels also when orders for bulk quantities were received.

The marketing network of Unit D was entirely different, and they went in for Channel 4. Set up on a small scale and with only 4 products namely pickles, squash, jam and juice, the dependence was upon the existing retail outlets. The Unit operated on a small scale but was able to attract the rural consumers by maintaining the quality of pickle matching the homely taste with lesser oil content. When procurement price of raw materials and production cost went up, the unit took up producing of synthetic syrups and squash, thereby reducing the reliance on fresh fruits and vegetables as raw materials. However, the unit continued to produce pickle using these raw materials since the market demand for the product was found to be high.

The channel followed by Unit D was similar to that of Unit C, since direct method of distribution was adopted. However, difference did exist between these channels. When Unit C preferred the distribution channel to be their own, Unit D made use of the existing retail outlets in the district concentrating more on rural consumers.

On the basis of functional analysis, it can be inferred that Channel 4 is the most effective Channel in marketing of processed products since it combines the good of all the other prevailing systems. In spite of this, it cannot be ignored that Channel 4 limits the area of operation of the Unit and the market for the product. A single person cannot cater to all the retail outlets

in the district as the frequency of visits will be limited to once a month resulting in locked up capital for a longer period, which probably can be used for increasing production. When Channel 4 can be adopted as the model for smaller Units, Channel 2 will prove better for bigger Units where the marketing network is larger. But ways to decrease the Channel cost should be worked out to make it more efficient and effective.

The marketing efficiency of the Channel cannot be derived fully through a functional analysis alone. An economic analysis is necessary to find out the exact cost and profit margin to make the processing Unit economically viable. Though the functional analysis mentions the expenditure to be high or low for each channel, the percentage of increase or decrease is not known from such an analysis. So the price spread analysis is done to evaluate the Channel on economic terms thereby making provision for selecting the efficient marketing channel suitable to each category.

Price Spread Analysis: Processed Products

An efficient marketing system is a pre-requisite for sustaining the tempo of increased agricultural production. This ensures fair returns to the farmers for their efforts. It is equally applicable in the processed products too. The economic efficiency of the marketing system is generally measured in terms of the price spread for agricultural commodities. The smaller the price spread, the greater the efficiency of the marketing

system. This price spread, besides being influenced by such marketing input, as storage, transportation charges etc., changes with the shifts in the demand for and/or in the supply of the product.

Price spread refers to the difference between the two prices. In this section the difference in price paid by the consumer and price received by the processing unit shows the price spread for processed fruit and vegetable products. A study of the price spread involves not only the ascertainment of the actual prices at various stages of the marketing channels, but the costs incurred in the process of movement of the produce from processor to the consumer and the margin of various intermediaries.

Such knowledge will be helpful in identifying the reasons for high marketing cost and the possibilities of reducing them can be worked out.

Each unit produces a number of products and they are presented in Part II of the study. For working out the price spread, three products mainly jam, squash and pickle are selected based on their share in the total products. Also, one of these products are produced by all four processing units making it easy for comparison between the units. Products prepared out of mango and pineapple, two locally available raw materials, are used so that a continuity from raw material to final product is maintained. The price used for analysis is the

sales price at each level of intermediary and is a part of primary data.

The marketing costs in each channel is presented in table which will help to identify the costs that can be reduced for increasing the profit and marketing efficiency of the system.

Table:4.10 Marketing Costs and Margin

Marketing Costs /kg	Channel			
	1	2	3	4
- Transportation Costs	.30	.30	--	--
- Storage charge	.25	.15	.30	.25
- Distribution cost				
i) Transportation cost (fuel vehicle etc.)	.50	.30	.50	.50
ii) Wages (Driver, sales representative etc.)	.25	.15	.25	.25
iii) Miscellaneous	.25	.15	.35	.25
iv) Loading/Unloading costs	.25	.15	.25	--
v) Damages/breakage of bottles	.35	.25	.15	.25
- Other costs				
i) Salary of Accountant	.25	.15	.10	--
ii) Incentives to staff/ retailer	.25	.15	.10	
iii) Fixed cost for godown	.35	.25	--	--
- Cost for establishing own retail outlet	--	--	3.00	--
- Promotional cost	1.00	1.00	40	1.00
- Sole distributors margin	2.00	--	--	--
- Dealers margin	--	1.25	--	--
- Retail margin (average)	2.00	2.70	3.00	2.00

It is seen that the marketing cost was the highest for channel 3 followed by channel 1. Channel 4 was less expensive. The marketing margin was high for channel 1 whereas it was the least for channel 3. The promotional cost of channel 3 was also the lowest.

However, the cost of establishing own retail outlets throughout the district or State will certainly result in increased price of the product. The establishment cost of the single retail outlet set up by the Unit C itself is on the higher side. Channel 4, though less expensive, might prove to be expensive when employed by big units since the functional analysis revealed that it was more conducive for small units whose market is limited.

Under these circumstances, Channel 2 can be tested for all units since the marketing costs are found to be comparatively lesser than Channel 1, and the functions performed by it was found to satisfy the processors and consumers needs which was revealed through the functional analysis. So the price spread analysis examines the present channel employed by each of the selected units in comparison with channel 2 to test its economic efficiency.

Table 4.11 presents the price spread in channel 1 when this channel was employed by Unit A.

Table : 4.11

Unit A

Channel 1

	Pineapple Jam (500gm)	Pineapple Squash(700ml)	Tender Mango Pickle(400gm)
Production	16(61.5)	22(68.75)	18(64.38)
Profit Margin of the Unit	2(7.7)	2(6.25)	2(7.14)
Units sale Price	18	24	20
Sole Distributor's margin	2(7.7)	2(6.25)	2(7.14)
*Marketing costs	4(15.4)	4(12.5)	4(14.2)
Retailer's purchase price	24	30	26
Retailers Margin	2(7.7)	2(6.25)	2(7.14)
Consumer	26(100)	32(100)	28(100)

*See Table 4.10

The percentages shown in brackets in the above table shows that around 30-40 per cent of the consumer price is taken away by the intermediates or in effect the cost involved in disposing the product to the consumers. The marketings cost is calculated as an average of all costs including transportation charges, loading and unloading charges, promotional and storage charges

and so on. This information on marketing costs was collected from the distributor who maintains a split up of costs in order to calculate the sale price of each products. The margin marked for sole distribution is the commission paid for the risk and responsibility undertaken in the distribution of products in the whole district.

The analysis shows that in channel 1, the margin is fixed in absolute rupee terms instead of percentage commission terms. The analysis now focusses on channel two for the same unit where margin is fixed in commission term at the dealer level and rupee terms at retailer level.

Table :4.12

Unit A

Channel 2

	Pineapple Jam(500gm)	Pineapple squash(700ml)	Tender Mango pickle(400gm)
Production cost	16(61.5)	22(68.75)	18(64.4)
Profit margin of the unit	4(15.5)	3.75(11.75)	3.75(13.39)
Dealers Purchase Price	20	25.75	21.75
Dealers Margin *(inclusive of marketing costs)	3.25(12.5)	3.25(10)	3.25(11.6)
Retailer's Purchase Price	23.25	29	25
Retailers Margin	2.75(10.5)	3(9.5)	3(10)
Consumer Price	26(100)	32(100)	28(100)

Keeping the consumer price and production cost constant as in channel 1 the share of dealers and retailers is calculated in percentages to arrive at the margin earned by the processing unit. The price spread in Channel 2 shows that for all three products, the share of processing unit is higher when compared to other intermediates in the channel. This is because, the unit withholds the promotional cost of Re.1 and releases it to dealer only when the scheme is implemented.

A comparison between Channel 1 and Channel 2 reveals that Channel 2 is profitable for Unit A in the marketing of all three products since the margin enjoyed by the Unit A in Channel 1 is 7.7 percent for Pineapple Jam which is 15.5 per cent in Channel 2. In the case of pineapple squash, the percentages are 6.25 and 11.75, while for Tender Mango Pickle it is 7.14 and 11.6 percentage for Channel 1 and 2 respectively. It implies that Channel 2 can help the processing unit to earn better profit. Moreover, it can also be considered as an opportunity for reducing the consumer price through decrease in processors margin, and to increase the sales turnover of the products. This strategy is being used by the dealer which is clearly evident from the table that even when there was choice for him to increase his share in consumer rupee, his share is increased by increase in sales turnover and not by direct increase in his margin. Instead, the retailer's margin is kept high. Since all brands of products are distributed product price and margin of each brand is well known to the dealer. So there is more chance for increase, in sales by providing different varieties and choice which the sole distributor cannot. Moreover, all

marketing costs are cut down since there is sharing of costs between brands in the distribution process. Only transportation cost for collecting products from unit has remained the same for channel 1 and 2.

Being another big Unit, where channel 1 and 2 was adopted, the same Channels are tested for Unit B also by taking into account the production cost and consumer price for the 3 main products

of Unit B.
Table : 4.13

UNIT B

CHANNEL 1.

	Pine: Jam (500gm).	Pine:Jam (700 ml).	Tender Mango Pickle (400 gm).
Production cost (inclusive of advt. charges)	17(63)	20 (66.8)	19.50 (66)
Profit Margin of Unit	2 (7.4)	2 (6.7)	2 (6.8)
Units Sale Price	19	22	21.50
Marketing Costs (see table)	4 (14.8)	4 (13.3)	4 (13.6)
Sole distributor's Margin	2 (7.4)	2 (6.7)	2 (6.8)
Retailers Purchase Price	25	28	27.50
Retailers Margin	2 (7.4)	2 (6.7)	2 (6.8)
Consumer Price	27	30	29.50

In Table 4.14, it is observed that the production cost, inclusive of media advertisement cost, for all three products ranged between 60 to 70 per cent of the consumer price. The marketing costs were the highest in the channel which was around 13 to 15 per cent. This increase in cost is because all expenses related to promotion are included in the marketing costs. This promotional cost is given to the sole distributor when products are procured by them for delivery.

Table : 4.14

UNIT B
CHANNEL 2

	Pineapple Jam (500 gm)	Pineapple Squash (700 ml)	Tender Mango Pickle (400 gm)
Production Cost	17 (63)	20 (66.8)	19.5(66)
Profit margin of Unit inclusive of Advertisement cost(media)	4 (14.81)	3.75(12.5)	4.45 (15)
Dealer's Purchase Price	21	23.75	23.95
Dealer's Margin and Marketing Costs(See Table)	3.25 (12)	3.25 (10.83)	3.25 (11)
Retailer's Purchase Price	24.25	27.00	27.10
Retailer's Margin	2.75(10)	3 (10)	2.40 (8)
Consumer Price	27 (100)	30 (100)	29.50(100)

Unit B earns a better profit from channel 2 when compared to channel 1 since the share of unit in consumer price is higher in channel 2 when the profit margin of unit is taken into account. It is comparatively higher and there is sufficient margin provided to promote sales at the final sale point.

The analysis on Channel 1 and 2 for both Units A and B, brings out an interesting result. The share of dealers, distributors and retailers are higher for Pineapple Jam when compared to other products whereas the processing Units enjoys a better share in Tender Mango Pickle from both channels.

Since Channel 2 has proved to be economically viable for Unit A and B, the same Channel is tested for Unit C and Unit D in comparison with the actual Channel used by them in the marketing.

Unit C

Channel 3

Table : 4.15

	Pineapple Jam (500 gm)	Pineapple Squash (700 ml)	Tender Mango Pickle (400 gm)
Production Cost	14.75(59)	16.20(60)	16.20(60)
Unit's Margin	3.75(15)	4.10(15)	4.10(15)
Marketing Costs	2.5(10)	2.7(10)	2.7(10)
Retail Margin (Establishment, Operational, Promotional Costs etc.)	4(16)	4(14.8)	4(14.8)
Consumer Price	25(100)	27(100)	27(100)

Even when the production cost was only around 60 per cent, much lesser than Unit A and Unit B, an absolute margin of 15 per cent was earned by Unit C at the processors level. The retail margin, though reflects a high per centage with 14.8 to 16, it was inclusive of all costs related to retailing which obviously reduces their profit share. 10 per cent of the consumer price went to make up the marketing costs. Unit C tried to promote the products by using the brand name "Sudha" of an established firm in the district. So the retail margin is the share of 'Sudha Products' who supports Unit C by providing final packing materials and labels in their brand name. An analysis of unit C on testing the channel 2 which proved to be economically efficient for Unit A and Unit B is also undertaken.

