

# VALUE CHAIN PERSPECTIVE OF COCONUT



**Dr. G. Veerakumaran**  
**Geethu Kuriakose**  
**Anumol Sabu**  
**Aneeta Byju**



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BY

Dr.G.VEERAKUMARAN

GEETHU KURIAKOSE

ANUMOL SABU

ANEETA BYJU



COLLEGE OF COOPERATION, BANKING AND MANAGEMENT

KERALA AGRICULTURAL UNIVERSITY



SHANLAX PUBLICATIONS

66,61, Vasantha Nagar, Madurai - 625003

e-mail: shanlaxpublications@gmail.com

web: www.shanlaxpublications.com



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© Dr.G.VEERAKUMARAN, GEETHU KURIAKOSE, ANUMOL SABU,  
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December 2015

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ISBN: 978-93-85399-94-7

Price: Rs. 300/-

## ***Publisher***

**SHANLAX PUBLICATIONS**

61, 66 T.P.K. Main Road, Vasantha Nagar  
Madurai – 625 003.

Ph: 0452-4208765, 9600303383

shanlaxpublications@gmail.com

www.shanlaxpublications.com



## **Dedicated to**



**Prof. Philip Sabu**

**Retired Director of MBA (Agribusiness Management), KAU**

**In honour of his <sup>5</sup>34 years of stellar service (24-09-1980 to 09.11.2015) as a dedicated, honest and empathetic teacher, adept administrator and an inspiring Leader who championed the Institution - Industry Interface, leveraging his remarkable scholarship in management science.**



## PREFACE

India stands first in productivity (8936 nuts/ha.) and production (16943 million nuts) and third in area under coconut cultivation in the world. The crop contributes more than Rs. 8000 crore annually to the GDP and earns valuable foreign exchange to the tune of Rs. 2000 crore by way of export of coconut products. The crop sustains 10 million people in the Country through cultivation, procurement, processing, marketing and trade related activities. Thus the crop is of immense social and economic value in the Indian economy.

Kerala has the largest area under coconut cultivation at 7.99 lakh ha. and occupies first position in production among the Indian States. The State produced 5799 million nuts per year (2012-13) and around 60% of the production occurs in the peak producing months from January to July. Coconut cultivation in the State is undertaken mainly in small and marginal holdings.

The price of coconut is characterised by high volatility and it moves in tandem with the price of coconut oil, the main derivative from the crop. Coconut and coconut oil being used mainly for culinary purpose and that too in Kerala, the price of coconut oil is determined by the price of other edible oils in the market. The industrial use of coconut oil is very significant. The farmers are exploited by the intermediaries in the absence of an integrated value chain owned and managed by the coconut growers. The industry is also stuck in the production mix of coconut, copra and coconut oil without any attempt to diversify the products. The dependence of coconut price solely on coconut oil price can be broken only when better value-added products are developed from coconut. Other major coconut producing countries like Philippines and Sri Lanka have moved up the coconut value chain by introducing a number of value-added products. Technology is today available to produce a slew of value-added products like Neera, Virgin Coconut Oil, Coconut Vinegar, Coconut honey, Coconut jaggery, etc. from coconut. Through the establishment of appropriate institutional structures and right policy incentives it is possible to turn around the fortunes of coconut growers.

Collectivization of producers, especially small and marginal farmers, into producer organisations has emerged as one of the most effective pathways to address the many challenges of agriculture but most importantly, improved access to investments, technology, inputs and markets. In this context, Ministry of Agriculture, Government of India has identified Farmer Producer Company, registered under Part IX A of the Companies Act, 1956 as the most appropriate institutional form around which to mobilise farmers and build their capacity to collectively leverage their production and marketing strength.



d Several institutional models have been experimented in India to integrate farmers with the value chains. The most common model is the producer co-operatives which enable farmers to organize themselves as collectives. The co-operative experience in India in integrating farmers into a value chain has not been very successful (save the AMUL model in Dairying) as co-operatives have largely been state promoted with a focus on welfare of the members rather than the economic and social viability of the enterprise. The need to organise farmers especially small farmers to improve their socio-economic conditions through specific economic activities is an accepted fact. The basic purpose of the producer companies is to collectivise small holders or producers for (a) backward linkages for inputs like seeds, fertilizers, credit, insurance and technology and (b) forward linkages such as collective marketing, processing, market-led production, etc. At the heart of this endeavour is to gain collective bargaining power for small farmers. Thus producer companies are organizations that combine the principles and philosophy of co-operation, efficiency and entrepreneurial orientation of private enterprise and social responsibility of public enterprises in one whole. Realising the potential of producer companies to transform the fortunes of coconut growers, the Coconut Development Board initiated a grand plan to form coconut producer companies for the production and marketing of value added products from coconut by providing technological, finance and managerial support to them.

[ The Kodungallur Coconut Produce Company Ltd. (KCPC) was registered on 24<sup>th</sup> October, 2013 with an authorized capital of Rs. 5 crore. The company is situated at Perinjanam Panchayat in Kodungallur Taluk in Thrissur district. It is the apex organization of 23 federations of coconut producer societies which are the grass root level organizations of coconut growers. The main objective of KCPC ~~is~~ is to build a prosperous and sustainable coconut sector by carrying out various business activities such as production, procurement, processing and marketing of coconut value-added ~~coconut~~ <sup>based</sup> products. Within a short span of time the company has been able to put in place a value chain for the production and marketing of some value added products from coconut produced by the farmers within its area of operation. The study covered by the book attempts to map the value chain forged by the company with respect to processes, actors, activities, interfaces, value addition, constraints and potentials. It also analyses the satisfaction of the consumers with regard to its products and impact of the value chain on the income of the member farmers. The study clearly figures out the value created to the farmers through the production and marketing of Neera, Coconut oil and Vinegar. The farmers are assured of a daily income Rs. 30 per day per litre from Neera production. Neera, which is a nutritious health drink with zero alcohol can revolutionise coconut farming. In <sup>the</sup> consumer survey, the consumers' <sup>expressed</sup> higher level of satisfaction (measured by index number) towards Neera (90.17) Coconut oil (83.4)



and Vinegar (81.33) ~~is worth mentioning~~. However, the consumers expressed low level of satisfaction with the promotional efforts of the company. The production of value-added products is the best strategy to break the age old equation of coconut-copra-coconut oil and to enhance the price of coconut. Since, Neera has good demand there is immense potential to increase production from the present 100 litres per day. When farmers who gave their palms for Neera production got an additional income of Rs. 16100/- per palm annually the income increase was just Rs. 200/- in the case of other farmers.

The study shows that there was significant increase in the income from coconut cultivation after joining KCPC ~~Ltd~~ particularly in the case of farmers having 25-50 palms and 50-75 palms. Farmers with 25-50 palms were found following scientific cultivation practices. KCPC ~~has~~ has been able to bring in significant increase in the income of farmers and ~~ignited~~ <sup>ignited</sup> great hope in the ~~farmers~~ <sup>Coconut farmers</sup>.

ignited

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# ACKNOWLEDGMENTS

At the outset the authors would like to thank Prof. Philip Sabu, Retired Director of MBA (Agri Business Management), Kerala Agricultural University for introducing the domain of Value chain Research in the college and kind enough to write preface to this book.

We also express our gratitude to Dr.A.Sukumaran, Associate Dean, Dr.E.Vinaikumar, Head, Department of Cooperative Management, Dr.P.Shaheena Head, Department of Development Economics, Dr.K.N.Usha Devi, Head, Department of Rural Marketing Management, Dr.Molly Joseph, Head, Department of Rural Banking and Finance, Dr.A.M.Jose, Associate Director MBA(ABM), Sr.E.G.Ranjitkumar, Associate Director MBA(ABM), Dr.R.Sendilkumar, Dr.K.A.Sunandha, Sri. M. Mohanan, Sri. Jacob Thomas .M Sri. P.J. Boniface Mrs. Misha Davis .A Dr. Sangeetha KPrathap , Sri. K.P .Sathyan (Librarian) and other teachers, staff of College of Cooperation, Banking and Management.

We are also ~~thank~~ <sup>grateful</sup>ful to Sri. Sachidanandan, Chairman, Kodungallur Coconut Producer Company Ltd., and his team for the support extended to collect relevant data for the study.

We express our sincere thanks to <sup>our</sup> parents, family members and friends as well.

Dr.G.Veerakumaran  
Geethu Kuriakose  
Anumol Sabu  
Aneeta Byju



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# CHAPTER 1

## DESIGN OF STUDY

### 1.1 Introduction

Kerala, God's own country, is gifted with unique climate, topography and agro-ecological environment with never ending array of coconut palms, sun blached beaches, enchanting backwaters, pleasing flora and fauna, fragrance of spices, thousands of art forms and festivals. The total land area of Kerala is 38,863 km<sup>2</sup> with Western Ghats in the East and Arabian Sea in the West with diverse climatic and topographic features. The coastal area of Kerala stretches to 580 km North-South with varying width of 35 km-120 km. The topography of Kerala is divided into high land, mid land and low land. Tea, cardamom and coffee are the major crops cultivated in the high lands while the mid lands have pepper, arecanut, rubber, rice, vegetables, fruits, etc. In the low lands, coconut and rice occupies the major area under cultivation.

Agriculture in Kerala has a very strong history which contributed a major share to its economic prosperity. It was the livelihood of majority of the people. The produces were either sold or were taken for their own consumption purpose. After liberalisation of economy, farmers realized the potential of agriculture and transforming subsistence farming in to agribusiness. However, the share of agriculture in Gross State Domestic Products (GSDP) has shown a declining trend from 36.99% in 1980-81 to 8.95% in 2012-13. The land use pattern in Kerala is 53% net area sown, 28% forest, 10% land put into non-agricultural uses, 2% cultivable waste land, 2% current fallow, 1% fallow other than the current fallow and 4% for others (Economic Review, 2012-2013). Although Kerala is an agrarian economy, now a days the share of agriculture is coming down. Though, rice is the staple food of Kerala, cultivation of rice is diminishing and farmers are shifting more to cash crops which include coconut, rubber, cashew, coffee, tea, etc. The major reason behind this phenomenon is that the paddy farmers get low price for their produces which cannot even meet the cost of production.