Channel 2

	Pineapple Jam (500 gm)	Pineapple Squash (700 ml)	Tender Mango Pickle (400 gm)
Production Cost	14.75 (59)	16.20(60)	16.20 (60)
Profit margin of Unit inclusive of Advertisement cost(media)	4.6 (18)	4.85(18)	4.85(18)
Dealer's Purchase Price	19.35	21.6	22.4
Dealer's Margin and Marketing Costs(See Table)	3.25(13)	3.25(12.03)	3.25(12.03)
Retailer's Purchase Price	22.5	24.3	24.85
Retailer's Margin	2.5(10)	2.7(10)	2.7(10)
Consumer Price	25(100)	27(100)	27(100)

Presented in table is the price spread in Channel 2, calculated for unit C. The marketing cost and margin are calculated based on the assumption that, being a unit run by a co-operative society, the costs are met from the profit earned by the society and the margin also includes the percentage of dividend that has to be distributed to member farmers. The table reveals that the margin earned by the processing unit is much higher for unit C in the case of all three products. The range

of percentage varied between 18 and 23 which shows that around 80 per cent of the consumer price was at the processors reach.

A comparison between channel 3 and channel 2 is made which also shows that there is much advantage for the processor if channel 2 is selected for distribution. The profit margin of unit C is only 15 per cent at the processors level in channel 3 whereas it is 18 per cent in channel 2. Also, it cannot be ignored that the distribution network is limited to a single outlet in channel 3 whereas there is more frequent movement of goods in channel 2 since the retail outlets are scattered all over the district. The fact that certain amount of risk lies with the dealer and not the processor in channel 2 is also of much importance.

By focusing on channel 2, the economically viable channel, as analysed for units A, B, and C, the same channel is tested for unit D also so as to compare it with the presently employed channel of unit D for selecting the best channel for the unit. So channel 4 and channel 2 are presented below.

Table:4.17

UNIT D
CHANNEL 4

	Tender Mango Pickle (400 gm)
Production Cost	14(58.3)
Profit Margin of Unit	5.5(23)
Marketing Costs	2.5(10.4)
Retailer's Purchase Price	22
Retailer's Margin	2(8.3)
Consumer price	24

Unit D focussed on producing pickles like Tender Mango, Cut Mango and Garlic Pickle. Items like pineapple jam and squash were also processed by the unit in the initial stage. But when the production cost started rising up, the unit concentrated more on pickled items. So the price spread is calculated only for Tender Mango Pickle, the common item processed by all four units. Also, this item of unit D is highly demanded in the market.

Table 4.17 on channel 4 shows that the margin for the processing unit is 23 per cent, which is the profit of the unit calculated on the consumer price. The production cost being 58.3 per cent, the total share of the unit in final retail price is 81.3 per cent. The rest 18.7 per cent is constituted by the marketing cost and the retailers margin which is comparatively lesser than the processing unit's margin.

In table A-18, is presented the price spread in channel 2 for unit D. Price spread is higher than that in channel 4 since the processors share is only around 18.12 per cent whereas it is 23 per cent in channel 4. This shows that channel 4 is more efficient for unit D.

Table: A-18

Unit D

Channel 2

	Pineapple Jam (500 gm)	Pineapple Squash (700 ml)	Tender Mango Pickle (400 gm)
Production Cost			14(58.3)
Profit margin of Unit inclusive of Advertisement cost(media)			4.35(18.12)
Dealer's Purchase Price			19
Dealer's Margin and Marketing Costs(See Table)			3.35(13.54)
Retailer's Purchase Price			22
Retailer's Margin			2.4(10)
Consumer Price			2.7(10)

This indicates that channel 4 is the best channel for smaller units while channel 2 is better for bigger units.

Comparative Analysis:

Based on the price spread analysis worked out for various channels for the selected processing units, a comparative, product-wise analysis is attempted here to find out the unit that functions most efficiently in the marketing of processed fruit and vegetable products using channel 2 as the basis of analysis.

Production Cost Vs Consumer Price:

Pineapple Jam:

The production cost of unit C is the lowest with 59 per cent share in consumer price whereas it is highest for unit B with 63 per cent. But it should be noted that the production cost of unit B is inclusive of advertisement costs incurred for promoting the products through mass media. When all other units depended on word-of-mouth promotional strategy at the retailers level, unit B depended both on the word-of-mouth promotion and promotion through other media. This is evident from the retailers margin of around 10 per cent equally applicable to all units.

Table:4.19

Channel 2

Percentage Share in Marketing Pineapple Jam.

Unit/Cost	Unit A	Unit B	Unit C	Unit D
Production Cost	61.5	63	59	--
Unit's Margin	15.5	14.81	18	--
Dealer's Margin	12.59	12	13.00	--
Retailer's Margin	10.5	10	10	--
Consumer Price	100	100	100	--

The processors margin is but the highest for unit C with 18 per cent share in the consumer price. Also, unit C's total share in final price was around 75 per cent signifying that only 25 per cent was used for marketing pineapple jam when channel 2 is employed.

Pineapple Squash:

As per table 4.20, the production cost and marketing margin of the processor is the highest for unit A with 80.5 per cent of consumer price going to the processor. It is also noted that the total share of all three units were around 80 per cent signifying that the intermediate's cost was only 20 per cent when channel 2 is engaged in the marketing of pineapple squash.

Table : 4.20

Channel 2

Percentage Share in Marketing Pineapple Squash.

Unit/Cost	Unit A	Unit B	Unit C	Unit D
Production Cost	68.75	66.8	60	--
Unit's Margin	11.75	12.5	18	--
Dealer's Margin	10	10.83	12.03	--
Retailer's Margin	9.5	10	10	--
Consumer Price	100	100	100	--

Tender Mango Pickle:

The share of channel 2 in the consumer price paid for tender mango pickle is presented in table below:

Table :4.21

Channel 2

Percentage Share in Marketing Tender Mango Pickle

Unit/Cost	Unit A	Unit B	Unit C	Unit D
Production Cost	64.4	66	60	58.3
Unit's Margin	13.39	15	18	18.12
Dealer's Margin	11.6	11	12.03	13.54
Retailer's Margin	10	8	10	10.04
Consumer Price	100	100	100	100

The price spread in tender mango pickle reveals that, when channel 2 is employed, the production cost of unit B is the highest. However, the profit margin of unit C and D is higher than that of unit B. The production cost and margin together is the highest for unit B when it is the lowest for unit D. Dealer's and retailer's margin is but the highest for unit C. Indirectly, it means that when channel 2 is employed by unit D, the satisfaction from returns will be the highest for all market functionaries in the channel. However, the comparison of channel 4 to channel 2 proved that channel 4 was better for smaller units.

Finally, the measurement of channel efficiency revealed that:

1. Channel 2 was the most efficient channel for big units and channel 4 for smaller units on the basis of functional analysis.
2. The price spread analysis also revealed that channel 2 was economically profitable for big units. Though channel 4 proved to be the best channel for smaller units on economic terms, the limitation in direct retailing cannot be ignored.
3. Share of processing units in consumer price was the highest for tender mango pickle. However, the production cost was the least for pineapple jam.
4. The retailer's share in consumer price was the almost equal for all units in tender mango pickle when the share in pineapple jam was higher for the dealers.

CONSUMER RESPONSE TO PROCESSED ITEMS

This section of the study is devoted to an analysis on consumers response to processed items. The study had focused on fruit and vegetable products with specificity on products prepared and marketed by processing locally available raw materials. Part I, Part II and the earlier section of Part III analysed the processing sector by tracing the whole channel involved in the sector. From farmer - the producer of fruits and vegetables, to processing units - the processor of fruits and vegetables and from these units to retailers - on the marketing of processed items, some analysis have already been attempted. It would be meaningless if an attempt is left out on the consumers side because any edible product, be it manufactured or processed, raw or cooked, it has to have a consumer. All business firms aim at maximising their consumers satisfaction without which movement of products from the producers point cannot be effected. When profit maximising also is one of the main objectives of a concern, marketing of products gains more importance since market share in the industry is one of the indicators of profit making.

In the earlier sections, having already identified and examined the marketing efficiency of the processing industry, the analysis would be complete when an attempt on the consumer response is also taken up. The marketing efficiency in other words, is also reflected through consumers response to each product and brand in the market. So this section presents the consumers response to processed items and existing brands in the industry.

The sample size selected for the study was 100. To avoid bias in selecting the consumers response was collected at the Pooyum Festival Exhibition Centre, where thousands of people visit daily. A large sample of 250 consumers were contacted in the initial stage and from among this 100 numbers were selected. Pre-structured questionnaire was used for collecting information from them. Percentages and Friedman Anova test is applied where possible. But, generally the approach here is that the analysis is made simple so that any processor, new or existing, can easily get a clear picture about the consumers in the sector. Moreover, this section is made simple so as to enable the new entrants in the business to undertake market studies before entering the field.

Consumer Response

The items that are most preferred in the industry is identified and the items commonly purchased is presented in Table 4.22.

Table 4.22 Items of Purchase

Jam	Squash	Pickle	Sauce	Dried	All
76	85	91	21	8	7

(figures in percentages)

Of the 100 consumers, 91 percent purchased pickle while 85 percent went in for squash and 76 percent for jam. It does not

mean that these are the only items that are purchased by them. The percentage of consumers for dried products were very less with only 8 percent making purchase of such products. Pickle is demanded the most since spicy pickles are part of typical Kerala lunch. In part II also the results showed that the share of pickled items was high in the product mix of all 4 units selected for the study. The second and third position was shared by squash and jam respectively. It explains that consumer preference for the item is the basis of the mix of unit.

The frequency of purchase is summarised in Table 4.23. From among the various processed items, pickle is purchased more frequently since 56 persons opined that pickle was purchased on a monthly basis while dried products were purchased only by one person on a regular monthly interval. 57 consumers purchased jam occasionally while for squash only 25 people went in for occasional purchase. Squash was more demanded in summer season. The table also reveals that not much of the processed products are preferred in summer except squash and jam.

Table 4.23

Frequency of Purchase

Product	Monthly	Occassionaly	Summer	Bimonthly	Total
Pickle	56	28	0	1	91
Sauce	3	15	0	3	21
Squash	9	25	46	3	85
Jam	11	57	8	2	76
Dried	1	7	0	0	8
All	1	4	0	2	7

In Table 4.24 below the usage pattern of processed items are presented to capture the need and use of each product.

Table 4.24

Usage Pattern

Product	Occassi- onal	Break- fast	Lunch	Evening Tea	Supper	Guest	Lunch & Supper	Total
Jam	47(62)	9(12)	--	13(17)	--	7 (9)	--	76(100)
Squash	17(20)	--	--	--	--	68(80)	--	85(100)
Pickle	28(31)	--	34(38)	--	15(16)	--	14(15)	91(100)
Sauce	12(57)	6(29)	--	2(9.5)	--	1(4.5)	--	21(100)
Dried	8(100)	--	--	--	--	--	--	8(100)

Many respondents could not classify their usage for specific

purpose since processed items were not considered to be a daily in use product. So the respondents categorised it under the head occasional. From among the various products jam was used occasionally by 62 per cent of consumers while pickle was classified under it by 30 percent alone. The percentage of respondents who went in for serving the guests with squash were 80 percent. 38 percent consumers preferred pickle with lunch while 29 percent went in for sauce and 12 percent for jam with breakfast. Jam was also preferred by 17 percent of the respondents for evening tea with bread. Sauce was also preferred by 9.5 percent with snacks for evening tea. Pickle was the only item preferred for supper since majority of Keralites generally go in for meals at night.

The preference of processed fruit and vegetable products also was highlighted in occasions like party, tours and even in daily diet. In Table 4.28 the occasions of preference is presented.

Table 4.28 Occasions of Preference for Processed Fruit/
Vegetable

Party	Tours	Vacation	Holidays	Daily Diet
98	79	5	2	63
(Jam, Squash, Sauce, Pickle)	(Jam, Squash, Pickle)	(Jam, Squash, Pickle)	(Squash)	(Pickle)

Of the 100 respondents, 98 percent preferred either of the processed items during parties organised at home or elsewhere. Products like Jam, squash, sauce and pickle were in demand on such occasions. The consumers of processed items also find tours as an opportunity for using jam and pickle. Pickle formed part of the daily diet for 63 percent of consumers. The consumption pattern of consumers in Kerala can be clearly drawn out from this table. Only 5 percent preferred processed items like jam during vacations and 2 percent during holidays. It indicates that convenient food is preferred by Keralites when there is a busy schedule. 'Chutneys' and 'Chummundies' find place in the Kitchen with Dosa and Iddali instead of bread and jam on leave days.

Having analysed the preference and usage of processed fruit and vegetable products, it would be worthwhile to test the period of popularity of each product. Table 4.26 presents the usage period of each product. This analysis will also help in finding out solutions to processors problems when going in for an exposure through media. The decision making process is made easier since only selected products need intensive promotional strategies for getting established in the market.

Table 4.26

Usage period

Product	1-3 years	3-5 years	5-10 years	11-15 years	Above 15 years
---------	--------------	--------------	---------------	----------------	----------------

Jam	14	44	20	18	4
Squash	--	45	40	15	-
Pickle	--	--	14	18	59
Sauce	24	3	--	--	--
Dried	16	7	16	19	42

The items prepared from fresh fruits and vegetables in the early years were pickles and dried items. 59 percent had started using pickle 15 years back itself while 42 percent used dried products from then on. It gives a guideline to the processors that these items need no exposure as newly introduced item. Sauce was an item which became part of the diet of Keralites in the recent past. Jam and squash also had entered the field fairly long back but gained popularity only gradually.

The reason for preference of each product was also tested in order to know what attributes are appealing to the consumers to stick on to a particular brand. So five main attributes were ranked by the respondents and Friedman Two way Anova table is applied here for the analysis.

Table 4. 27 Reason for preference of products

Quality	Price	Availability	Taste	Package
170	298	309	231	496

Five attributes were identified by the consumers as most important for any processed item to be in the market. Then the consumers were asked to rank those attributes in order of importance so as to test whether significant difference exists between attributes and if so which attribute contributed the most in preferring a brand. The lowest rank 1 was given for the highest preference moving to 5 for the least preferred.

The Friedman Two way Anova test indicates that the calculated value of 8.33 was greater than table value of 1.96 at 1 per cent level of significance and 2.58 at 5 per cent level of significance. It shows that significant difference do exist between the five attributes of any brand.

Since significant difference was spotted, the most considerate attribute was put to test. Table 4.27 reveals that quality is the most important factor that influences the brand preference as the rank total of 170 was the lowest for quality. Taste is ranked second with 231 points followed by price. Product package was the least influential from among the 5 identified attributes. Thus, the analysis clearly states that any processed item and its brand gains a permanent place in the

market if its quality and taste suits the consumers choice. Consumers will also be ready to pay more for a high quality product of any brand. But the extent to which the price increase can be tolerated cannot be found out from this analysis.

However, suggestions were forwarded for improving the product package to suit the preference and convenience of the customers. They are as follows:

1. Glass bottles of jam, squash and pickle to be replaced by transparent plastic bottles.
2. Squeeze tubes to be introduced for packing jams to suit travellers convenience.
3. Oil absorbants to be used while packing/bottling pickles to safeguard leakage.
4. Bulk packing to be used instead of bottling for larger quantities to reduce cost of packaging material.

To analyse the brand preference among existing brands, the consumers were asked to identify the brands which were preferred the most. Since the product quality of each brand varies with difference in composition of ingredients to make each product unique, product wise brand preference is to be estimated for a clear understanding. Table 4.28 summarises the buying pattern of each product among consumers.

Table 4.28

Buying Pattern

Product/ Brand	Caico	Kalyan	Kissan	Home-make	Others
Jam	10	55	45	6	5
Squash	15	22	70	8	2
Pickles	70	5	-	82	20
Sauce	-	-	5	-	16
Juice	1	-	-	-	72
Dried	-	-	-	38	8

It is seen that there was no absolute preference for any brand of each product since the total respondents for each product come above 100. It means that there is multiplication of brand preference among consumers. Such an attempt is made in the latter part by finding out reasons for such an overlapping in purchase behaviour. It is observed from Table 4.28 that 82 respondents preferred home-made pickles. Though pickles are commonly prepared at home, respondents opined that they also went in for branded pickles. 70 respondents preferred Caico brand pickles while 5 went in for Kalyan. However, Kalyan jam was preferred by 55 respondents when 45 went in for Kissan and 10 for Caico also. Kissan had the monopoly in squash items as 70 respondents preferred this brand. Maggie was more popular among consumers when preference for sauce was identified.

The table gives an overall picture that Kissan squash, Kalyan jam and Caico pickles were demanded by the consumers and brand preference is highlighted through this response. Home-made products being non-branded items, are prepared at home as part of their dietary requirements. Though brands like Priya, Palat, Happy, Dipy's, Maggie, Namboodiri's etc. are familiar among consumers, these brands have not gained a good market share. However, they can be considered as brands which can be competitors to the existing products in the near future.

Among products, consumers are not brand aware about sun-dried items and juice whereas sauce is an item which is in the process of attaining popularity. However, sun-dried items and juice is prepared and consumed in the households itself.

The consumer response to continuing with the present brand and need for a shift in future is also exposed to know the behavioural pattern in deciding the brand. Data pertaining to this is summarised in Table 4.29 and 4.30

Table 4.29 Shift in brands

Product/ Response	Total Respondents	Yes	No
Jam	76(100)	72(94.73)	4(5.26)
Squash	85(100)	80(94.11)	5(5.88)
Pickle	91(100)	78(85.71)	13(14.28)
Sauce	21(100)	1(4.76)	20(95.23)
Dried	8(100)	8(100)	-

Table above reveals that from among the respondents who went in for purchase of each product, there was shift in the case of all products. The maximum shift in brands occurred for jam and squash. 95 per cent of the consumers of sauce opined that they did not shift from one brand to another. The reason can be attributed to the fact that the use and brand awareness of sauce is limited to few.

Table 4.30 presents the feelings expressed by the respondents on the need for a shift from one brand to another.

Table 4.30 Need for shift of brand in future

Product/ Response	Yes	No	Depends	Total
Jam	39(51.3)	4(5.3)	33(43.42)	76(100)
Squash	27(32)	18(21)	40(47.5)	85(100)
Pickle	20(22)	16(18)	55(60.4)	91(100)
Sauce	2(9.5)	10(47.65)	9(42.85)	21(100)
Dried	8(100)	-	-	8 (100)

51 per cent of the consumers felt that there is need for shift in future in the case of jam. 47.6 per cent feels that there is no need for a shift in the case of sauce. For dried products there is an absolute opinion for changing the brand. The fact that no popular brands exist and due to high dependence on home made products, the opinion for shift in future can be

attributed to the demand for a specific branded dried product.

In the case of pickle and squash, 60 per cent and 47 per cent respectively felt that the need for shift in future depends on the performance of the existing brands and the then existing market conditions with respect to quality, price, taste and availability in their area. Though 51 per cent of respondents had opined that there is a need for shift in the case of jam 43.42 per cent opined that it depends on the market situation .

The respondents were also asked to mark whether their preference of brands was for national brands or for local brands. 89 of the respondents opined that there was no strict preference for national brand while 82 of them marked their preference for local brands.

Table 4.31 Preference of brand

National		Local	
Yes	No	Yes	No
11	80	82	7

The reasons cited for preferring local brands was the price and the taste of products. Local brands were conferring more to the taste of consumers, especially pickles. Oil used in national brands were not matching the taste of our consumers.

An attempt was also made to identify the popularity gained by the existing brands and to know the influence of publicity media in promoting and creating consciousness among consumers. Commonly used media were listed down and the respondents were asked to identify which of the promotional media contributed in popularising each brand. Table 4.32 presents the responses on the role of media.

Table 4.32 Brand Promotion

Brand/ Media	Word -of mouth	Magazines	Radio	Newspaper	TV	Other Advert- isements	All
CAICO	43	53	20	--	--	32	--
Kalyan	58	28	10	--	--	19	--
Kissan	7	18	30	28	45	14	9
Others	24	60	5	6	--	23	--

The table reveals that the dependence on television is confined to Kissan alone whereas Caico, Kalyan and other brands in the industry namely Palat, Priya, Maggie etc. depended more on word-of-mouth promotion during the early years of the study. It is also observed that magazines and radio are also used as promotional media. The other promotional media adopted by all brands include announcements during festivals, distribution of bit notices, promotional posters and exposure through display in exhibitions.

From the table, it can also be inferred that except Kissan, all other brands restricted their exposure to consumers within the state alone. The word-of-mouth promotion can well be correlated to this and the retailers opinion on 'free-case' offer as an effective promotional tool.

The respondents were also asked to give opinion about the necessity of advertisement to promote processed fruit and vegetables. Table 4.33 shows that 89 of them opined that advertisement was essential while 11 said that even without advertisements processed items would move in the market. Promotional tools either in the form of advertisements or through direct sales promotion techniques is a necessity for the processing sector to create awareness about the product peculiarities of each brand among consumers.

Table 4.33 Need for Advertisements

Yes	No
89	11

To identify the target group for focusing the promotional strategies of the units to boost sales, the decision market for purchase of product should be identified. An attempt was made to capture the exact pattern of decision making process in the processed food sector.

Table 4.3 Decision making for purchase of products

Father	Mother	Children	Jointly	Others
8	26	44	18	4

To test whether significant variation occurs in the decision making process and to bring out the most influential member of the family in purchasing a processed product, the Friedman test was applied. The calculated value of 9.49 was found to be greater than the table value of 1.96 at 1 percent and 2.58 at 5 percent levels of significance. It signifies that high variation did exist in the decision making process in the family. The table also clearly states that variation does occur and children were the decision makers in 44 families while the role of female members too cannot be pushed off. Though the male members of the family has least influence in the decision making process, Table 4.35 shows that the products are actually purchased by them in 54 families where the role of children are minimal.

Table 4.35 Purchaser of Processed Product

Father	Mother	Children	Jointly	Others
54	29	9	6	2

From table 4.34 and 4.35 it can be observed that the female members maintained a balanced status in the family. There is a possibility that these 20 odd female members might be working women who decides and purchases on their own on their way back home.

Inorder to locate the exact outlet through which products are purchased by the consumers, opinion pertaining to it was collected. This attempt is to enable the processing unit to rightly route the products through the appropriate outlet. Table 4.36 shows that 80 per cent of the purchases are made through ordinary retail outlets and 10 per cent through co-operative stores. When retail outlet held the monopoly position direct wholesale trade or dealer sales was ignored by the customers. This may be due to the locational disadvantage of the wholesaler/dealer. The share of canteens and super markets were also very meagre through processed items are considered to be the food of 'elite class'.

Table 4.36 Place of purchase

Factory	Dealer/ wholesaler	Ordinary retail outlets	Cooperative Stores	Super Market	Others including hotels/ canteens etc.
2	2	80	10	4	4

73 of the respondents stated that all the demanded brands were available in these outlets while 27 of them had experience of facing out-of stock situations. This often resulted in purchase of substitutes or competing brands. 34 of them also

demanded new products prepared out of fruits and vegetables which is presented in Table 4.37 below

Table 4.37 Branded new products demanded

Name of crop	Products
1. Chips (Kondattom)	a. Bittergourd b. Chilli c. Cowpea d. Snakegourd
2. Squash	a. Papaya
3. Pickle	a. Bittergourd b. Chilli c. Foot yam d. Papaya
4. Candy	a. Mango b. Papaya
5. Jelly	a. Papaya
6. Scrapings	a. Papaya
7. Bar	a. Mango b. Jackfruit c. Banana d. Papaya

8.	Figs	a.	Banana
9.	Juice	a.	Banana
10.	Powder	a.	Banana
		b.	Tapioca
11.	Pulp	a.	Mango
		b.	Banana (Purée)
	Alcohol	a.	Banana

To summarise, the consumer response analysis revealed the following facts:

a) Items commonly purchased are jams, squashes and pickle. Demand for sauce and jelly was low. However, sun dried products are consumed widely which are prepared in the homesteads.

b) Processed items are purchased occasionally and can also be referred to monthly purchases, except for squash which is demanded mostly in summer.

c) Usage pattern also referred to occasional use rather than any systematic schedule.

d) Processed items are preferred more during parties and tours and there was least preference on holidays. pickles are part of

e) Pickles and dried products were being used before 15 years itself. Jam and squash became popular in a span of years ranging from 3 to 10 years. Sauce has gained some popularity in the recent past and is still in the process of gaining momentum.

f) Quality and taste followed by price were the main attributes that influenced the preference of any product in the sector.

g) Among products, the brand preference was as follows:

Jam	-	Kalyan
Squash	-	Kissan
Pickles	-	Caico and Home made
Sauce	-	Maggie
Juice	-	Sagara, Pinango
Dried	-	Home made

h) The consumer preference had shifted from one brand to another in the case of all products.