As the name suggests, Kerala is the land of 'Keram' which means coconut and it is the major crop cultivated. Coconut palm (*Cocos nucifera* linn) is one of the most



useful palms in the world. It is also known as 'Kalpavriksha' meaning 'Tree of Heaven'. Coconut is a tree which grows up to 30m tall with pinnate leaves and without any branches. It is generally classified into two, i.e., tall and dwarf. If proper cultural practices and fertile land is available a coconut palm can yield up to 120 nuts per year. Botanically, the coconut fruits are drupes not nuts which has three layers, exocarp, mesocarp and endocarp. The endocarp is known as kernel which is the edible part of coconut and has high nutritive value. The coconut water inside the nut is also nutritious. The coconut shell is used as a fuel, to make handicrafts and it is a source of charcoal. The coconut husk can also be used as a fuel and is the raw material for coir industry. Coconut leaves are used to thatch roofs, as a feed for elephants, to make brooms, etc. The trunk is used for construction of houses, small bridges, making furniture, handicrafts, etc. The inflorescence is used to make ayurvedic medicines and other value added products. The coconut root is used to make mouthwash and is used as a medicine for diarrhea and dysentery. Like this, every part of the coconut palm is useful and the cultivation of coconut opens a wide scope for production of different types of products.

In India, Kerala stands first in coconut cultivation and production. The landscape and soil in Kerala is ideal for coconut cultivation. The coastal area of Kerala has the most suitable fertile soil for the coconut cultivation. Coconut is an inevitable part of Keralites. Minimum of one coconut will be consumed by each family per day and is an integral part of their food preparation. Besides this, since Kerala is the largest producer of coconut, the scope for export of coconut and value added products is also very high. Therefore, the coconut cultivation in agricultural scenario of Kerala is very important. The following table shows the area, production and productivity of coconut in Kerala:



**Table 1.1: Area, Production and Productivity of Coconut in Kerala**

Year	Area (000' Ha.)	Production (Million nuts)	Productivity (nuts/Ha.)
2008-09	788	5802	7384
2009-10	779	5667	7278
2010-11	770	5287	6862
2011-12	821	5941	7237
2012-13	799	5799	7265

Source: Directorate of Economics and Statistics, CMIE and CDB (2012-13)

The Economic Review of Kerala, 2013 shares that although coconut is a major crop in Kerala, its cultivation and production has been declining over the years. The area and production of coconut which accounts for 69.58% and 69.52% respectively in 1960 and 1961, has come down to 40.2% and 42.12% respectively in 2010-2011 and 2011-2012. Again it declined by 2.3% in 2012-13 over the previous year. The reasons for this declining trend can be the diseases which affected the palm, high labour cost, low value addition, etc. But from 2011-12 onwards the productivity of coconut has increased tremendously due to the interventions taken by the Government of Kerala and Coconut Development Board. This is due to the introduction of new technologies and value added products from coconut which gives the farmers more income and profit.

The value addition in coconut has wide scope since it covers a wide range of value added products and it's by products. Apart from the oil produced out of coconut, there are lot many other innovative products produced from coconut such as Coconut chips, Tender coconut water, Coconut ice cream, Desiccated coconut, carbonated coconut soda, Coconut vinegar, Coconut oil soap, Cattle feed, Coconut palm jaggery, Virgin coconut oil, Neera and so on. The process of value addition gives additional income for the farmers. But the problem faced is that the high cost of value addition which is not affordable to most of the coconut producers. Here lies the importance of organisations which promote and support the coconut value addition. One such innovative idea is the Farmer Producer Companies registered under Companies Act, 1956. The idea of Farmer Producer Companies was brought out in the year 2002 by



incorporating a new part IX A in Companies Act, 1956, following the recommendations given by the High Level Committee headed by Dr. Y. K. Alagh, formed on November 1, 1999 which submitted its report on March 15, 2000.

In Kerala, as on February 9, 2015 the Coconut Development Board (CDB) has promoted 15 Farmer Producer Companies in Kasaragod, Kannur, Kozhikode, Malappuram, Palakkad, Thrissur, Ernakulam, Alappuzha, Kollam and Thiruvananthapuram districts. Alappuzha has 2 Farmer Producer Companies and Kozhikode has 5 Farmer Producer Companies and other districts have one company each. The present study is trying to make out an analysis of value added products of coconut, produced by Kodungallur Coconut Producer Company (KCPC) Ltd., of Thrissur district, Kerala and the impact created on farmers by the Company.

The Kodungallur Coconut Producer Company (KCPC) Ltd is the only coconut producer company under the ownership of coconut farmers in the Thrissur district with the approval of Coconut Development Board (CDB). The company was registered on 24, October 2013 under the Companies Act, 1956 with Rs. 5 crores capital. The company is situated at Perinjanam Panchayat in Kodungallur Taluk of Thrissur district. Pure coconut oil and other value added products are marketed by the company. The Coconut Producers Federations from four blocks, Mathilakam, Thalikulam, Mala and Chavakkadu and Kodungallur municipality are affiliated to this company. This is the 7<sup>th</sup> producer company formed under CDB. The major objective of the company is to form a sustainable coconut industry through the cost efficient utilization of resources and thus to increase the profitability of the farmers.

In this context, an attempt was made to map the value chain of Neera, Coconut oil and coconut vinegar produced by Kodungallur Coconut Producer Company Ltd. and to analyse the consumer preference towards the products. Moreover, impact on the member farmers' income was also examined.

**Neera (coconut sap)** is a non-alcoholic and nutritious drink which is tapped from the immature unopened inflorescence of the coconut tree. It is a sweet and delicious health drink which is oyster white in colour and translucent. It is a rich source of vitamins, minerals and amino acids having almost neutral pH. Neera having a low Glycemic Index (GI-35) is often referred to as "diabetics friendly". It is also good



for digestion, clear urination and against jaundice. The vascular sap tapped from the coconut inflorescence, filtered, pasteurized and added with, is popularly known "Neera" (Malayalam word). Neera is usually stored in ice bags to prevent fermentation. Treated Neera can be preserved under room temperature in cans for about 2 months. Several value added products like jaggery, honey and sugar can be produced from Neera.

**Table 1.2: Composition of Neera**

Total solids (g/100ml)	15.2 - 19.7
Specific gravity	1.058 - 1.077
Total sugars (g/100ml)	14.40
Original reducing sugars (g/100ml)	5.58
Total reducing sugars (g/100ml)	9.85
Total ash (g/100ml)	0.11 - 0.41
Citric acid (g/100ml)	0.50
Alcohol in %	Nil
Iron (g/100ml)	0.15
Phosphorus (g/ml)	7.95
Ascorbic acid (mg/100ml)	16.30
Total protein (g/100ml)	0.23 - 0.32

Source: [www.coconutboard.gov.in](http://www.coconutboard.gov.in)

Since Neera is nutritious health drink as well as a base for making other value added products it has a wide scope and demand in the market.

**Coconut Oil** is extracted from copra; dried kernel of coconut. It is rich in vitamin E. Coconut oil is an important cooking medium in southern part of the country, mainly in Kerala. It is also used in the manufacture of toilet soaps, laundry soaps, surface active agents and detergents, hair tonics, cosmetics, etc. It is used throughout the country as hair oil as it helps growth of the hair and as massage oil since it has a cooling effect on the body. Owing to these qualities coconut oil has a potential market in the country.



Table 1.3 Specifications of Coconut Oil

IS-542-1968	
Moisture % wt., Max	0.25
Colour in ¼ cell Lovibond y+5R, not deeper than	4
Acid Value, Max	2.0
Unsap. Matter % by wt., Max	0.8
Polenske value, Min	0.8

Source: [www.coconutboard.gov.in](http://www.coconutboard.gov.in)

Coconut Vinegar is prepared out of fermented coconut water and is used as a preservative in pickles, sauces, etc. It is also used as a flavouring agent in salads. It can also be prepared out of the coconut sap. The naturally prepared coconut vinegar is rich in vitamins such as Beta carotene, calcium, iron, magnesium, phosphorous, potassium and sodium and helps digestion. The specification of the product is as follows:

Table 1.4 Specifications of Coconut Vinegar

Acidity as acetic (g/100 ml)	5.26-5.76
Total solid (%)	1.83-1.92
Total ash (%)	0.38-0.48
Sp. Gravity	1.012-1.008
Alcohol	Nil

Source: [www.coconutboard.gov.in](http://www.coconutboard.gov.in)

Hither too, coconut water is being wasted in copra industry, but the Kodungallur Coconut Producer Company Ltd (KCPC) is taking initiative to produce coconut vinegar from this. Since coconut vinegar replaces the synthetic vinegar and is healthier than the other, the demand for the product as a preservative is increasing in the pickle industry and as a flavouring agent in the food processing industry. Also the product has scope in export market instead of synthetic vinegar.



## **1.2 Statement of the Problem**

Value addition is the process of changing the form of a product from its original state to other states which makes it more valuable. Value addition can be done mainly in two ways-either by innovation or by coordination. Innovation involves creating something new or improving the existing process, methods, products or services. Coordination deals with the improvement of relationships between various parties from producers to ultimate consumers. Value addition in agriculture is gaining greater importance. The inherent characteristic of agricultural products is their perishability. Value addition gives a solution to this problem and increases the shelf life of the products. Moreover, the value added products will have some additional properties which will add more value to the product through which the farmers can get more income.

Value addition can be done to any agricultural produce and so for coconut too. The traditional value added products from coconut are copra and coconut oil. Around 50% of coconut is used for culinary and religious purpose, 35% is converted to copra, 11% for tender nuts, 2% for seed purpose and hardly 2% for value addition excluding coconut oil production. As the demand for value added products from coconut is increasing and the profit from the traditional value added products of coconut is decreasing, the relevance of intensive Research and Development (R&D) for the development of innovative products is gaining importance. But since only less than 2% is of the coconut is utilised for value addition it is important to explore the scope of value addition in coconut.

Neera is one such value added product which is tapped out from the immature unopened inflorescence of coconut palm. Neera, being a non-alcoholic, nutritious health drink, is gaining a wide popularity now a days. It has medicinal values compared to other beverages. This opens up wide scope for Neera and it will eventually enhance the income of farmers. Because of Neera's superiority over other beverages in satisfying consumer needs, its demand is increasing in the market. The Kodungallur Coconut Producer Company Ltd (KCPC) collects coconut sap, processes it into a health drink and finally markets it under the name "Neera".

Coconut oil is another value added product, extracted from Copra; the dried kernel of coconut. Coconut oil is healthier than other oils. It has high demand in the



market. It has the potential to increase the income of farmers and it satisfying the consumer needs. The Kodungallur Coconut Producer Company Ltd (KCPC) is helping the farmer members by procuring their coconut and processing into coconut oil. The company also markets coconut oil.

Coconut vinegar is a byproduct produced from the coconut water which is normally wasted during the process of converting nuts into copra. This product brings down the cost of processing and enhances the income of farmers. Hence, in this study an attempt has been made to map the value chain of coconut with respect to Neera, Coconut oil and Vinegar.

### **1.3 Objectives of the Study**

- To analyse the value chain perspective of Neera, Coconut oil, and Coconut vinegar
- To examine the impact of Producer Company on farmers
- To examine the consumer satisfaction of Neera, Coconut oil, and Coconut vinegar.

### **1.4 Research Methodology**

Both primary and secondary data were used for the study. The primary data were collected through structured interview schedule and secondary data from published books, journals and research reports.

#### **1.4.1 Sampling Design**

- Location

The location selected for the study was Kodungallur region in Thrissur district of Kerala.

- Sample size

The sample size selected is as follows:



**Table.1.5 Sample Selection of Respondents**

<b>Respondents</b>	<b>No. of Samples</b>	<b>Tools Used</b>
Farmers	60+60+60=180	Interview schedule
Consumers	30+30+30=90	Interview schedule
Producer Company	1	Questionnaire
Federation	3	Questionnaire
Society	3	Questionnaire

The producer company selected for the study was Kodungallur Coconut Producer Company (KCPC) Ltd. in Thrissur district.

**Neera:** The Federation and Society selected for the study are Edathiruthy Federation of Coconut Producers Societies and Edathiruthy Coconut Producers Society respectively. The primary data for the study were collected from the coconut farmers coming under the area of operation of Edathiruthy Federation. The data were also collected from the actual consumers of Neera produced by the KCPC Ltd.

**Coconut Oil:** The Federation and Society selected for the study are Perinjanam Nalikeru Ulpadaka Federation and Pulichode Nalikeru Ulpadaka Sangham respectively. The primary data for the study was collected from the farmers coming under the area of operation of Perinjanam Federation. The data were also collected from the actual consumers of Coconut Oil produced by the KCPC Ltd.

**Vinegar:** The Federation and Society selected for the study were Ollur Federation of Coconut Producer Societies and Kuttanellur Coconut Producers Society respectively. The farmers surveyed were the member farmers of Kuttanellur Coconut Producer Society

The consumers were surveyed at the point of sales. It includes company outlet, retail shop and organic products outlet in the Thrissur district.



### **1.4.2 Observations made**

- Mapping the value chain
  - ❖ Core process
  - ❖ Actors involved
  - ❖ Specific activities of core process
  - ❖ Flow of products, information and knowledge
  - ❖ Geographical flow of goods
  - ❖ Value at different levels
  - ❖ Relationships and linkages
  - ❖ Business services that feed to value chain
  - ❖ Constraints and Potential solutions
  - ❖ Value chain map matrix
- Impact on farmers
  - ❖ Age
  - ❖ Gender
  - ❖ Education
  - ❖ Occupation
  - ❖ Area under cultivation
  - ❖ Number of palms
  - ❖ Production
  - ❖ Productivity
  - ❖ Income from coconut
- Consumer Satisfaction
  - ❖ Age
  - ❖ Gender
  - ❖ Education
  - ❖ Occupation
  - ❖ Annual income
  - ❖ Price
  - ❖ Quantity
  - ❖ Quality
  - ❖ Packaging
  - ❖ Certification
  - ❖ Promotion



### **1.4.3 Tools for analysis**

- a) Mapping of value chain
  - Value chain maps
- b) Impact on farmers
  - Percentage analysis
  - T test
- c) Consumer satisfaction
  - Percentage analysis
  - Satisfaction index

### **1.5 Scope and Limitation of the Study**

The study analyzed the value chain perspective of Neera, Coconut oil and Vinegar. It may help the KCPC to understand the consumer preference to their products. The study also addressed the problems faced by the coconut producers, need and role of institutional support to those farmers and also assessed the impact of value addition of coconut through Coconut Producer Company in the economic status of the farmers.

The study was limited to Kodungallur Coconut Producer Company Ltd. and to consumers of its products and so generalization of the results is not possible. Since the company was started only on 24<sup>th</sup> October 2013 and the production and sales were started only in November 2014, the data required to analyse the performance of the company was not available.



## **CHAPTER 2**

### **REVIEW OF LITERATURE**

#### **2.1 Introduction**

A review of literature can be just a simple summary of the sources of literature, but it usually has an organizational pattern and combines both summary and synthesis. A literature review is to consider theoretical points of current knowledge including substantive findings, as well as theoretical and methodological contributions to a particular topic. Literature reviews are secondary sources, and as such, do not report any new or original experimental work.

The major objectives behind reviewing the literatures are:

- To understand the subject on which the study is conducted.
- To understand the gap in the research works.
- To understand the methodology of the study.

The literature reviews done in this study are based on:

- Value addition
- Value chain
- Producer Companies
- Coconut and coconut products

#### **2.2 Reviews on Value Addition**

Krishnankutty (1987) in his article on 'New Products from coconut' pointed out that a process has been developed for the production of partially defatted edible coconut gratings that can be used in many food preparations. He further stated that the oil extracted in this process is of very good quality with very low free fatty acid content and a reasonably good shelf life.

Thampan (1988) while studying coconut industry in India pointed out that for ensuring stability in the coconut based economy, it is essential to apply technological innovations in the field of product diversification and by-product utilization. According to him, by diversifying the use of coconut and its products the present dependence on



a single commodity i.e., coconut oil could be avoided and the coconut based economy freed from the fluctuations which will be experienced in the prices of coconut oil. He has identified various area of diversification, viz., desiccated coconut, coconut cream, edible copra, soft drink, shell based products, vinegar etc.

Varmudi (2001) in his article entitled 'Need for diversification' pointed out that the coconut industry is facing severe crisis since 2000 in the form of a declining trend in the prices of coconut and its products. The main reason for this is attributed to the liberalized atmosphere and the import of palm oil. Apart from this, there were several other problems, which include lack of attention towards product diversification and by-product utilization.

According to Samarajeeva, Gunathilake and Samarajeeva (2003), there are a number of marketable products which can be produced from various parts of coconut palm. They observed that the demand of traditional coconut – based products such as copra, coconut oil and desiccated coconut has reduced. They also mentioned that a wide range of non- traditional coconut based value added products have now emerged in domestic and international markets which are the results of research and development activities of both public and private sectors.

According to Sunilkumar (2012) the import of palm oil with no or less import duty and the export restriction of coconut oil in India are the reasons for reduction of the price of coconut in our country. He opined that a hike in import duties of palm oil and export liberalization of coconut oil can be a solution for this issue. He pointed that India which stands among Top 5 Nations in production, productivity and agricultural land area, does not have a place in Top 10 position in processing and value addition among the world nations. He suggested that the permanent solution for price reduction in coconut is processing and value addition of coconut.

Priya and Lathika(2014) opined that coconut water is a natural refreshing, nutritious health drink which is widely consumed due to its beneficial properties that enhance the body's metabolism and immunity. They stated that processing of coconut into value added products promotes commercial value to the farmers. Products like packed tender coconut water can definitely mark a place by beating other soft drinks



and by providing local and international demand will benefit both producers and consumers.

### 2.3 Reviews on Value Chain

Michael Porter (1985) in his book 'Competitive Advantage: Creating and Sustaining Superior Performance' put forward the concept of 'Value chain'. The concept of value chain describes the activities an organization performs and links them to the organization's competitive position. A generic value chain model is used to demonstrate how a value chain can be constructed for a particular firm, reflecting the specific activities it performs. It shows how the activities of suppliers, dealers and the customers are linked to one another. The generic value chain consists of both primary and support activities. Primary activities are concerned with the creation or delivery of a product or services. They can be grouped into five areas: inbound logistics, operations, outbound logistics, marketing and sales and services. Each of these primary activities is linked to support activities that help to improve their effectiveness and efficiency. There are four main areas of support activities such as procurement, technology development, human resource management and Infrastructure.

Norman and Ramirez (1993) said that, in today's fast changing competitive environment, strategy is no longer a matter of positioning a fixed set of activities along that old industrial model, the value chain. Successful companies increasingly do not just add value, they reinvent it. The key strategic task is to reconfigure roles and relationships among a collection of actors-suppliers, collaborates, customers, in order to mobilize the creation of value by new combination of players.

Charles et.al (1998) describes value chain analysis as a method for decomposing the firm into strategically important activities and understanding impact on cost and value. While the long-linked technology delivers value by transforming input into product, the intensive technology delivers value by resolving unique customer problems and the mediating technology delivers value by enabling direct and indirect exchange between the customers.

Teich (2002) says the value chain as a consideration of sales and the prices which is not covered in the definition. The value chain management covers



procurement and production aspects with focus on volumes and schedules. His focus is rather the cooperation of different competence cells within a value chain network special for small and medium enterprise to improve overall value chain network planning.

Mohan Chandran (2003) studied the value chain management in Wal-Mart. By providing up to date information to the suppliers about which products are selling at certain location, Wal-Mart helps them directly monitor and adjust inventory levels to reflect sales at a fine levels of granularity. The key to improve the velocity and efficiency of its value chain is to eliminate non-electronic processes such as paper reports, faxes, and telephone calls, implements online, Web-based access to value chain data for all authorized users in the process. This reduces decision barriers that created by non-electronic media and externalizes a company's internal processes to value chain members. This empowers to make decisions based on timely information and to bring down costs and inefficiency.

Gereffi (2005), after incorporating changes in the global integration process, he developed a more dynamic, operational theory, called the GVC governance theory. Here, governance rather than the buyers and producers that drive the chain, is central to this theory. The theoretical framework draws on the three approaches. They are transaction cost analysis, production network, technological capability and firm level learning.

Fleming.G.F and Hogerth.D.M (2006) in the cooperative system: an information systems model for industry value chain management uses modern computer and communication technologies to integrate data and systems. It provide tools across the industry value chain to assist decision making at the individual business levels and to support and implement whole of value chain management strategies.

Gopinath (2007) in his study entitled Agriculture Value Chain Management: Prospects & Challenges stressed the need for a proper value chain management system for addressing the issues in agriculture. The success of value chain depends upon leveraging capabilities of various chain members within a framework of collaboration. The study says that the increased production is not benefit to farmers as the supply chains are still fragmented and inefficient. Thus the solution to the



problems in agriculture should not only focus on adoption of technology for developing value added products from the farm produce but also to integrate all activities extending from production to consumption.