I) Majority of the respondents felt that there was a need for shift in brand in future also in the case of jams and dried products while for squash and pickle, the need for shift will depend on the products and markets in future. More respondents felt that they will stick on to the present brand for sauce.

j) There was absolute preference for local brands of products.

k) The media most commonly used in promotion of local brands was word-of-mouth and magazines followed by radio. Television was used by national brands like Kissan , Maggie etc.

l) Majority felt that advertisements were necessary for promoting processed items and for creating consumer awareness about the products specialities.

m) Decision making was in the hands of children while the male member of the family went in for making purchase of products.

n) Retail outlets were preferred the most for making purchases and out-of stock situations of any brand at the final point of sale resulted in shift in brand.

o) Though the major products of each processing unit is limited to jam, squash, pickle, sauce and juice commonly, new items are demanded by consumers.

To conclude, brand consciousness is not strongly felt among consumers of fruit and vegetable products. However, the scope for producing new items is much more in the industry.

Summary and Conclusion

CHAPTER VI

SUMMARY AND FINDINGS

The processed fruit and vegetable products sector is poised for a giant leap in the recent past. With the thrust areas for development of the economy being identified as horticulture, Olericulture also requires special attention. Like production and productivity of fresh and processed fruits and vegetables, marketing also requires due care and attention before further proceeding with the development activities.

The producer of fruits and vegetable would gain nothing by increasing the production base of the sector. Only if marketing is focused, realisation in sale proceeds can be increased. The readiness of markets to absorb fresh fruit and vegetable products and the need for diverting to processing informs the producer about the possibilities of marketing their produce at a profitable rate. The surplus produces that are converted into processed items invites attention on the procurement price of raw materials. The market acceptance of each processed item and the returns earned by the processing unit when the invested costs are huge amounts, also requires special attention and analysis. The marketing efficiency of the various channels involved needs to be identified and their feasibility should be tested. Consumers response to each items also plays an integral role in the system

It was under these circumstances, this study was initiated with the following objectives and to suggest appropriate measures on the basis of analysis

1. To examine the practices in procurement of inputs
2. Selection of product mix and cost
3. To examine the marketing efficiency of the fruit and vegetable processing industries.

The study is confined to 4 fruit and vegetable processing units which are actively in the business during the study period. These samples were selected based on the following criterion

- a. The oldest unit in the district - Unit A
- b. Excellent unit of the district - Unit B
- c. A Cooperative form of organisation - Unit C
- d. A household rural unit - Unit D

The list of units provided by the Small Industries Service Institute (SISI) was used to select the units. The units selected on the basis of this classification were Kalyan Food Products Ltd., Trichur Cooperative Fruit and Vegetable Marketing Society (Sudha Products), Canning Industries Cochin Ltd., (CAICO,) and Premier Food Products.

The two main locally available fruits - Mango and Pineapple were selected to analyse the raw material procurement practise of the units. The channel from farmer to units and to ultimate consumers were selected. Pre-tested structured schedules and casual

interviews were used to collect relevant information from the sample drawn out using simple random technique.

Since the processing units selected for the study were from the private sector, no secondary data was provided from the records. The taxing policy applicable to processing units kept them away from maintaining proper accounts, as mentioned by the unit heads, or probably hesitated to disclose the data which were available. The study period was three years, from 1993 to 1996 which was more relevant for calculation of average price for raw materials since a stable price was never expected in the sector.

The analysis was done by using simple averages, percentages and charts. The efficiency of the procurement channel and the marketing system was analysed on functional and economic terms. Descriptive approach was applied for functional analysis whereas price spread analysis was used to measure the economic viability. Consumer response was analysed by using percentages and non-parametric tests alongwith descriptions where necessary.

The results and findings of the study are summarised below alongwith some suggestions for improvement.

Part I:

1. All 4 units selected for the study were located hardly 5 km away from the town. This shows that they have a market oriented location.

2. The marketing channel involved in the procurement of raw materials was lengthy. The most cost effective channel, ie: channel 1, was not ^{fully} utilised by units A, B and D while unit C had some access to it.

3. The procurement cost of the units were on the higher side due to the above listed reasons which made the following expenses inevitable:

- a. Loading and unloading charges
- b. Transportation cost
- c. Labour costs
- d. Commission to agents/and contractors

The suggestion that may prove to produce best results based on the above findings is that the processing units should have a production oriented location which will reduce the procurement costs and the selection of effective marketing channel.

4. The scattered low production base of individual farmers and the quality of both fruits, mango and pineapple, were not adequate to serve the needs of the processing units.

Collective efforts from the farmers in procurement and marketing of fresh produces directly to processing units is a suggested solution in this respect. For this organising and training farmers in the respective field should be an extension activity of each processing unit which will help them to reduce the procurement cost.

5. Low grade vegetables are either disposed at a throwaway price or are sorted and dumped in the field, resulting in lower returns to the producer in the total production.

Since cheap and common technologies available in the processing field are sufficient to convert low grade produce into high value added vegetable products, farmers can directly enter the field of processing and packing. Sufficient back up from the processing units in the form of marketing these products, will earn both the farmer and processing Units good returns for a much lesser production cost. Brand name of the processing unit is a trump card that can be used to boost this strategy.

6. Channel identification revealed that five prominent channels existed in the fruit and vegetable sector, with special focus of study on procurement practices of processing units.

7. Unavailability of uniform produces has often been a constraint faced by all four units alongwith seasonality problems.

Technology available should be extended to the farmers to increase production, to bring in uniformity and to overcome seasonality problems. Hormone applications is a suggested method to overcome these constraints to a certain extent.

8. There was decrease in local raw material base which led the units to depend on out-of-State(district) produce.

Evolving new support strategies by the processing units will encourage the farmers to increase the area of production.

9. Functional analysis revealed that unit A dealt with all five channels, while B tested 3 channels, Unit C only two and Unit D a combination of 3 channels.

10. Channel 5 was acceptable to all units on grounds of regularity in supplies and permanent location of the wholesalers.

11. The price spread analysis done to test the economic feasibility reveals that Channel 1 was comparatively better. However, to overcome the functional problems in this channel, a new model is suggested which combines the good of all 5 channels and still earns better profit for the processor and the producer

Part II:

12. The product mix identification revealed that Unit A was producing 32 items followed by Unit B with 29 items.

13. The major share of unit A, B and C was jams, squashes and pickles while unit C concentrated only on pickle products.

14. The price comparison showed that overhead costs of unit increases when the product mix is high since unit A had the highest product mix and high priced items. Product range and price range of unit D was the lowest.

Part III:

15. 4 channels have been identified in the marketing of processed items.

16. Based on the functional analysis, Channel 4 proved to be efficient and effective for adoption by smaller units for marketing the processed products while Channel 2 was more conducive for bigger units.

A suggestion to increase the marketing efficiency of Channel 2 is that incentive schemes for retailers should be framed by the processors without depending solely on the dealers for market information. Independent market studies can be conducted by each processor for generating upto date market data.

17. The price spread analysis also reveal that marketing through channel 2 is acceptable to bigger units on economic terms also as there is an increase in the margin enjoyed by the processing unit

18. From the consumer response analysis, it was observed that though there was awareness about processed products in general, commonly purchased items were jams, squashes and pickles.

19. Processed products are preferred more during parties and tours when their preference was least on holidays. Pickles were part of daily diet in many families.

20. Quality, taste and price were the three main attributes that influenced the preference of processed products.

21. Shifting of brands was common in all products. Retailers word-of-mouth promotion and out-of-stock situations were the main reasons for shift.

22. Local brands were preferred over national brands.

23. Advertisements were considered to be essential for promoting processed products. Word-of-mouth, magazines and radio was used by local brands for promotion.

24. It was the children who decided on the brand of each product while the male member (usually father) of the family purchased the products.

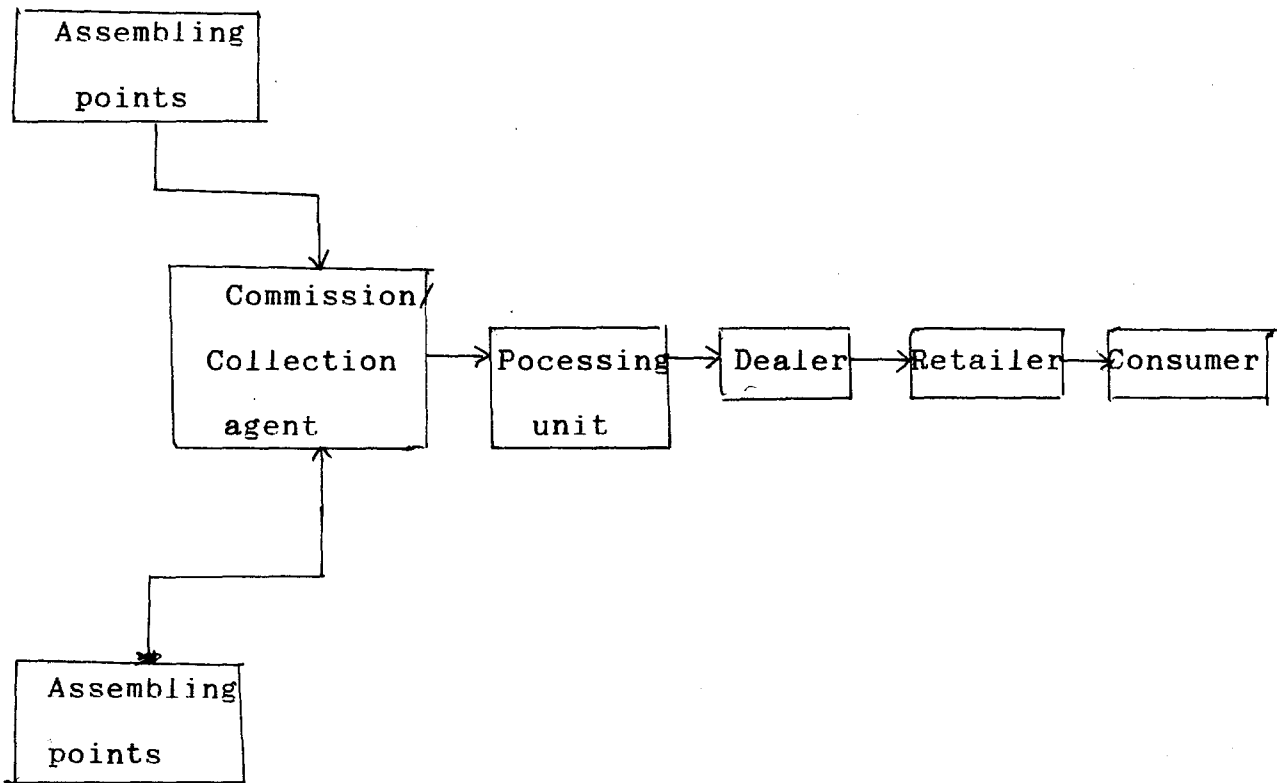
25. Existing retail outlets were preferred as the final point of sale. Indirectly, it means that channel 2 is the most efficient and effective channel for marketing processed items in the district.

26. A number of branded new products were demanded in the market which shows that the potential of processing sector still lie untapped.