Higgins et al (2007) stated that in agriculture, value chain research provides a capacity to increase efficiencies, business integration, and responsiveness and ultimately market competitiveness. In sugar, such research has expanded rapidly over the past two decades, and has been motivated by low world sugar prices and rising costs of production. This paper highlights the future opportunities in value chain research to achieve more profitable and sustainable sugar industries in different countries. Further the study shows that the value chain opportunities require more than just a technical solution and need collective participation from across the chain, and usually evolutionary Change management. While the focus of this paper is on sugar value chains, much of the information is also relevant to chains of other agricultural commodities.

Morten T.Hansen and Julian Birkinshaw (2007) described the three phases of value chain as an integrated flow. The first of the three phases in the chain is to generate ideas which can happen inside a unit, across units in a company or outside the firm. The second phase includes converting ideas or selects the idea for funding and developing them into products or practices. The third phase include diffuse of those products and practices.

Uma.etal (2007) described value chain analysis as a method for accounting and presenting the value that is created in a product or service as it is convert from input to output consumed by end users. Value chain can become complex when they reflect multi-stage production systems with multiple types of firms operation in different location in one country or multiple countries around the world.

Kumar and Kapoor (2010) conducted study on Value chain analysis of Coconut in Orissa and stated that Coconut crop forms an important constituent of food basket of the people of Orissa and meets the economic needs of people dependent on its marketing. The study conducted in five coastal districts of Orissa, which examined the market chains for coconut to find the flow of product from farmers through different intermediaries' to the consumers. Prices and market margins have been computed at



the different stages of the chain in order to reflect the value addition through various participants of the chain. Marketing channels have been found particularly in the coastal areas. No major value addition is done by the players at any level. The existence of functional channels explains that production and marketing system of coconut in the state can manage both increased supply and increased demand. The study has observed a high ratio of vendors' v/s farmers and aggregators v/s vendors in the channel. In spite of this high ratio, both vendors and aggregators are able to earn profit and are continuing the business. It is suggested that state industry department, state agriculture department and Coconut Development Board should jointly promote coconut-based industries.

Nangole et.al (2011) gave an overview of guidelines and manuals for value chain analysis in agriculture and forestry. The value chain concept has been applied in different ways by different organizations. Four stages of value chain analysis are described: appraisal, design, implementation, monitoring and evaluation. It then lists 32 guidelines and manuals, breaking them into four groups: (1) those that deal with all four stages of value chain analyses, (2) those focusing on the first two stages, appraisal and design, (3) those that focus on forest products, and (4) those examining special topics cutting across the other guidelines such as collective marketing, farmer-trader relations or gender analysis. For each guideline or manual, there is a brief overview of the contents, the specific survey instruments, case studies and the web address or other means of accessing it. The study further noted that the future work should include a more detailed analysis of the approaches and methods used in the different manuals and their strengths and weaknesses.

Arguello et.al (2012) in their study on production system and value chain in oregano (*Origanum sp.*) cultivation in the province of Córdoba (Argentina) stated that the aim of the present review was to analyze and identify the problems associated with the Production System and Chain Value of Oregano in the area of Traslasierra Valley, province of Córdoba. The Traslasierra Valley of Córdoba is a very suitable area for the production and for increasing the production of oregano. However, the agricultural management of the different oregano ecotypes should be optimized. Eco physiological studies conducted to date in the region suggest that the ecotypes of erect architecture ("Criollo") behave as more productive than the Creeping one ("Compacto"). Phytophagous lepidopteran species, such as *Achirabifidalis* (F),



*Rachiplusia nu* (Guenée) and *Spodoptera frugiperda* (Smith), among others, as well as the presence of different nematode genera are mentioned for the first time. The agricultural food chain value is characterized by small farms where most of the owners lacked a property title, which has adverse consequences. Active producers associations are necessary to focus trade and organization possibilities.

Zhan and Cui (2012) carried out review on theories and demonstration of agricultural value chain. They reviewed the studies in the field to effectively distinguish the specific characteristics of agricultural chain and its influencing factors, how to construct stable, flexible and efficient characteristic agricultural chain model. Various definitions, organization structure and evolution mechanism, information management system and technology innovation system, relevant theory and empirical study about sharing of values and allocation of risks were reviewed, and strategic recommendations on demonstration of agricultural chain made by scholars in China were summarized as well.

Stockwell et.al (2013) in his study Peri-urban food futures: opportunities and challenges to reconfiguring sustainable local agri-food value chains on the Sunshine Coast, Australia revealed that a new rural development paradigm has emerged over the last decade. Increased food production in peri-urban areas in the developed world is typical of this new paradigm. Peri-urban areas are the transitional zones between rural and urban landscapes that experience constant population change and disturbance of traditional social, environmental, and economic characteristics. Sustainable community development initiatives are complicated in these fragmented and often contested landscapes. Scenario analysis, interviews, and surveys of traditional midscale farmers with more recent micro- to small primary producers and food artisans provide insight into the challenges faced at a grassroots level. The role of government in facilitating supportive policy and planning and connecting and building the capacity of key actors involved in local and regional food value chains is reviewed. The paper argues that the government is essential to the successful planning and management of peri-urban areas because of the fragmented and/or contested quality of this unique agri-food landscape. Without further investment in place-based collaborative research, planning, capacity building, and economic development, the local food movement in these peri-urban areas is likely to continue to occupy only a narrow "alternative" cultural and economic space.



## **2.4 Reviews on Producer Companies**

Rajeev P George (2011) in an article named *Farmers in Transition, From Clusters, and Cooperatives to Producer companies*, published in *Indian Coconut Journal* clearly depicts the transition of farmers from individual agricultural production practices to group practices. The progress of Indian coconut sector can be divided into three phases viz. area expansion, production growth and addressing the problem of low income from coconut holding. The farmer cluster groups joined together to form the producer societies which linked to producer companies and it is the new method for sustainable growth in agricultural sector. This will help the farmers to pool their resources collectively, to add value to their produce and market the products through producer societies and producer companies. Indian Organic Farmers Producer Company Ltd. (IOFPCL) at Aluva, Vanilla India Producer Company Ltd. (VANILCO) at Kalamassery and Rubber Producer Companies, are the major producer companies which paved the way for launching producer company models in coconut sector.

According to Sebastian (2012) Coconut Producers' Societies (CPS) are formed to regain the lost prestige of coconut by increasing the production, productivity, processing and value addition. He said that through CPS procurement of farmers' produce, its grading, marketing, processing etc is possible. CPS also helps to reduce the intermediaries between the producers and end consumers. He recommended that through the producer societies and their federations, value added products can be marketed at national and international markets.

Sebastian (2012) stated that State level copra procuring agencies such as Kerafed, Marketfed and a very few Coconut Producers' Societies are engaged in copra procurement. He opined that lack of copra drier facility and lack of expertise in quality determination of procured copra limits the procurement function. He observed that out of the total copra procured by the Kerafed and Marketfed during 2012-2013, only 10% was procured through CPS.

G. Veerakumaran (2014) In his article on *Structural and Legal Transformation in Cooperatives- A Review of Producer Companies in India*, describes the different forms of business organisations in India with respect to Companies Act, 1956 and other business laws and has categorised those into for profit enterprises and democratic



enterprises. Producer companies come under democratic enterprises. The major reason behind forming producer companies was the urge of cooperatives to serve the rural producers by forming a new model of companies which are free from officialisation and politicalisation. Although the producer companies follow the cooperative principles, it is not legally a cooperative enterprise and is governed by Part IX A, Companies Act, 1956. The producer companies are totally autonomous and independent form of democratic enterprise to solve the problems of rural producers.

P.H Roman, L. Priscilla and Sudheer Rajpoot (2014) says that producer companies are a hybrid between co-operative societies and private limited companies and it has a combination of co-operative principles and goodness of corporate companies. The producer company enhances the bargaining power of the marginal farmers and rural artisans through which they can attain a hike in their income level. Producer companies can act as a remedy for the problems faced by the co-operatives such as political interferences, corruption, elite capture, less efficiency etc.

## **2.5 Reviews on Coconut and Coconut Products**

E. C Mwachiro and R.V Gakure (2011) in their study focused on the coconut industry and hindering factors affecting the industry and community of Kilfi district of Kenya. Although coconut is considered as tree of life and many products could be accrued out of it, the indigenous community of Kilfi district could not make much benefit out of it due to low prices of coconut product, unclear legal framework, lack of proper markets, poor farming methods which results in low productivity and lack of credit support from government and other financial institutions. In addition to these, the government policy which made coconut tree as protected crop also became a great hindrance. The study suggested that there must be proper pricing policies and proper market system.

According to Mini (2012) Neera is a natural drink that is available in the world today which is abundant in vitamins, minerals, nutrients that have medicinal value. The major value added products from Neera include honey, cake, soft drinks, jam and sweets. She opined that Neera production will open up new job opportunities and give additional income to farmers.



Jayasree A (2013) in her article published in Indian Coconut Journal analyses that in India, 15.60% of total land is under coconut cultivation and 25.63% total agricultural production accounts to coconut production. But the farmers are suffering from price fluctuations and at times they are not getting the expected price for their produce. The remedy for this problem is the non-traditional value added products from coconut. The demand for value added products from coconut has increased immensely and so the scope of setting up processing units of coconut products has also increased.

Muralidharan and Deepthi (2013) stated that Neera is a potential product with many health benefiting properties. They pointed that the production of Neera and its value added products will give an additional income to both farmers and Neera tappers. They suggested that for coconut farmers who are facing the threat of price fall of coconut, the diversification to other value added products from coconut is the only solution. They argued that Neera should make free from the clutches of Abkari Act. They also pointed that, the cost factor which was once the deciding factor for purchase has now replaced by aspiration, health and quality. They advocated promoting Neera has a wide scope in the market.

Joby (2014) stated that though Neera is a delicious drink and it has many limitations such as production expense, branding, price, labour availability, consumer's purchasing power, fund raising of company, growth, competitiveness etc. He suggested that the new ventures Coconut Producer's Society (CPS), Federation of CPS and Coconut Producer's Company (CPC) is in need of more advice and expertise.

According to Gopalan (2014) the introduction of Neera was a great achievement in Andhra Pradesh in improving the standard of living of tappers. Neera is marketed under different names in various states such as Tamil Nadu, Karnataka, Orissa, Maharashtra and Gujarat. It says that even if 1% of the total 18 crores of coconut palms in the country are used for Neera production, it can give an income of Rs.54000 crores/ annum. He reminded that Neera offers a steady and profitable income to farmers and labours engaged with it and a health drink to consumers that is free from chemicals.



Sundharam (2015) said that among the 173 Coconut Producers' Federations (CPF) under Coconut Development Board, 156 CPFs have given license for Neera production. It is a 3 tier system consisting societies, federations and Producer Company. The aim of establishing this producer company is to market Neera and other value added products of coconut. He suggested that necessary Neera technicians to be trained for tapping Neera and good varieties of coconut seedlings suited for Neera production should be made available to farmers.

Dipak Kr. Ghosh and Arpita Ghosh C. Manojkumar and K. Samuddeen (n.d) states that Coconut oil is more beneficial to human body as a dietary fat than the natural or hydrogenated form of unsaturated vegetable oil. Coronary heart disease (sym: ischemic heart disease) has been defined as impairment of heart function due to inadequate blood flow to the heart compared to its needs, caused by obstructive changes in the coronary circulation to the heart. Coconut fats are easily digestible and not cerenlate in the blood stream and not stored. Coconut oil & palm oil are called lauric oils which make them unique from other vegetable oils. On hydrolysis coconut oil yields 85% fatty acids and 15% glycerol. The limitation in the use of coconut oil is that it contains very low amount of Essential Fatty Acids (EFA). The effects of dietary Fatty acid on human health have revealed beneficial results from the use of coconut oil. The incidence of coronary heart disease could be better linked with the consumption of cholesterol rich food of animal origin and the sedentary habits associated with a tension ridden mechanical society. A fear complex has been created in the mind of public about the consumption of coconut oil. This is due to the coconut oil with saturated fat without knowing everything about saturated fat. The saturated fat in coconut oil is of short chain and medium chain fatty acid.

Gopala Krishna A.G., Gaurav Raj, Ajit Singh Bhatnagar, Prasanth Kumar P.K. and Preeti Chandrashekar (n.d) revealed that Coconut oil is consumed in tropical countries for thousands of years. The coconut oil consumption show that the population is generally in good health. Coconut oil has a long shelf life and is used in baking industries, processed foods, infant formulas, pharmaceuticals, cosmetics and as hair oil. The oil contains 92% of saturates consisting of medium chain fatty acids in the form of triglycerides, and about 8% of unsaturated consisting of oleic and linoleum acids as triglycerides. The oil has a small amount of unsaponifiable matter (< 0.5%), is colourless and has a odour typical of the coconuts. The oil has small amounts of



tocopherols, tocotrienols and phytosterols. The oil is known to have antiviral and antibacterial effects and excellent healing properties. It gets easily absorbed in the body and is a nature mimic of the human breast milk fat and hence used in infant formulae. With all these good quality attributes, the side effects of the oil has also been reported especially in cardiovascular diseases due to the presence of less of unsaturated fatty acids in the triglycerides of the oil. It is hypothesized that due to lower amount of PUFA, there is a possibility of atherogenicity development during long term usage of the oil. Coconut oil is antiviral, antifungal (kills yeast too) and antibacterial. It has a anti-cancer effect on coconut oil.

B. M. Hegde (n.d) states that Coconut oil is a fat and has some saturated fat in it. Majority of the saturated fat in the coconut oil is medium chain and short chain fatty acids (good for humans) and only a small part is long chain. One would do well to avoid deep fried foods as they convert any oil, burning at 160 degree centigrade, to incorporate free oxygen radicals into the fat to convert the fat into hydroxyl-fat that is dangerous to the blood vessels. Coconut oil which is fresh is one of the best foods that mankind could consume. Coconut oil is known to protect human beings against certain cancers also. Coconut oil plays a vital role in discouraging the rogue cell from growing further. Most rogue cells die a natural death in time.

P Sabitha and D M Vasudevan (n.d) reveals that the consumption of coconut oil, as a part of routine diet, may not contribute to the risk for CAD, directly by affecting the lipid profile or indirectly by aggravating oxidative stress. It may not be the type of cooking oil, rather its quantity that may be contributing to the risk of Coronary Artery Disease (CAD).

D.M. Vasudevan, Path (n.d) says that a fear complex has been created among the general public that consumption of coconut oil results in elevated cholesterol levels. This myth was primarily due to equating coconut oil with saturated fat without knowing that saturated fat in coconut oil are of the short chain and medium chain fatty acids. But the fats that cause heart disease are saturated fats with long chain fatty acids. Coconut oil consumption has beneficial effects compared to other dietary fats. Coconut oil consumers have undesirable lipid profile pattern or increased risk for CAD compared to sunflower oil consumers.



K. Muraleedharan and Jayashree. A (n.d) in their article on value addition of coconut, categorise coconut vinegar as a value added product from the coconut water. It can be produced by adding vinegar generators. The processing of coconut vinegar is simple and they are fortification, fermentation, oxidation and acidification. The natural vinegar is enjoying more export market than the synthetic vinegar. Enhancing the value added products from coconut other than copra and coconut oil can bring prosperity to the coconut industry.

## **2.6 Conclusion**

The reviews of articles on value addition, value chain, Producer Company and coconut gave more knowledge about the theory and practice on these topics. Articles on value addition and value chain gave the information about its concept and theoretical frame work. The evolution and the purpose of Producer Company were understood from the articles related to producer companies. The information about coconut production, coconut oil, Neera and vinegar highlighted the importance of the innovative products. Thus the review has helped the researchers to understand the concepts and methodology that could be used for further research. The researchers also found very limited research works in the study area and in the selected coconut products.



## **CHAPTER 3**

### **THEORETICAL FRAMEWORK**

#### **3.1 Value Chain**

Value chain is a clutch of activities which makes a product transform from its original initial stage to a final stage at which it can be consumed. In a value chain, as the chain progresses, the value of the product accrues at each stage. Therefore, value chain generates some additional value to the product as the chain progresses.

In a narrow sense, a value chain includes various steps of activities which adds or creates some value at each activity. The total value delivered by the producer is the sum total of these values added at each level of activity. Adding value to a product can increase the competitive advantage of the producer. The producers can then charge premium prices to their products and can build a brand image in the market.

The concept of value chain was first introduced by Michael Porter in the year 1985 in his seminal book titled 'Competitive Advantage'. He views value chain as a combination of Primary and Secondary activities. The Primary activities include inbound logistics, operations, outbound logistics, marketing and sales and services. Inbound logistics means the movement of goods to the processor or movement of raw materials for processing. Operations mean the processing or the core value addition activity. Outbound logistics means the movement of finished goods for marketing and sales. The Secondary activities include the supporting activities for primary activities such as procurement, human resources and management, technological development and infrastructure.

#### **3.2 Approaches to value chain**

There are three major approaches to value chain:

- ❖ Filière Approach
- ❖ Porter's Approach
- ❖ Global Approach



### ***Filière Approach***

The term 'filière' means thread or chain. The filière approach was initially used in the agricultural sector in the developing countries under the French colonial system. The approach mainly studied the way in which the local production was linked into the processing, trade, export and financial industries. This approach maps the transformation of goods from its initial stage to the final stage of consumption and the various actors included in the value chain. There are two stands for filière approach. The economic and financial evaluation of this approach shows the income generation and distribution over the commodity chain. The strategy-focused analysis of the approach analyses the inter relationships of objectives, constraints and results of each category of actors involved in the chain.

### ***Porter's Approach***

The Porter's approach is clearly depicted in the book 'Competitive Advantage' by Michael Porter. This approach focuses on the competitive strategies that a company should take to place itself in the market by providing products with same or more value that the competitors provide to the customers, at a lower cost of production. Therefore it can be said that this approach has an application of business principles. He maintains that the concept of value chain does not merely mean the physical transformation of goods, rather it includes the inbound and outbound logistics, processing activities, marketing, sales and after sales and support services such as human resource management and activities related to infrastructure and technological development and so the value chain analysis aims at supporting systems and strategies followed by a firm.

### ***Global Approach***

The Global approach of value chain links the value chain with the concept of globalisation and global distribution pattern. This approach uses the framework of value chain to analyse the way in which firms and countries are integrated globally and assesses the determinants of global income distribution. The value chain analysis is the most suitable way to analyse and understand the distribution of earnings because the value chain depicts the actors involved at each stage and the cost incurred and income generated at each stage. Since the value chain shows the different actors involved in a chain, it can show the linkages between different regions and countries which is another phase of globalisation.



### **3.3 Difference between Value Chain Management and Supply Chain Management**

Although the terms Value Chain Management (VCM) and Supply Chain Management (SCM) refer the flow of goods in a chain, there are some differences between both the terms. Value Chain Management is more associated with adding value to the product from the initial point of the chain to the final point of the chain whereas, the Supply Chain Management relates more to the supply side of the flow of goods.

Value Chain primarily focuses on the benefits that will be accrued to a customer while generating a value to the product, resulting in creating demand for the product and thus increasing the income of the actors involved in the chain. Value chain concentrates more on product innovations and marketing and is structured with reference to the consumer preferences.

Supply Chain Management emerged during 1980s as an innovative integration of flow of goods from suppliers to ultimate consumers. This includes the flow of raw materials, flow of semi-finished goods and flow of finished goods. All the activities that relates to this flow such as forecasting, planning, processing, storage and marketing completes the supply chain. Supply chain focuses on reducing the costs over the chain and attaining efficiency in the operations.

### **3.4 Tools for Value Chain Analysis**

According to the book M4P, Making Value Chains Work Better for Poor: A Tool Book for Practitioners of Value Chain Analysis (3<sup>rd</sup> Version) published in the year 2008, the followings matters should be considered while analysing the value chain.

- ❖ **Prioritising value chains for analysis:** Before analysing the value chain, one should prioritise the list of value added commodities or services or sectors. This will help to filter out the most relevant value chains for the analysis.
- ❖ **Mapping the value chain:** After the primary stage of selection of value chain, the next step is to map it. This is the important step which helps in analysis of the value chain. Mapping the value chain is done using diagrams and pictures so as to remember and analyse easily. Along with analysing the different actors, processes and values in each level, a value chain also helps to analyse various constraints and the possible solutions at each level.



### **3.5 Steps Involved in Mapping the Value Chain**

Following are the major steps involved in mapping the value chain:

#### **3.5.1 Mapping the Core Process in the Value Chain**

Mapping the core process simply means to map the major processes in the value chain which includes processes from input supply through processing and then ending at final consumption. As an initial step the entire activities in the value chain can be categorised into different heads. For example, the core processes included in the value chain of an agricultural commodity may be input supply, production, procurement, processing, marketing, consumption, etc. The core processes may change according to the industry to which the value chain belongs to.