To conclude, the suggested model can be adopted for procurement of raw materials while channel 2 can be employed for marketing of processed products. The final structure of the whole channel is suggested to be as follows:

CHART: 7

SUGGESTED CHANNEL MODEL FOR THE PROCESSING INDUSTRY



Bibliography

BIBLIOGRAPHY

1. Chadha, and Rethinam P 1990. *"Export of Horticultural Crops"*, *Export of Agricultural Commodities : 2000 AD - A Perspective*, Vikas Publications, New Delhi:69
2. Chadha and Rethinam P. 1992. *"Export of Horticultural Crops"*, *Export of Agricultural Commodities : 2000 AD - A Perspective*, Vikas Publications, New Delhi:69
3. Chadha and Retinam P. 1992. Revised edition
4. David 1984 *"Development of Rural Industries. A case study of vegetable processing at farm level"*, *Journal of research* 7 (3):388 - 394
5. Dhawan. July 1969. *"Co-operative marketing of Apples"* *Agricultural Marketing* XIII (2):1-8
6. Dru, Dr. Srivastava. 1987. *"Minimisation of post-harvest losses for improving marketing efficiency"* *Marketology* 19 (2):13.
7. Editorial. 1994-95. *"Horticulture : Recent trends in Research"*, *Agricultural Research Year Book*:80
8. Editorial .1994-95. *"Horticulture - Thrust areas identified - 8th plan Allotments"* *Agri Research year book*:77.
9. Editorial.1987. *"Fruit and vegetable processing Industry in Rural India - Problems and prospects"*, *Indian Food Packer* 34 (6):29-32.
10. Government of Kerala.1994.Farm Guide.
11. Government of India.1995-96. *"Food processing Industries in India"*, *Ministry of Food Processing Industries*, New Delhi.

12. Gupta, J.K. 1979. "Socio Economic Significance of Agro-industries in a Developing Country", *Indian Journal of Agricultural Economics*. 34 (4):129.
13. Gupta S.S, Verma R.C. et al (1993) "Effect of Transportation cost in the Marketing of Perishable Commodities in Rajasthan" *Indian Journal of Agricultural Marketing*. Annual Conference - Special report, VII, p 40.
14. Hamsagar (Dr) Ram S. (1986) "Technology Appraisal", *Marketology*. 18 (394):17-18.
15. James Rhodes V. 1978. "Wholesale - Retail and Food Service structure procurement", *The Agriculture Marketing System*, Indianola Avenue, Columbus:319.
16. Kavitha Mehta. Sept-Oct .1992. "Development of Fruit and Vegetable Processing Industries and Their Export Potential", *Indian Food Packer*:42-46.
17. Kumbhar B.K. and Singh, B.P.N. Sept-Oct 1991. " Ways to Decrease Profit Margin or Reduce Product Cost in a Food Industry, *Indian Food Packer*. 22 (4):19-27.
18. Mani K. and Srinivasan N (1990). "A Feasibility Study on Establishing Fruit and Vegetable Processing Plants in Tamil Nadu", *Indian Journal of Marketing*. 22 (7):20-26.
19. Mahalanobis J.N. Jan. 1971. "Need for New Processing and Preservation of Food", *Agricultural Marketing*. XIII (4): 17-20.
20. Mathew, S. 1995. "Constraints of Processing Industries in Kerala - Pilot Study", *Newsletter*. Kerala Horticulture Development Programme, Kochi:7.

21. Murdia B.S.1979. "Linkages of a Fruit and Vegetable Processing and Preservation Unit - A Case Study", *Indian Journal of Agricultural Economics*. 34 (4):124.
22. Nagaraj N. et al.1989. "Economic Analysis of Karnatak Fruit Processing" A case study of Karnataka Agro-Fruits Ltd, *Indian Journal of Marketing*. 19 (10):9-16.
23. Nair, Dr. Rajan.1994. "Marketing of Agricultural Produce" Seminar Paper- Proceedings,College of Co-operation and Banking, Kerala Agricultural University, Mannuthy,Thrissur.
24. Narain P. April-June 1980. "Statistical Tools in Agricultural Marketing", *Marketology*, 20(6):23
25. Narayanankutty, M.C. 1994. "Handling Storage of Fruits" Training on Post Harvest Handling and processing of Fruits and Vegetables,*Seminar Proceedings*,Kerala Agricultural University, Thrissur.49.
26. Pandey P.N. 1989 "Role of Grading and Standardisation in Marketing of Horticultural Produce in India", *Report - Directorate of Marketing and Inspection*, Nagpur.: 46-80.
27. Pawar Rao, Jagannatha et.al .1987. "Effects of Imperfections of Marketing System of Fruit and Vegetable and Milk", *Marketology*. 19 (27): 15
28. Prahlad, N .1989. "Cost and Margins in the Marketing of Vegetables" *Agricultural Marketing*. XIX (1):13-20.
29. Raju V.K.1994-95."Horticultural Areas identified 8th Plan Allotment", *Processing of Fruits and Vegetables-Seminar Proceedings*,Kerala Agricultural University, Thrissur:77.

30. Raju V.K. Oct. 25-29 1994. "Importance of Post Harvest Technology on Fruits and Vegetables with Special Reference to Kerala" Training on Post Harvest Handling and Processing of Fruits and Vegetables- *Proceedings*:1-11.
31. Ramphal .1994. "Export of Vegetables from India",*Export of Agricultural Commodities : 2000 AD- A perspective*, Oxford and IBH Publishing Company Pvt. Ltd. Bombay:58.
32. Rana, R.S.Oct-Dec. 1984. "Fruit Production and Marketing in India". *Agricultural Marketing*, XXVII (3):21-31.
33. Ratnam (1989) "Marketing aspects in Planning Agricultural Processing Enterprises", *Indian Food Packer*, 28 (4): 37.
34. Government of Kerala.1995. "Committee on Revamping of fruit and vegetable Industries in Kerala - A Report", *Ministry of Agriculture*.
35. Government of India.1986.Report on Performance Improvements for Fruit and Vegetable Processing Industry in Cottage and Home scale sector, *National Productivity Council*.
36. Government of India.1986.Report on Performance of Processing Industries, *National Productivity Council*.
37. Government of Kerala.1992. "Small scale Industry - A perspective",*Report*, Institute of Small Industries and Development.
38. Sarin K.P. July 1993. "Theme Paper on Processing", *Indian Food Packer*, 34 (5): 59-63.
39. Seetharaman S.P. and Picholiya K.R. 1989. "Role of Government in Agro-Processing", *Indian Journal of Agricultural Economics*, 44 (3):315.
40. Setal, Bhalerao et al .1980. "Marketing of vegetables - A Sample study", *Agricultural Marketing*, XX (2):27-29.

41. Sethi, Vijaya .Sept-Oct 1992. "Prospects and Constraints for Export of Indigenous Fruits and Vegetable Products", *Indian Food Packer*, 34 (6):37-42.
42. Sethi Vijaya.1994 "Export prospects for processed products from indigenous fruit and vegetables", *Export of Agricultural commodities : 2000 AD- A perspective*: 84.
43. Singh, Sukhpal and Vyasulu, Vinod (1989). "Growth and structure of Food Processing Industry; Punjab 1966-86", *Indian Journal of Agricultural Economics*, 33 (3):316.
44. Sood, Archana (1989), "Fruit and Vegetable Marketing- A welcome change", *Kurukshetra*. 37 (8):43-45.
45. Srivasthava V.K. and Vathsala .1992."Agro-Processing Strategy for Acceleration and Exports", *Export of Agricultural Commodities. 2000 AD- A Perspective*, Vikas Publications, New Delhi.
46. Subbanarasaiah N.1991. "Marketing Practices and Problems", *Marketing of Horticultural crops in India*, Anmol Publications, Ansari Road, Daryaganj New Delhi:42-71.
47. Subbanarasaiah and Mohan.May-June 1987. "Marketing Problems and Prospects of Citrus Fruit Growers in a backward region" *Indian Journal of Marketing*, XVII (9-10): 23-27.
48. Subramanyam K.V. Oct-Dec. 1986. "Marketing of fruits self Marketing Vs Contract Sale", *Agricultural Marketing*, XXIX (3):21-24.
49. Subrahmanyam K.V. 1989. "Production and Export Potential of Pineapple : Present Status and future Scope", *Agricultural Situation in India*, 23 (12):1043.

50. Subrahmanyam K.V. and Sudha M .1993. "Economic Feasibility of establishing - a Small Scale Cooperative Processing Unit in Rural Areas - a case study of Tomato", *Indian Journal of Agricultural marketing* 7 (1):23-31.
52. Subrahmanyam and Sudha.1996. "Establishing small scale processing units in rural areas-Economic Feasibility ", *The Hindu Survey of Indian Agriculture* : 170 - 172.
53. Thakur, Devendra (1993). "Agro-Exports", *Export Marketing - (Trends in World Economy)*,Oxford and IBM Publication,Bombay:61.
54. Tilekar S.N. et al.1993. "Transport Efficiency in Marketing of Fruit and Vegetable Through Co-operatives", *Indian Journal of Agricultural Marketing*, 7th Annual conference special, P.37.

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Appendices

FOOD PROCESSING UNITS IN TRISSUR DISTRICT
(Pickles/ Jams/ Curry Powder etc.)

1. Canning Industries Cochin Ltd., Trissur - 6
2. Darlco Canning Ltd., Trissur
3. Narassu's Food Products, Chelakkara
4. Pio Food Packers, Kuriachira
5. Pieco Industries and Canning Co, Thalakkottukara
6. Jayco Food Products, Mini Industrial Estate, Ollur
7. Posh Food Products, Mulankunnathukavu
8. Kalyan Products, Kuttanallur
9. Rerraj Food Products, Puranattukara
10. Johnson Food Products, Irinjalakkuda
11. Sreeja Enterprises, Pazhayannur
12. Arkay Food Makers, Patraickal
13. Asian Food Products, Kuruvillasserri
14. Sharadi's Special Achar, Kadilkadavu
15. Sebas Comapny, Eravu
16. Kalyan Soft Drinks, V/939-A, Kuttanallur
17. Sudha Products, Nadathara
18. T.K.D.Traders, Paliakulam P.O, Motherakanny
19. Dia Pickles, P.O. Edathiruthy
20. Naya Pickles, Kottppuram
21. Sagara Food Packers, Ollukkara
22. Sams Food Products, P.O.Edathuruthy
23. Janatha Mahila Samajam, Mala
24. Home Made Food and Spices, Vadookkara
25. Devi Food Products, Chembukkavu
26. Preethy Pickles, Mangalam P.O, Vadakkancherry
27. Chitra Food Products, Vadakkancherry
28. Thoppil Traders, S.N.Puram Panchayath, Kodungalloor
29. Top Achar, P.O Karuvannoor
30. Ganesh Food Products, P.O Anthikkadu

(Premier Food Products, Vettickal is missing in the list since it is not a registered unit)

* Small Industries Service Institute (SISI)