#### **3.5.2 Identifying and Mapping the Main Actors Involved**

Once the core processes involved are mapped, it is easy to find out and map the actors who are performing those core processes. For example, the process of production in the value chain of an agricultural commodity has farmer as the major actor involved. Likewise, each and every activity will be performed by some persons or institutions that are called as actors. This map will help to analyse the specific activity undertaken by each actors in the chain. If the researcher feels that it is necessary to divide the core processes into specific activities, the value chain map will become more specific. But he must be sure that those activities are feasible for division.

#### **3.5.3 Mapping Flows of Products**

After mapping the core processes, actors involved and their specific activities, the next is to map the flow of products through the value chain. It involves the products in each stage of the activities and its transformation from inputs to raw materials, then to work in progress inventory and at last to the finished good. Mapping the flow of products will give a clear idea of what all products are handled in what all forms at different stages of the value chain and the transformations occurring.

#### **3.5.4 Mapping Knowledge and Flows of Information**

Mapping the flow of knowledge and information in value chain is a difficult process compared to other steps in mapping, because those are of intangible property. Besides this, the flow of information may not be of one direction. It may at times flow to both directions. For example, a farmer may describe to the trader about the quality of the product and the trader may explain to the farmer about the quality



specifications required to carry out a specific activity. Therefore, mapping the information means mapping the flow of information between the actors involved in the value chain.

### ***3.5.5 Mapping the Volume of Products, Numbers of Actors and Jobs***

Volume of products, number of actors and jobs involved in each step in the value chain are quantifiable variables. Volume of products is greatly related to flow of products. The quantity and type of products flowing at every stage of the value chain is mapped in this step. This step also depicts the employment opportunities in different stages of value chain since the number of jobs and actors involved in each stage are analysed. Number of actors involved and the jobs are closely related to each other.

### ***3.5.6 Mapping the Geographical Flow of Goods***

In this step the geographical flow of goods is mapped, starting from the origin to the final consumers through the processors, middlemen, wholesalers, retailers, etc. This will help the researcher to analyse where the different stages in the value chain are physically located. It will also show the regional differences through which the product flows. An idea about the dimension of spread of the product can also be analysed using the map of geographical flow of goods.

### ***3.5.7 Mapping the Value at Different Levels of Value Chain***

Mapping the value at different levels is the core part of value chain mapping. This is the step where one could realise the value added to the product at each stage. The change of value from the origin to the consumption can be depicted in this step. The monetary flow can be analysed only if this step is undergone in which the value added at each stage and the overview of earnings is made known. It should be noted that only little information about cost, margin and profit will be available from this step because only the value added or the price of the product at each stage is identified in this step.

### ***3.5.8 Mapping Relationships and Linkages between Value Chain Actors***

This step is closely related with Step 2, which is mapping the actors involved in the value chain. Mapping merely the actors involved in the chain does not show the relationship between the actors. Hence this step is necessary to know the linkages and the type of linkages between those actors. Relationship can exist at different processes



(ex: farmer to trader) or in the same process step (ex: farmer to farmer) of the chain.

The relationship can be broadly classified into three categories:

- ❖ **Spot market relations:** In this type of relation the linkage is evolved 'on the spot' that means only at the time of transaction and will not exist for a long period. This can also be called as arm's length relationship. The relationship between the farmer and trader at the time of selling the product is an example.
- ❖ **Persistent network relations:** This type of relation exists for a long period between the actors and need high degree of trust and may sometimes have interdependence too. The actors can enter into a contract or agreement in this type of relationship but is not compulsory.
- ❖ **Horizontal relationships:** The relationship between the actors at the same level is known as horizontal integration. The work done or the job undertaken by the actors involved in this relationship is similar.

### ***3.5.9 Mapping Services that Feed into the Value Chain***

This step will give the information about the interventions outside the value chain at each step. This map addresses the question of what service is fed into each stage in the value chain. The extension services and the training offered to the farmers at the stage of production is an example outside intervention.

### ***3.5.10 Mapping Constraints and Potential Solutions***

Constraints may arise at different stages of the value chain. Mapping the problems faced in each stage of the value chain is important so as to forecast the problems and suitable solutions for it. Earlier identification of the constraints will help the actors involved in the chain to plan the alternatives.

### ***3.5.11 Making a Value Chain Map Matrix***

This is the final step where all the details from the other maps are summarised and tabulated. This step will ease the analysis of the value chain. This matrix will help the researcher to select in which area of the value chain he/she should concentrate.

## **3.6 Farmer Producer Company**

We are living in the volatile, uncertain, complex and ambiguous (VUCA) world. We are also witnessing structural and legal transformations in the forms of business organisations. Hitherto, we were classifying the business as primary, secondary and



tertiary sectors. Based on the area of operation we also classified businesses as rural business and urban business. However, the changing scenario in the business world narrows down the gaps. Likewise, the ownership pattern of business is also changing rapidly. Indian business laws permit sole proprietorship, partnership, private limited company, public limited company, government corporations, joint Hindu family business, Self-help Groups, and the cooperatives. The cooperatives have in the hands of government machinery for more than a century. Of late, like any other business enterprises, cooperatives also want to enjoy the freedom from the officialisation and politicalisation. Such transformations were crystallized in the form of self help groups, self reliant cooperatives and Producers' Companies which is the new cooperative form of organisation.

### **3.6.1 Background and Justification for Producer Company**

The Central Government has constituted a High Level Committee on November 1, 1999 to draft a legislative framework to enable the formation of cooperative business as companies and to convert existing cooperative business into companies under a regulatory framework similar to that of private limited companies, under the Chairmanship of Dr. Y.K Alagh, Economist and former Union Minister. The Committee submitted its Report to the Government (Department of Company Affairs) on March 15, 2000. On the basis of the recommendations of the Committee, the Producer Companies Bill was introduced in the Parliament and became law on 6th February, 2003 as Part IXA - Producer Companies in the Companies Act, 1956. Based on the cooperative principles of mutual assistance, it provides an alternative to the institutional form that is presently available to cooperative enterprises.

The foremost rationale put forward by the committee was that, 'Rural producers are at a potential disadvantage given their generally limited assets, resources, education and access to advanced technology. In the present competitive scenario, if cooperative enterprises are to continue to serve rural producers, they require an alternative to the institutional form presently available under law'. Further, the Producers Company is to offer a statutory and regulatory framework that creates the potential for producer-owned enterprises to compete with other enterprises on a competitive footing. And also to provide for the method of formation and registration of "Producer Companies" which, inter alia carries the principles of "mutual assistance"



and "Co-operation" within the more liberal regulatory framework afforded by the company law with suitable adaptation.

### **3.6.2 Salient Features of Producer Companies Bill**

The salient features of Producer Companies Bill are:

- ❖ To offer a statutory and regulatory framework that creates the potential for producer-owned enterprises to compete with other enterprises on a competitive footing. The Companies Act envisages and provides for various forms of Companies including private limited, public limited, trusteeship companies and nidhis, each with specific and appropriate provisions applicable to them.
- ❖ To provide for the formation and registration of producer companies, which include the mutual assistance and cooperative principles within the more liberal regulatory framework, afforded by the Company Law with suitable adaptations.
- ❖ To provide an opportunity to cooperative institutions to voluntarily transform themselves into the new form of producer companies.
- ❖ Under the Bill conversion of cooperatives to producer companies is purely voluntary.
- ❖ Member equity may not be publicly traded, but may only be transferred, with the approval of the Producer Company's Board of Directors. Producer companies would not be vulnerable to the takeover by multinationals or other companies.
- ❖ The conversion option by cooperative society to Producer Company can be exercised only if two-thirds of the members of the concerned society vote in favour of a resolution to that effect.
- ❖ The new form of company is designated as "Producer Company" to indicate that only certain categories of persons can participate in the ownership of such companies. The members of the Producer Company have necessarily to be "primary producers", that is persons engaged in an activity connected with, or relatable to, primary produce.
- ❖ The objects of a producer company have been defined to include, among other things, production, processing, manufacture and sale of primary produce as well as allied matters.



### **3.6.3 Objectives of Producer Company**

The objectives of the Producer Company shall relate to all or any of the following matters, namely:-<sup>1</sup>

- ❖ production, harvesting, procurement, grading, pooling, handling, marketing, selling, export of primary produce of the Members or import of goods or services for their benefit: provided that the Producer Company may carry on any of the activities specified in this clause either by itself or through other institution;
- ❖ processing including preserving, drying, distilling, brewing, vinting canning and packaging of produce of its members;
- ❖ manufacture, sale or supply of machinery, equipment or consumables mainly to its Members;
- ❖ providing education on the mutual assistance principles to its Members and others;
- ❖ rendering technical services, consultancy services, training, research and development and all other activities for the promotion of the interests of its Members;
- ❖ generation, transmission and distribution of power, revitalization of land and water resources, their use, conservation and communications relatable to primary produce;
- ❖ insurance of producers or their primary produce;
- ❖ promoting techniques of mutuality and mutual assistance;
- ❖ Welfare measures or facilities for the benefit of members as may be decided by the Board.
- ❖ any other activity, ancillary or incidental to any of the activities referred to in clauses (1) to (9) or other activities which may
- ❖ Promote the principles of mutuality and mutual assistance amongst the Members in any other manner; financing of procurement, processing, marketing or other activities specified in clauses (1) to (11) which include extending of credit facilities or any other financial services to its Members.

### **3.6.4 Cooperative Principles and Producer Companies**

Here an attempt has been made to compare the International Cooperative Alliance Statement on Cooperative Identity 1995 with special reference to its seven principles and the practices of Producers Companies. This effort is with an intention of



highlighting the fact that the producers Companies are no way different from cooperatives.