II

NAME & ADDRESS OF THE FPO LICENSEES IN KERALA

Sl.No.	Name & Address of the factories
1.	Canning Industries Cochin ltd., Caico Road, Valarkavu, Trichur. 680006.
2.	Malabar Coast Products, Thodupuzha Road, Vazhakulam. 686670.
3.	Visko Food Products, Vazhakulam. 686670.
4.	Malabar Fruit Products Co., Neerampuzha Kavala, Vazhakulam, Ernakulam Dt.
5.	Kalyan Products, Kuttanellur, Trichur. 680006.
6.	Kerala Agro Products, Arampuzha, Punalur, Quilon Dt.
7.	Madurai Soft Drinks P.ltd., Ayikarpadi PO. 637637. Malappuram Dt.
8.	Kerala Coop. Milk Marketing Federation ltd., Central Production Dairy, K.C.M.M.F. Ltd., Punnappa, Alleppey.
9.	Accelerated Freeze Drying Co., ltd., Ezhupunna. 688548.
10.	S.L.K. Food Processing, 328/12. Poovattuparamba, Calicut.
11.	Maruthi Foods P.ltd., PB No.1658, Cochin. 682015.
12.	Darico Canning ltd., Moospet Road, Trichur.
13.	Elenjikal Foods and Beverages (India) P.ltd., Edathala PO, Alwaye. 683561.
14.	Techno Chemicals Industries ltd., PB No.74, Oyitti Road, Calicut. 1.
15.	The Canning Industries Cochin ltd., Edacochin, Cochin. 682006.
16.	Malabar Fruit Products PB No.1. Bharananganam, Kottayam Dt.
17.	The Trichur Fruit & Vegetable Marketing Society ltd., Nadathara, Via Mission Hospital, Trichur.
18.	Premier Food Products, NH. Mannuthy. 680651. Trichur.
19.	Uniroyal Marine Export ltd., 11/19. Vengalam FO, Changanacherry, Calicut. 673303.
20.	Uma Exports, V/97. Karumam Road, Kaimanam PO, Trivandrum. 695040.
21.	S.S. Food Packers, MIE, Angamally. 653872.
22.	Regional Agro Industries Development Corporation ltd., PB No.407, Cannanore. 670002.
23.	Standard Beverages & co., MIE, Kunnamangalam, Calicut. Dt.
24.	Nirmal Beverages, Aruvikara PO, Via. Karakulam, Trivandrum Dt.
25.	West India Beverages & Foods Products, Thottada, Cannanore 670007.
26.	Foodpacks Indiana, Trikariyoor. 686692. via. Kothamangalam,
27.	Pineapple Marketing Coop. P. Society ltd., K.454, Amayanur. 686025.
28.	Sri Mahalaxmi Food Industries, Cheramal Chambers, 27/354. Kurugupally Road, Ernakulam. 682015.
29.	Tata Tea ltd., Mushrooms Project, Munnar. 685612.
30.	Allied Beverages, 19/223. Puthiyapalam, Calicut. 2.
31.	Malabar Coast Products, Palathinkal House, T.B. Road, Kottayam. 1.
32.	Herbal Isolates P.ltd., Fanacode PO. 682310. Ernakulam Dt.
33.	Sree Sadan Beverages Co., Onden Road, Cannanore.
34.	Naveen Enterprises, X/754. Kollad FO. Kottayam. 686029.
35.	Eastern Condiments P.ltd., Eastern Valley, Adimalai, 685561.
36.	Namputhiries Pickle Industries, Manakad PO, Thodupuzha. Idukki Dt.
37.	Narasus Food Products, 1/440. Temple Road, Chalakara. Trichur Dt.
38.	Kalpa ka Processing co., Neelamperoor, Alleppey Dt.
39.	Pepper India Corporation, Opp. Vellappally lane, KK Road, Kottayam. 1.
40.	Spice Valley Products Ward No. K.V. III. H.No. 2164, Falai. 686575
41.	Naveen Marcose, XII/1254 A. Nattakam, Kottayam. 685013.
42.	Gandhigram Village Industries Coop. Com lex, TICCOS LTD Nezhoor, FO. Kottayam.
43.	Malabar Food Products, 32/402. A. Chalidikavattom, Vennala south, Cochin. 25.

MARKETING PRACTICES IN FRUIT & VEGETABLE PROCESSING INDUSTRY

Schedule A: Farmers

The purpose of this survey is to study the opinion towards fruit and vegetable processing units. No information will be disclosed or used for any purpose other than research.

1. Household information

	Name	Sex	Age	Education	Occupation		Engagement in cultivation and allied activities
					Main	Subsidiary	
1.							
2.							
3.							
4.							
5.							
6.							

2. Land ownership and use pattern: Total land :

Crop	Acreage/ cents	Irrigated/ unirrigated	Reason for selection of each crop	Whether cash/ plantation crop/ fruit & vegetable preferred
1. Mango				
2. Pineapple				
3. Cashew apple				
4. Guava				
5. Jack fruit				
6. Bittergourd				
7. Chilli				

4. Kalyan Foods & Beverages, VIII/270.A. Bridgeview, Bank Junction Always. 683001.
45. Avon Beverages, (Cochin), Chitrapura Road, Irimpanam. 682309.
46. Malabar Canning, XXXVI/1545. M.G. Road, Ernakulam.
47. Vamana Food Products, 1/705. Karanthur PO, Kunnamangalam. 673571.
48. ABC Food Products, Kakathuruthi Road, Chetiparamba, Irinjalakuda. 680121
49. Manna Food Industries, Adooparamba, Muvattupuzha. Ernakulam. Dt.
50. Home Main Foods & Spices, Vadookara, Trichur. 680007.
51. Shanti Food Products, Badagara. 673106.
52. Khatai Food Industries, Khatai Mahal, V.R. Menon Road, Cochin. 16.
53. Manoor Enterprises, Kumbazhamuni PO. Pattanamthitta. 689653.
54. Gayathri Food Products, MIE Manarcaud PO. Thodupuzha. Idukki Dt.
55. Uma Exports, 597. Thanni moodu, Kallar PO. Idukki Dt.
56. Amrutha Fruit Products, Rural Development Centre PO, Pakalamuttam, Kuruvilangad PO. Kottayam. Dt. 686642.
57. Priyadarshini Fruit Products, Vazhakulathu Pariyaram, Kottayam. 21
58. Thankam Food Products, 22/118. Single Street, Nurani, Palghat. 4.
59. Geo Food Products, Adooparambu, Muvattupuzha PO. Ernakulam Dt.
60. President, Sagar Society (Reg. No. P/193/89), Kuriyanoor PO, Tiruvalla, Pathanamthitta Dt. 689550.
61. Malabar Agro Fruit Producers, XIV/88. (New No. X10/467), Chittathukkara, Kakkanad. Kochi. 682030.
62. The Pharmaceuticals and Chemicals (Travancore) P. Ltd., TC/473, Samina th vilas Pettah, Vanchiyoor PO, Trivandrum. 695035.
63. A.N.M. Products, Beliapatnam, Cannanore. 10.
64. Superintendent, Agricultural Research Stn, Nelliampathy, Palghat Dt.
65. Swadeshi Fruit Products, 16/70. Kuttichira, Calicut. 1.
66. Gecy Food Products, Punkunnam Road, Palai, Kottayam Dt.
67. Bymor Food Products, 26/184. Govaindapuram, Calicut. 26.
68. Hero Fruit Products, 16/114. Thangals' Road, Calicut. 1.
69. Mariana Food Products, Kawdiar Road, Trivandrum. 3.
70. Multi Food Products, 33/654. T.D. Road, Cochin. 1.
71. Vertex Food Products, Thanackal PO, Trivandrum. 695313.
72. Kerala Food Products, Kunnampurathu veedu, Olessa, Kottayam. 14.
73. M.C. Fruit Products, 3/182. B. Near 6th Rly. gate, Calicut. 1.
74. Arasco Fruit Products, 15/768. South Beach Road, Calicut. 1.
75. Society of St. Vincent De Paul, Near Railway Station, Always. 1.
76. India Food Industries (Workshop) Coop. Society Ltd, No. S. Ind(K), 135. Puthenangadi Bazar, Market Road, Kaxinjirapally. Idukki Dt.
77. Asian Spices, MIE Pampady, Kottayam Dt.
78. Malabar Spices, 2. MIE Manimala, Kottayam Dt.
79. The Eves' Foods Products, Spice India Bldg, Quilon. 2.
80. Volga Food Products, 15/502. West Kallai, Calicut. 3.
81. Arikuzha K.I.I.C.S. Ltd., No. K.V. Ind(E) 12. Arikuzha PO, Idukki Dt.
82. Malabar Coast Enterprises, 24/1458. Karumpaidyam, Arts College, Meenachandai, Calicut.
83. Fine Food and Allied Products, 12/474. Kuttichira, Calicut. 1.
84. Kerala Soft Drinks, 10 & 4 B. Alappat Cross Road, Ravipuram,
85. Vikas Products, 23/169. Kannamcherry, Calicut. 673003.
86. Variety Edible & Palatables, 16/453. Annie Hall Road, Calicut 23
87. ~~Vikas~~ Kerala Rural Indl. Service Centre, Ambady Nagar, PO. Erevichira, Thottakadu. Kottayam.
88. Foursome Corporation, 3/28. A. Post Alavil, Kannur. 670008.
89. Neo Food Industries, Paranchokkall House, Thukkalassery, Tiruvalla. Kottayam Dt. 689101.
90. Garden Fruit Products, Edakattuvayal, Arrakkunnam, Ernakulam Dt.
91. Indo Food Packers, Kodugoor Junction, Vazhoor. 686504.
92. Kalyan Soft Drinks, Kuttanallur, Trichur. 680004.
93. Azad Processed Food, 20/957. Kallai, Calicut. 3.
94. The Secretary, Nedumangad Processing & Mktg. Giriyan Vanitha Coop. Soc. Ltd., Nedumangad, Trivandrum Dt. 695541.
95. Central Marketing Products, 8/40. A. Kurumandal, South Paravur PO.

7. Mount Sahiya, Attapattam, Kumli. Idukki Dt.
7. High Range Products, 12/150.A.Nattakam, Kottayam.
98. Director, Food Processing & Nutrition Centre, Balussery, Calicut. Dt.
99. Capsal Products, P.O. Farook College, Calicut. 673632.
100. Fruit Preservation Centre, Changanacherry Social Service Society, Mallapally WEST P.O. Pathanamthitta. 686101.
101. Arkeyan Food Products, 24/285. Easwari vilas, Sasthan Koil Road, Thycaud, Trivandrum. 695014.
102. ~~Arkeyan Food~~ Kumar Fruit Products, 39/1145-6. Ashok Road, North Kaloore, Cochin. 17.
103. National Beverages, H.No. XX/71. Valiyakunnu Kizhuvaliram P.O., Attingal. 695104.
104. Feast Food Products, 4/439(D) ° Industraã Area, Tellicherry 670661.
105. Archana Fruit Products, Kothala P.O. Pampady, Kottayam Dt.
106. Naveen Food Products, 425.A. Marathakara, Trichur. Dt.
107. Dual Beverages, Thekkumbhagam P.O. Thodupuzha .685525.
108. Thirst Aid Beverages co., Muthoor P.O.-Tiruvalla. 689107.
109. Volga Food Products, 15/1341. Pallikandi Road, Calicut. 3.
110. Taisty Fruit Products, Thallakam P.O. Kottayam. 686016.
111. Elite Drinks Pattankad P.O. 688531.
112. Shizaj Industries, Kalakuttam , Trivandrum. 695582.
113. Malankara Food Products, Pattam, Trivandrum. 695004.
114. Arun Giri Food Products, Radhika Gardens, Panniyampadam, Mundur, Palghat. 678592.
115. Indiana Dry Foods & Exports, Puthoor P.O. Kottarakara tk, Quilon Dt.
116. Modern Canning Industries, 49/1218. Chettupadukkara, Ponakkara Road, Edapally P.O. Cochin. 682024.
117. Sagara Food Products, Panachakam. IX/536.A. Mannuthy. 680651.
118. Southern Food Products, 8/81.A. Ollur, Panchayat, Kuttanallur, Nethaji Road, Trichur. 14.
119. Super Drinks, Kokkalai, Trichur. 1.
120. Malabar Palatables, 15^b 1552. Puthiapalam Road, Chalapuram P.O., Calicut. 673002.
121. Merry Fruit Products, ~~Kunnani House~~. Lavana Vazhakulam, Muvattupuzha. 686670.
122. Namimuthar Farm Products P.ltd., TC 24/1028. W&C Hospital Road, Thycaud, Trivandrum.
123. Fruiton Products, Nettiadu, Panmana, Edappallikatta P.O., Kollam. 691583.
124. Riya Eondiments, 20/1103. Cherumanassery Road, P.O. Kallai, Calicut. 3.
125. Thripty Products, 1/204.A. Ollur Panchayat, Trichur Dt. 680306
126. Konkan Food Industries, 4/1158. Cheralai, Cochin. 682002.
127. Indian Foods & Spices, 48/1748B, Peru, batta Road, Elamakara, Cochin. 682026
128. Priyadarshini Charitable Society, 216/A. Ward No. 3. Puthupariyaram P.O., Thodupuzha. 685584.
129. Tariveni Foods, AP 4/703. Nellimoodu P.O., Trivandrum. 695524.
130. Grandmas Food Products, S.No. 549/7B/549/7A./2. Peringuzha,
131. Seven Charitable Association, 61. A-V Temple Road, Vengoor, Kidangoor P.O., Angamally. 683591.
132. Pooram Foods, 11/70.A. West Vellanikara, Madakkathara P.O., Trichur. 680656.
133. Travancore Pineapple Canning Co., Chemmathur, Punalur.
134. Popular Cool Drinks Factory, 1/21. Bazar Road, Mattancherry, Cochin. 2.
135. Kerala Pickles, TC No. 36/293. Palkulangara, Drainage Road, Trivandrum.
136. Chatta Products, Chatta House, Chalad, Kannur. 1.
137. Tropical Cannors, Vellikulangara, via. Koolakara, Near Chalakudi, Trichur Dt
138. Aluvilla Cottage Inds. Coop. Soc. ltd., Ayanimoodu. Vedicachankoil. 695501.
139. Malappuram Handicrafts & Cottage Inds., Service Coop. Soc. ltd., 12/510. Jubilee Road, Malappuram Dt.
140. Darling Food Products, Alacode. Elamadesam P.O. Thodupuzha. tk. Idukki Dt.
141. Kizhakkanukara Mahila Samajam (KINS), Manvilla Attipura Panchayat, H.No. A. 189/111- Manvetta, Galakad Road, Kulathoor, Trivandrum. 695583.
142. Samco Fruit Products, 32/15. Padanapalam, Chalath Road, Cannanore. 670001.