**Table 3.1: Cooperative Principles and Producer Companies**

Sl. No	Cooperative Principles	Relevant Practices of Producer Companies
1	<p><b>Voluntary and Open Membership:</b> Co-operatives are voluntary organizations, open to all persons able to use their services and willing to accept the responsibilities of membership, without gender, and social, racial, political or religious discrimination.</p>	<p>The membership shall be voluntary and available to all eligible persons who can participate or avail of the facilities or services of the producer company and are willing to accept the duties of the membership</p>
2	<p><b>Democratic Member Control:</b> Co-operatives are democratic organizations controlled by their members, who actively participate in setting their policies and making decisions. Men and women serving as elected representatives are accountable to the membership. In primary co-operatives members have equal voting rights (<i>one member, one vote</i>) and co-operatives at other levels are also organized in a democratic manner.</p>	<ul style="list-style-type: none"> <li>• Each member shall...have only a single vote irrespective of the shareholding.</li> <li>• The company shall be administered by a board consisting of persons elected or appointed (professionals) as directors and the board shall be accountable to the members</li> </ul>
3	<p><b>Member Economic Participation;</b> Members contribute equitably to, and democratically control, the capital of their co-operative. At least part of that capital is usually the common</p>	<ul style="list-style-type: none"> <li>• Save as provided in this part, there shall be limited return on share capital.</li> <li>• The surplus arising out of the operations of the producer company shall be distributed in an equitable manner by:</li> </ul>



	<p>property of the co-operative. Members usually receive <i>limited compensation, if any, on capital subscribed as a condition of membership</i>. Members allocate surpluses for any or all of the following purposes: developing their co-operative, possibly by setting up reserves, part of which at least would be indivisible; benefiting members <i>in proportion to their transactions with the co-operative</i>; and supporting other activities approved by the membership</p>	<ul style="list-style-type: none"> <li>❖ Provided for the development of business of the company</li> <li>❖ Providing for common facilities and</li> <li>❖ Distributing amongst the members as may be admissible in proportion to their respective participation in business</li> </ul>
4	<p><b><i>Autonomy and Independence</i></b>; Co-operatives are autonomous, self-help organizations controlled by their members. If they enter into agreements with other organizations, including governments, or raise capital from external sources, they do so on terms that ensure democratic control by their members and maintain their co-operative autonomy.</p>	<p><i>The main reason for the formation of Producer Company is to ensure autonomy and independence</i></p>
5	<p><b><i>Education, Training and Information</i></b>. Co-operatives provide education and training for their members, elected representatives, managers, and employees so they can contribute effectively to the development of their co-operatives. They inform the general public - particularly young people and opinion</p>	<p>Provision shall be made for the education of members, employees and others on principle of mutuality and techniques of mutual assistance</p>



	leaders - about the nature and benefits of co-operation.	
6	<b>Co-operation among Co-operatives ;</b> Co-operatives serve their members most effectively and strengthen the co-operative movement by working together through local, national, regional and international structures.	The company shall actively cooperate with other producer companies (and other organizations following similar principles) at local national or international level so as to best serve the interest of its members and the communities it purport to serve.
7	<b>Concern for Community;</b> Co-operatives work for the sustainable development of their communities through policies approved by their members.	Needs to be evolved

Source: <http://ica.coop/en/what-co-op/co-operative-identity-values-principles>

However there are some core differences between cooperatives and producers companies. The following table depicts those differences.



**Table 2: Major Differences between Cooperatives and Producers Companies**

Sl. No	Parameter	Cooperatives	Producer Companies
1	Governed by the Act and rules	Cooperative Societies Act and Rules	Producer Company Act 2002
2	Area of Operation	Restricted	Entire Union of India
3	Management	Conventional	Professional
4	Interface with government	Highly patronized to the extent of interference	Limited to statutory requirements
5	Extent of Autonomy	Limited in "real world scenario"	Fully autonomous, self ruled within provisions of Act
6	Privileges	Many to the extent of making dependent	Equivalent to Cooperatives with sense of competitiveness

Source: [http://www.asaindia.org/PDFs/MPC\\_II.pdf](http://www.asaindia.org/PDFs/MPC_II.pdf)

### 3.7 Conclusion

Drawing initial value chain maps and a map matrix provides a firm basis for undertaking the full value chain analysis. In particular, after the mapping exercise is complete, practitioners should be able to determine which value chain actors should be interviewed, what information should be gathered, what significant information gaps exist, and what the geographic locations for field work are. Once the mapping is complete the researcher can analyse the value chain of the product or service that s/he has selected. In the present study, Producer Company which has started playing vital role in the living condition of coconut farmers has been taken as a major actor. The above discussed theoretical framework is being used throughout the study report.



## CHAPTER IV

### ORGANISATIONAL PROFILE

#### 4.1 Kodungallur - At a Glance

Kodungallur (Cranganore) Municipality in Thrissur district of Kerala is situated between Arabian Sea and river of Periyar. Kodungallur Municipality was formed in the year 1978. It covers an area of 17.3sq.km and has a total population of 31,249 with a density of 1,806 per sq.km. It is a region of archaeological significance. The first dry port Transglobal is 8 km from the city. The legends of Kerala Vyasana Kunjikuttan Thampuran and Cheraman Perumal are from Kodungallur. India's first Muslim Mosque (Cheraman Masjid) and Kerala's the most famous Sree Kurumba Temple are the major religious attraction of this region. Traditional belief of Saint Thomas Christians of Kerala is that Thomas, the apostle of Christ landed at Kodungallur.

The Kodungallur Bhagavathi Temple (Kannaki Temple) is believed to have been constructed during the reign of Chera King, Cheran Chenguttuvan Thampuran. It is famous for its Bharani and Thalappoli festivals. Elango Adigal, younger brother of Chenguttavan, wrote his monumental work 'Shilappadikaram' residing at Kodungallur. He later embraced Bhuddism and spent the rest of his life in the Bhuddist monastery at Trikkanamthikam. According to Kerala historians, Kodungallur, Trikkanamthikam and the neighbouring areas were Bhuddist and Jain settlements during the Chera period.

It is believed that Saint Thomas, the Apostle of India had landed in Kodungallur in the middle of the 1<sup>st</sup> century and founded seven churches, or known as 'Ezharappallikal'. These churches were at Kodungallur, Niranam, Nilackal, Kokkamangalam, Kottakkavu, Palayoor and Thiruvithamcode arappally (a half church). According to one view of historians, a Cochin Jew colony in the Malabar Coast (later named Anjuvanam), probably established before 6<sup>th</sup> century BC and attracted the Apostle to this region.

The tradition holds that Cheraman Juma Masjid at Kodungallur, built in 629 AD by Malik bin Dinar, is the first mosque in India and the second oldest mosque in the



world to offer Jumu'ah prayers, constructed during the lifetime of Prophet Muhammed, the bodies of some of his original followers are said to be buried there. Unlike the mosques in the region that face westwards, this mosque faces east. The legend has it that a group of Muhammad's 'Sahaba' (companions) visited Kodungallur. An unknown Chera dynasty ruler had witnessed a miraculous happening-the sudden splitting of moon, the celebrated miracle of Muhammad. Soon after, the Chera ruler travelled to Makkah, where he embraced Islam, and accepted the name 'Thajuddin'. On his way back to India, he died at Salalah in Oman. On his death bed he has organised his Arab companions to spread Islam in his Kingdom and accordingly a group of Arabs led by Malik bin Dinar and Malik bin Habib arrived northern Chera kingdom and constructed the Cheraman Juma masjid at Kodungallur.

The ancient name of Kodungallur was "Muziris". As a remembrance a beach in Azhikode village in Kodungallur is named as "Muziris Beach". History says that Muziris was one of the ancient seaport and urban center in South- Western India. There was trade between Southern India and the nationalities such as the Phoenicians, the Egyptians, the Greeks, the Roman Empire, the Chinese and the Arab. The major commodities traded include spices, semi-precious stones, pearls, diamonds, sapphires, ivory, Chinese silk, tortoise shells, copper, lead, tin, textiles, wine, etc. The present study was carried out in such a historically important place.

#### **4.2 Profile of the Company**

Kodungallur Coconut Producers Company Ltd., (KCPC) being the seventh Coconut Producer Company under Coconut Development Board (CDB) was established on 24<sup>th</sup> October, 2013. It is classified as Indian Non-Government Company and is registered under Part IXA - Producer Companies in the Companies Act, 1956 at Registrar of Companies, Ernakulam. The head office is situated in Perinjanam village in the Kodungallur Municipality of Thrissur district. The area of operation of the company is extends to the entire Thrissur district.

The Kodungallur Coconut Producers Company Ltd (KCPC) was formed with the following 23 Federations under its fold:

- ❖ Harithasree Federation of Coconut Producers Societies
- ❖ Pavaratty Kera Karshaka Federation
- ❖ Oruma Nattika Grama Panchayath Federation of Coconut Producers Societies



- ❖ Thalikulam Federation of Coconut Producers Societies
- ❖ Valappad Federation of Coconut Producers Societies
- ❖ Vatanappilly Federation of Coconut Producers Societies
- ❖ Methala Nalikera Ulpadaka Federation
- ❖ Keramarutham Poyya Federation of Coconut Producers Societies
- ❖ Edathiruthy Federation of Coconut Producers Societies
- ❖ Edavilangu Nalikera Ulpadaka Federation
- ❖ Kairali Federation of Coconut Producers Societies
- ❖ Kaipamangalam Federation of Coconut Producers Society
- ❖ Mathilakam Federation of Coconut Producers Society
- ❖ Perinjanam Nalikera Ulpadaka Federation
- ❖ Sreenarayanapuram Federation of Coconut Producers Society
- ❖ Kuzhur Kera Federation of Coconut Producers Societies
- ❖ Vellangallur Nalikera Ulpadaka Federation
- ❖ Artha Kunnamkulam Federation of Coconut Producers Societies
- ❖ Mullurkkara Federation of Coconut Producers Societies
- ❖ Mullurkkara Mundathikkode Panchayath Federation of Coconut Producers Societies
- ❖ Ollur Federation of Coconut Producers Societies
- ❖ Paralam Nalikera Ulpadaka Federation
- ❖ Ollukkara Block Federation of Coconut Producers Society.

The vision of KCPC Ltd is to build a prosperous and sustainable coconut sector by carrying out various business activities such as production, procurement, processing, and marketing of coconut products. The company's main objective is to help the coconut farmers so as to get maximum advantage by increasing their production, and productivity. The company undertakes procuring, processing and marketing of farmer produce so that the farmers get a maximum price for their products.