143. Kerala Gandhi Smarak Nidhi Fruit Product Processing Centre, Poovachal FO. 695575.
144. Standard Food Products, 16/466. Mohiuddinpatti, Parappil, Calicut. 1.
145. A.D. Mohamed Ashraf Production, 12/55. Pilakool Main Road, Tellicherry. 2.
146. Arkay Food Products, 28/741. Falurackal, Trichur. 1.
147. Rasna Foods, 12/484. Chalapuram Po, Calicut. 2.
148. Paico Home Products, 9/717. B. Manthara Road, Cochin. 682002.
149. Kwality Condiments, West Kallai, Calicut. 3.
150. Mini Food Products, Chettikulangara, Mavelikara. 6.
151. Naveena Food Products, JJ Bhavan, Keezhattungal, Attingal FO.
152. Accelerated Freeze Drying Co., Ezhupunna. 688548.
153. Basraj Food Products, Puranattukara. 680551.
154. Meghna Exports, Pariyaram, Kuppani PO. Taliparamba. Cannanore Dt.
155. Indian Foods & flavours, Olavanna Road, Calicut.
156. Jaycee Products, 43/404. Correa Road, Pachalam. Cochin. 682012.
157. Lara Pickles & Condiments, 11/560. A. Maradu. 682304.
158. Kamala Food Products, 1/564. Temple Road, Chalikara, Trichur Dt.
159. Omega Food Products, 20/588. Customs Road, Tellicherry. 1.
160. Niyo Condiments, 20/468. Attikkal, Saw Mills Road, East Kallai, Calicut. 3
161. Asian Products, 3/138. Sri Lax mi Mukkai, Palghat.
162. Food Processing Co., Brindavan Gardens, Kilikavu, Quilon. 691004.
163. Sosya Pickles, Rachna Theatre Opp. Palipuram, 679305. Palghat Dt.
164. Simpson Food Products, Maliyilputtu Veedad, Near Pashashilkavu, Vadakkevila, Quilon. 10.
165. Devaki Cottage Inds., 3/82, Choliya Edakulam, Calicut. 633306.
166. Modern Fruit Products, Marathakara PO, Ollur. 680306. Trichur Dt.
167. Seenu Products, 7/592. College Road, Palghat.
168. Chakola Beverages, Muringoor PO, Chalakudy, Trichur Dt.
169. Vocational Training centre, Bethel Ashram Mission. Qrs, Trichur.
170. Tropical Fruit Products, XVI/322. Main Road, Near Municipal office, Tripunithura. 682301.
171. Mak Food Products, Gujrathi st., Calicut. 1.
172. Attarwala Fruit products co., Needa parambakunnu PO. Veliparamba, Calicut. 8.
173. Pycot Foods & Condiments, 24/263, Kalapadam Paramba, Kumhikoya Road, Azechavattam, Calicut. 7.
174. Poonithura Industries, Kangazha. 686541. Kottayam Dt.
175. S.B. Food Products, New House. VII:/422, Perumkulam. 695102.
176. Mascot Food Products, 14/480. Thottulipadam Road, Vattampoil west, Calicut.
177. Dhan, The College of Horticulture Kerala Agri. University, Valanikara, Trichur. 54.
178. Prathikshal Food Products, Panummandam, Malappuram. 676106.
179. Guruji Food Products, 26/1451. A. Heera Manzil, Kommeri, Calicut. 673007.
180. Chitra Food Products, Perumanzal, Mana FO. Attur, Trichur Dt.
181. Jessy Products, Gandhi Road, 4/345. Nakkadiparamba, Calicut. 673032.
182. Modern Food Proc. 2/184. Nathalam Bazar, Nallalam, Calicut. 673027.
183. Super King, Choondal House, Choondal village, Trichur. 680502.
184. Preethi Food Products, 1/52. U.C. College PO. Alwaye. 603102.
185. Leo Foods & Spices, 10p/402. Chalad, Cannanore. 670014.
186. Beekay Food Products, 6/399. Chennkkal PO. Randathani. 676510. Malapuram
187. G.G. Beverages, D.No. 699A. Pazhaveedu PO. Alleepey. 9.
188. Abraham David, Rose Bldgs, Kayan Kulam PO, Alleepey. Dt.
189. Parvathi Food Products, Parvathi Nivas, Pulikkal Mada, Chalakara, Trichur. Dt.
190. Ashwathy Food Industries, Market Road, Udyampancor, Ernakulam Dt.
191. Sree Vishnu Pickles, Manakad PO-Thodupuzha. 685584.
192. Sree Vishnu Pickles, Sarathi food packers, Mini Indl. Estate, Manakad PO. Thodupuzha.
193. Amba Foods, IV/198. A. Chelakkottukara, Trichur. 680005.
194. Divine Food Products, 12/398. Kayaparamba Road, Halwa Bazar, Calicut.
195. Major Food Products, Kaithakkad, Cherrathur. 671313.
196. Tas Foods & Syrup, 15/2006. South Beach Road, Calicut. 673001
197. Tilak Food Products, Kayikara Lane, Nuttathara, Trivandrum. 685008.
198. Ashmi Food Products, 14/1402. Taliparamba, Cannanore.

199. Bismi Enterprises, VII/412. Gunapai Road, Marakadavu, Cochin. 2.
200. Essjay Cultivators & Food Processors, 1/426. Taj Mahal, Nalanchira, Trivandrum. ~~52x~~
201. Delicious Food Products, Ward. XI. H. No. 261. Mangad, Kilikollam, Kollam, Kerala.
202. Vinayaka Food Products, Mancaud, PO. Thodupuzha. Kerala.
203. Varma Foods & spices, 9/730. A. Olavanna, Calicut. 25.
204. Annapurna Condiments, 15/2020. South Beach Road, Calicut. 673001.
205. Mangala Foods, RS No. 78/1. Palakulangara, PO. Taliparamba, Kannur Dt.
206. Nishi Foods & Condiments, 21/1697. A. Patterthodi, Payyanakkal PO. Kallai, Calicut. 3.
207. Malavika Food Processing unit, C/o Block Devp. Officer, Mala Block, Kuruvilassery PO. Trichur Dt.
208. Athmi Food Products, 69 B. Vijauapuram Panchayat, Mannercaud PO. Kottayam. 686019.
209. Granny's Food Products, VI/26. Mundakayam PO. Varikany. 686513.
210. Tastee Food Products, Onambalam, Mulavana PO. Kolam. 691503.
211. K.K. Food Products, 4/213. B&C Palathara, Kottakkal, Malapuram Dt.
212. Sagy Food Products, Karumkulam, Puthiyathura PO. Trivandrum. Dt.
213. Harisree Food Proc. Unit, Haripad Block, Mannarasala PO. Alleppey. Dt.
214. Rafny Food Products, 31/139. Opp. St. Peters' Church, Chalil, Tellicherry 4.
215. Green Valley Beverages, VIII/324/A. Khuttanellur PO. Trichur.
216. Anugrah Enterprises, LX/210. A. Nanthiattukunnam, Ezhikkara, N. Paravur. Ernakulam Dt.
217. M Jyothi Brothers, VIII/205. Love Dale Railway Station Road, Trivandrum. 695582.
218. Tropical Fruits, Kuravilangad, Kottayam. Dt.
219. Fine Food Products, 4/370. Chenakkal, Kutti puram, via. Kottakkal, Malappuram Dt.
220. Mummy Pickles, Ambady. TC 10/1064(2). Coop. Housing Gardens, Mannanmoola, Peroorkada PO-Trivandrum. 695005.
221. Block Development Officer, Food Processing & Fruit Preservation unit, Vypin Block, Ayyampilly PO. Ernakulam. Dt.
222. Karikattil Enterprises, ~~xxxx~~ Ward No. III/621. S.No. 77/4B. Thycauttucherry PO. Shertallai. 688528
223. Lovely Food Industries, Ward No. VII, D.No. 203. Poochakkal PO, Shertalai. 688526.
224. Neema Food Products, Kunnu uram, Abdurachiman PO. Malappuram Dt.
225. Prakash Food Products, 356/XX. Muthoor, Tiruvalla. 7.
226. Chithra Foods, H.No. 252. Vettarakad PO. Trichur. Dt. 680584.
~~xxxx~~

3. Input-output details

Crops	Inputs								Output		
	Labour	Seed	Ferti- lizers/ Manures	Pesticide/ Insecti- cide	Irrigation	Q	P	S			
	No	Cha- rge	Qty	Price	Qty	Price	Qty	Price	Sche- dule	Cha- rge	

1. Mango
2. Pineapple
3. Cashew
apple
4. Guava
5. Jackfruit
6. Bittergourd
7. Chilli

4. Sale proceeds

Name of crop	Open market		Processing unit		Marketing co-oper- ative		Inter- mediaries		Others	
	Qty	Price	Qty	Price	Qty	Price	Qty	Price	Qty	Price

- a. Mango
- b. Pineapple
- c. Cashew apple
- d. Guava
- e. Jackfruit
- f. Bittergourd
- g. Chilli

5. Source of demand

Name of crop	Name of the Processing unit/Co-op./Wholesaler/Retailer	*Frequency of orders	Percentage in quantity	*Mode of payment
a. Mango				
b. Pineapple				
c. Cashew apple				
d. Guava				
e. Jackfruit				
f. Bittergourd				
g. Chilli				

*Specify frequency and mode of payment as daily/weekly/immediately/Fortnightly/Monthly/Occasionally.

6. Reason for opting each source (specify in order of preference)

	Name of crop	Open market	Processing unit	Marketing Co-operatives	Inter-medaries	Others
(i)	Locational advantage					
(ii)	Price					
(iii)	Payment procedure					
(iv)	Facilities provided					
(v)	Free transportation facility					
(vi)	Storage facility					
(vii)	Provision of inputs					

7. Financial assistance

	Credit facility from	Amount availed	Rate of interest	Mode of repayment	Remarks
a. <u>Open Market</u>					
	Wholesaler				
	Retailer				
b. Processing Unit					
c. Marketing Co-operative					
d. Intermediary					
e. Others					

8. Has the unit violated your agreement at any time?

Yes No

9. If yes, when?

10. Reason for violation

11. Details on transportation charges

12. Any Government regulation regarding the production aspect?

Yes No

13. If yes, specify

MARKETING PRACTICES IN FRUIT & VEGETABLE PROCESSING INDUSTRY

Schedule B: Customers

The purpose of this survey is to study the opinion towards fruit and vegetable processing units. No information will be disclosed or used for any purpose other than research.

1. Household information

Name	Sex	Age	Occupation		Education
			Main	Subsidiary	

1.					
2.					
3.					
4.					
5.					
6.					

2. Being a customer of processed fruit/vegetable, specify the item(s) you purchase

Jam, Squash, Pickle, Sauce, Dried, All

3. Frequency of purchase

Weekly, Fortnightly, Monthly, Occasionally

4. Useage pattern

Breakfast, Lunch, Evening tea, Supper

5. If occasionally, on which occasion do you prefer processed fruit/vegetable?

Party, Tours, Vacation/Holidays, Daily diet.

6. Reason for preference on each occasion

Party :

Tours :

Vacation/Holidays :

Daily diet :

14. Problems faced in:

Production	Distribution	Transportation	Storage	Finance	Others
------------	--------------	----------------	---------	---------	--------

1.

2.

3.

4.

5.

6.

15. Suggestions for improvement, if any

7. Specify the brand

Jam :

Squash :

Pickle :

Sauce :

Dried :

8. Usage period

1-3 Years, 5 Years, 10 Years, 15 Years

9. Reason for preference of this brand

Quality, Price, Availability, Taste, Package

10. At any time, shifted from/to any other brand?

Yes No

11. If yes, specify the brand

12. Reason for shifting

Better quality, Easy availability, Price, Package, Taste

13. At present, do you feel that there is a need to shift to any other brand?

Yes No

14. If yes, specify the brand

15. Reasons for need of a shift

16. Knowledge about brands acquired from

Newspaper, TV, Radio, Magazines, Word-of-mouth, Others

17. Do you prefer national brands alone?

Yes No

18. If yes, why?

19. Do you prefer local brands?

Yes No

20. If yes, why?

21. Quantity & price of each item purchased

Frequency	Jam		Squash		Pickle		Sauce		Dried		Others	
	Qty	Price	Qty	Price	Qty	Price	Qty	Price	Qty	Price	Qty	Price
Weekly												
Fort-nightly												
Monthly												
Special occasion												

22. Place of purchase

Wholesaler, Retailer, Co-operative Store, Others

23. You insist on

Price, Quality, Easy availability, All the three

24. Who decides on the product purchase?

Father, Mother, Children, Jointly, Others

25. Who purchases it?

Father, Mother, Children, Others

26. Do you think that advertisements are necessary to promote processed fruit/vegetable?

Yes No

27. If yes, specify the media most preferred.

Newspaper, Magazine, TV, Radio, Others

28. Reason for preferring this media

29. You demand any other product/item from fruits/vegetables

Yes No

30. If yes, specify the product
31. Whether any demanded product has been out of stock?
Yes No
32. If yes, specify the product
33. Time gap: 1 week, 2 weeks, 1 month, 3-6 months
34. Whether any demanded brand has been out of stock?
Yes No
35. If yes, specify the brand
36. Time gap:
37. Problems any in the purchase of processed fruit/vegetable?
Yes No
38. If yes, specify
39. Inconvenience any, in the use of the product?
Yes No
40. If yes, specify
41. At any time, have the package attracted you and influenced your purchase decision?
Yes No
42. If yes, give details
43. Suggestions for improvement, if any

III Distribution pattern : Daily/Weekly/Fortnightly/Monthly

Crop	Fresh fruits						Processed item					
	Whole saler		Re-tailers		Agent		Whole saler		Re-tailers		Agent	
	Qty.	Rs.	Qty.	Rs.	Qty.	Rs.	Qty.	Rs.	Qty.	Rs.	Qty.	Rs.
1. Mango												
2. Pineapple												
3. Cashew appl												
4. Guava												
5. Jack fruit												
6. Bittergourd												
7. Chillie												

IV Customers purchasing fresh fruits

Crop	Processing Unit		Retailers		Individuals		Agents	
	Qty.	Price	Qty.	Price	Qty.	Price	Qty.	Price
1. Mango								
2. Pineapple								
3. Cashew apple								
4. Guava								
5. Jack fruit								
6. Bittergourd								
7. Chillie								

V Customer purchasing processed item

Name of item	Retailers		Agents		Individuals		Others	
	Qty.	Price	Qty.	Price	Qty.	Price	Qty.	Price
1. Jam								
2. Squash								
3. Pickle								
4. Sauce								
5. Dried								
6. All								

VI Dealership pattern of processed item

Local brand	Price/kg	National brand	Price/kg
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			

VII Give details regarding the transportation mode

1. Do you have a vehicle of your own? Yes/No
If yes, specify
2. If no, do you hire? Yes/No
If yes, give details

3. Does the processing unit provide any transportation facilities?
Yes/No
If yes, specify
4. Give details regarding the transportation charges.
5. Do you have storage facility of your own? Yes/No
If yes, give details
If no, do you hire? Yes/No
If yes, specify
6. Have you faced any storage problem? Yes/No
If yes, When?
7. Have you advertised your products through some media?
Yes/No
If yes, specify the media and give details
8. From which area (s) do you procure fruit/veg.
Give reasons for procuring from the specified area
9. To which area do you distribute your items?
Reasons for distribution in the particular area

Is there any difference between the price of the produce/
product in each area? Yes/No
If yes, what are the reasons for the difference in price?
Problems faced, if any
Suggestions, if any

iii) Purchase and sale pattern of processed items: Monthly/Fortnightly
(Dealer/Super Market/Retailer/Agent/Individual/Others)

Name of Unit and pdts.	Flavour	Qty/bottle	Rs.	Purchase		Sales	
				Qty.	Rs.	Qty.	Rs.
1. Kalyan							
a. Jam							
b. Squash							
c. Pickle							
d. Syrup							
e. Juice							
2. Caico							
a. Jam							
b. Squash							
c. Pickle							
d. Syrup							
e. Juice							
3. Sudha							
a. Jam							
b. Squash							
c. Pickle							
d. Syrup							
e. Juice							
4. Premier							
a. Pickle							
b. Juice							
c. Syrup							

iv) 1. Do you own a vehicle ? Yes/No

2. Do you hire ? Yes/No

3. Does the processing unit provide any transportation facilities?
Yes/No
If yes, specify
4. Give details regarding the transportation charges.
5. Do you have storage facility of your own? Yes/No
If yes, give details
If no, do you hire? Yes/No
If yes, specify
6. Have you faced any storage problem? Yes/No
If yes, when?
7. Have you advertised your products through some media?
Yes/No
If yes, specify the media and give details
8. From which area (s) do you procure fruit/veg.?
Give reasons for procuring from the specified area
9. To which areas do you distribute your items?
Reasons for distribution in the particular area

Is there any difference between the price of the produce/
product in each area? Yes/No
If yes, what are the reasons for the difference in price?
Problems faced, if any
Suggestions, if any

Product mix and Price - Unit A

	Product	Quantity	MR Price (Rs.)
1.	Pineapple Jam	200 grm	13.00
2.	Pineapple Jam	500 grm	26.00
3.	Pineapple Jam	1 Kg	43.00
4.	Pineapple Jam	4 Kg	160.00
5.	Pineapple Slices	850 grm	30.00
6.	Pineapple titbits	850 grm	29.00
7.	Tender mango pickle	400 grm	29.50
8.	Cut mango pickle	400 grm	25.50
9.	Pineapple syrup	700 ml	32.00
10.	Lime juice (cordinol)	700 ml	23.00
11.	Mixed jam	200 grm	13.00
12.	Mixed jam	500 grm	26.00
13.	Mixed jam	1 Kg	43.00
14.	Mixed jam	4 Kg	160.00
15.	Orange squash	700 ml	25.80
16.	Grape squash	700 ml	29.00
17.	Pineapple squash	700 ml	25.80
18.	Lime pickle	400 grm	25.50
19.	Tender mango pickle	200 grm	19.00
20.	Lime pickle	200 grm	15.00
21.	Cut Mango pickle	200 grm	15.00
22.	Mango slices	850 grm	35.00
23.	Tomato sauce	500 grm	25.00
24.	Tomato sauce	1 Kg	39.00
25.	Pineapple juice	850 ml	15.00
26.	Tomato juice	850 ml	15.00
27.	Orange juice	850 ml	15.00
28.	Mango juice	850 ml	14.00
29.	Mango bar	200 grm	23.00
30.	Mango bar	100 grm	12.00
31.	Garlic pickle	300 grm	25.75
32.	Garlic pickle	300 grm	28.00

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Product Mix and Price -Unit R

Product	Quantity	MR Price (Rs.)
1. Mango Jam (Export)	500 grm	55.00
2. Mango jam (Export)	1 Kg	100.00
3. Mixed jam	200 grm	13.00
4. Mixed jam	500grm	27.00
5. Mixed jam	1 Kg	42.00
6. Pineapple jam	200 grm	13.00
7. Pineapple jam	500 grm	27.00
8. Pineapple jam	1 Kg	42.00
9. Mango squash (Export)	700 ml	30.00
10. Orange squash	700 ml	25.00
11. Lime squash	700 ml	25.00
12. Pineapple squash	700 ml	25.00
13. Tomato sauce	850 grm	32.00
14. Tender mango pickle	400 grm	28.75
15. Tender mango pickle	200 grm	18.00
16. Lime pickle	400 grm	23.75
17. Lime pickle	200 grm	14.00
18. Cut mango pickle	400 grm	23.75
19. Cut mango pickle	200 grm	14.00
20. Chilli pickle	400 grm	30.00
21. Chilli pickle	200 grm	16.50
22. Mixed vegetables	400 grm	30.00
23. Mixed vegetables	200 grm	16.50
24. Garlic pickle	400 grm	35.00
25. Garlic pickle	200 grm	18.50
26. Juice (mango)	200 ml	5.00
27. Pineapple syrup	700 ml	34.00

Product Mix and Price - Unit C

Product	Quantity	Price in Rs.
1. Tender Mango Pickle	500 grm	27.00
2. Tender Mango Pickle	400 grm	24.00
3. Tender Mango Pickle	300 grm	22.00
4. Cut mango pickle	500 grm	22.00
	400 grm	20.00
5. Cut mango pickle	300 grm	18.00
6. Cut mango pickle	500 grm	22.00
7. Lime pickle	400 grm	20.00
8. Lime pickle	300 grm	18.00
9. Lime pickle	400 grm	26.00
10. Garlic pickle	700 ml	27.00
11. Pineapple squash	700 ml	27.00
12. Orange squash	700 ml	27.00
13. Grape squash	500 grm	25.00
14. Pineapple jam	500 grm	25.00
15. Mixed jam		
16. Canned mango pulp	3 Kg	93.00
17. Canned mango pulp	850 grm	29.00

Product Mix and Price - Unit D

Product	Quantity	Price in Rs.
Tender Mango	400 grm	24.00
Tender Mango	200 grm	13.00
Cut Mango	400 grm	20.00
Cut Mango	200 grm	11.00
Lime pickles	400 grm	20.00
Lime pickles	200 grm	11.00
Mango juice	250 ml	5.00

**MARKETING PRACTICES OF FRUIT AND
VEGETABLE PROCESSING INDUSTRIES IN
THRISSUR DISTRICT**

By
JEEJA. T. V.

ABSTRACT OF A THESIS

Submitted in partial fulfilment of the
requirement for the degree of

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(RURAL MARKETING MANAGEMENT)

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ABSTRACT

The study entitled "Marketing Practices of Fruit and Vegetable Processing Industries in Thrissur District" was undertaken to examine the practices in procurement of inputs, selection of product mix and cost and to examine the marketing efficiency of the fruit and vegetable processing industries.

Fruit and vegetable processing units, falling respectively in the classes of 'oldest unit in the district', 'excellent unit in the district', 'co-operative form of organisation', and 'a household rural unit' were selected from the district. Farmers, intermediaries in the procurement of raw materials, intermediates in the distribution network of processed products and consumers were selected randomly for gathering primary data. The data was collected during the period 1993-1995. Simple averages, percentages, tables, non-parametric test and direct reporting comprised the methodology.

The main raw materials used by the processing industry was fruits and vegetables collected from local production centres. However, raw materials were also procured from out-of-state production centres when insufficiency was felt and to improve the product range.

The number of channels and intermediates in the procurement process was lengthy, but were performing certain critical functions at times. So the study suggests a revised model which

combines the positive aspects of each channel and also provides satisfaction to the farmers, functionary and processing units.

The product mix of the oldest unit was the highest while that of the rural household unit was the lowest. It was observed that when product mix was higher, price of products also went up.

The marketing efficiency of the distribution network analysed through functional, price spread and consumer response analysis revealed that channel involving dealers was the most effective channel.

Finally, a new model, from procurement of raw materials to distribution of processed items, is suggested for improving the performance of processing industries.