### **4.2.1 Objectives of the Company**

The main objectives of the KCPC Ltd are:

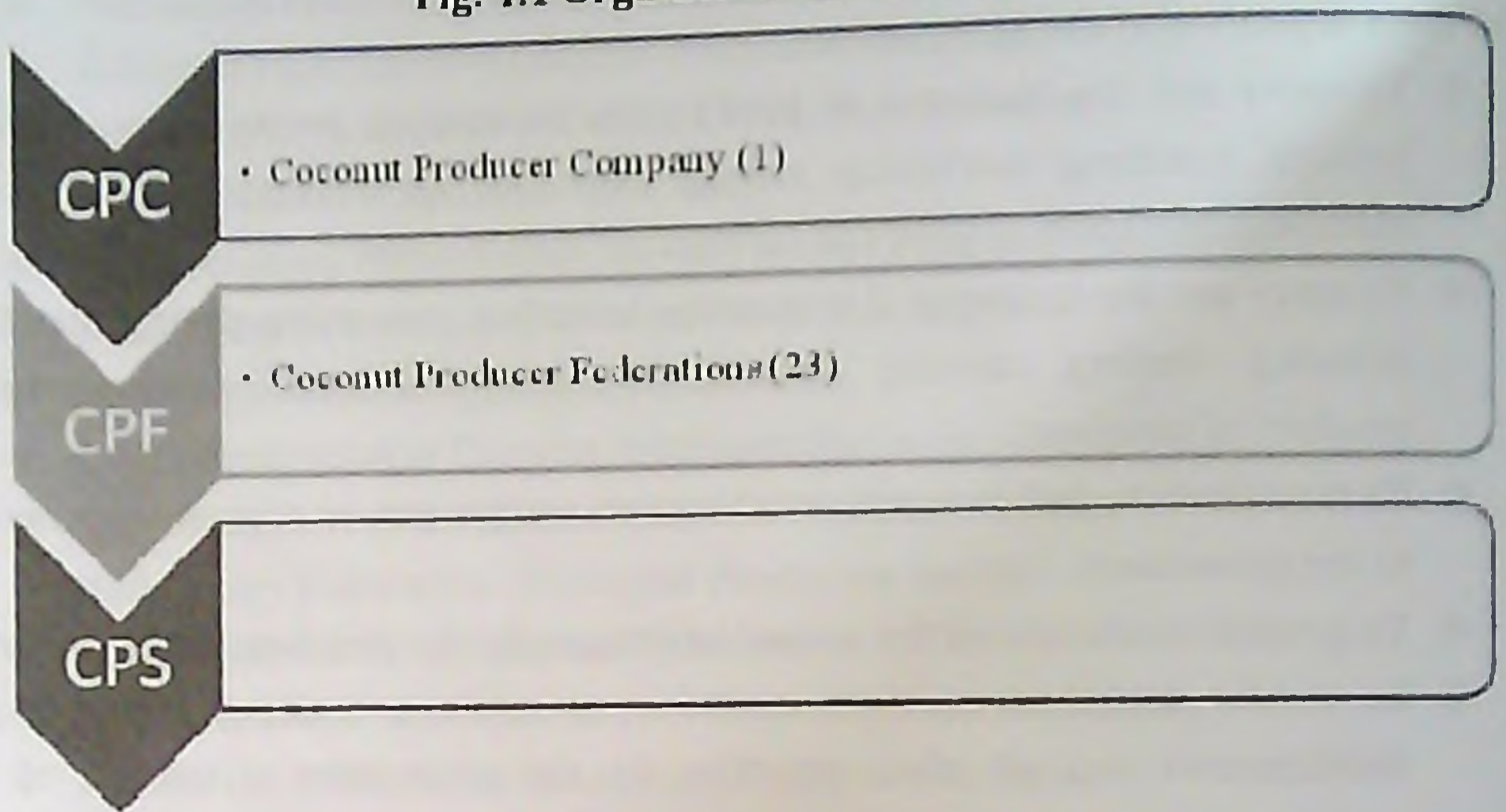
- ❖ To carry out the business of production, harvesting, procurement, grading, pooling, handling, marketing, selling, export of agricultural produce of the members or import of goods or services for their benefit.
- ❖ To carry out the business of processing including preserving, drying, distilling, brewing, venting, canning, packing, branding and brand development of produce of members.
- ❖ To manufacture, sell or supply machineries, equipments or consumables mainly to the consumers.
- ❖ To provide education on the mutual assistance for the members and to others.
- ❖ To render technical services, consultancy services, training, research and development and all other activities for the promotion of interest of the members.
- ❖ To generate, transmit and distribute power, revitalize, land and water resources, their use, conservation and communication relatable to primary produce.
- ❖ To provide insurance to producers on their primary produce.
- ❖ To provide techniques of mutuality and mutual assistance.
- ❖ To provide for welfare measure or facilities for the benefit of members as may decided by the board.
- ❖ To do the business of financing of procurement, processing, marketing, or other activities, which include extending of credit facilities or any other financial services to members.

### **4.2.2 Organisational Structure**

The organizational set up of KCPC is three-tier structure with Coconut Producer Company (CPC) at the apex or top level, Coconut Producers Federation (CPF) at the middle level and Coconut Producer Societies (CPS) at the bottom or grass root level.



Fig. 4.1 Organisational Structure



At least 8 CPSs registered under Coconut Development Board (CDB) working under the same block Panchayat is needed to form a CPF. Each CPS under CPF should have at least 40000 yielding coconut palms. A Federation can have a maximum of 20 - 25 CPSs as its members and have a maximum of 1 lakh yielding coconut palms. The CPFs are affiliated to CPC.

#### 4.2.3 Sources of Fund

The KCPC Ltd. avail funds mainly through issue of shares. It also raises funds in the form of borrowings. The KCPC Ltd. has an authorized share capital of Rs.5 crores (50000 shares of Rs. 1000 per share). The maximum number of shares that a member can hold is 10. Presently the company has a paid up capital of Rs. 8330000/-. The company has borrowing in the form of loan which amounts to Rs.427000 out of which Rs. 200000 is subsidy. The outstanding loan of the company thus amounts to Rs. 227000/-. No reserves and surplus has been generated by the company. The details of paid up capital by various Federations are given in the following table.



Table.4.1 Details of Paid up Share Capital

Sl. No.	Name of the Federation	Amount(Rs.)
1	Methala Nalikera Ulpadaka Federation	444000
2	Perinjanam Nalikera Ulpadaka Federation	1665000
3	Kaipamangalam Federation of Coconut Producers Society	956000
4	Edathiruthy Federation of Coconut Producers Societies	1056000
5	Kairali Federation of Coconut Producers Societies, Eriyad	1088000
6	Vatanappilly Federation of Coconut Producers Societies	567000
7	Sreenarayanapuram Federation of Coconut Producers Society	785000
8	Edavilangu Nalikera Ulpadaka Federation	1016000
9	Valappad Federation of Coconut Producers Societies	78000
10	Mathilakam Federation of Coconut Producers Society	172000
11	Vellangallur Nalikera Ulpadaka Federation	483000
12	Poyya Federation of Coconut Producers Societies	20000
<b>Total</b>		<b>8330000</b>

Source: Primary data

#### 4.2.4 Fixed Assets

Assets which are acquired for relatively longer periods for carrying on the business are called fixed assets. The company has the following fixed assets.

Table 4.2 Details of Fixed Assets as on April 30, 2015

Sl. No.	Asset	Amount (Rs)
1	Land and building	500000
2	Machinery	2500000
3	Furniture and fixtures	200000
4	Office equipments	40000
5	Electrical installation	50000
6	Miscellaneous	10000
<b>Total</b>		<b>3300000</b>

Source: Primary data



The Company is situated at Perinjanam village 12 km north of Kodungallur city. The machineries include machines for copra drying and Neera processing.

#### 4.2.5 Business Activities

The major business activity undertaken by the company is the purchase of raw materials for production and sales of finished products. Purchases include the total amount spent for procurement of finished goods meant for resale or raw materials meant for further processing and sale. Sales which is the major source of revenue includes all proceeds of goods sold or receipts for services rendered by the firm. The company purchases raw coconut, tender coconut, copra, coir pith, Neera, sprout, etc from farmers. It also purchases articles necessary for processing and marketing of its products such as bottles, packing covers, preservatives etc. The company processes and markets products such as coconut oil, chips, pickle, Neera, coconut water, vinegar, cake, manure, sprout, jaggery, honey, lemonade and wine. The details of purchase and sales for the last 6 months (November 2014 to April 2015) are shown in the table below.

**Table 4.3 Details of Purchase and Sales for the period -  
November 2014 to April 2015**

Sl. No.	Month	Purchase (Rs.)	Sales (Rs.)
1	November 2014	182708	557397
2	December 2014	483005	689592
3	January 2015	455779	611656
4	February 2015	546425	510147
5	March 2015	650342	626712
6	April 2015	549756	651279
<b>Total</b>		<b>2868015</b>	<b>3646783</b>

Source: Primary data

#### 4.2.6 Management of the Company

The management of the company is vested with the Board of Directors (BOD). The BOD consists of nine members. The members in the board are elected from the member Federations who have satisfied the following criteria:

- ❖ Should have played an important role in the formation and functioning of CPS and CPF.



- ❖ Should be an elected nominee of the CPS.
- ❖ Should have attended the training programmes organized for CPS/Federation members in a meaningful manner.
- ❖ Should have played a leading role in copra or tender coconut procurement or in organizing harvesting of coconut palm produce.
- ❖ Regular and meaningful participation in CPS, Federation and higher level meetings of farmers and officials.
- ❖ Should be able to participate in the affairs of the company with full focus.
- ❖ Should have a PAN card, an identity card, and willingness to sign various affidavits and the documents for the company functioning.

The term of the Board is 5 years from the date of assumption of office. The board shall elect the chairman of the company. The chairman should preside over the board meetings. In the absence of the chairman, the directors present can elect a chairman to preside over the meeting. The board meetings shall be conducted once in three months with seven days notice. The quorum required for the board meeting is one third of the total strength of the board members. The decisions of the board are taken by majority votes of the board members and in case of tie the chairman shall have a casting vote. If a board member is not present for three consecutive board meetings his membership will be ceased.

### **4.3 Profile of the Selected Federations**

The researchers took the following Federations for the purposes of the study:

- ❖ Edathiruthi Federation of Coconut Producers Societies was registered on 1<sup>st</sup> January 2013 with Coconut Development Board (CDB) under the The Travancore-Cochin Literary, Scientific and Charitable Societies Registration Act, 1955. It is situated in the Edathiruthi Panchayath of Mathilakam Block in Thrissur district. Its area of operation is extends to the Mathilakam Block Panchayat. The Federation was formed by the union of 16 Coconut Producers Societies working in its area of operation i.e., Mathilakam Block Panchayat. The CPS has to pay an amount of Rs. 2000/ for taking membership in the Federation.
- ❖ Perinjanam Nalikera Ulpadaka Federation was registered on 19<sup>th</sup> November 2012 with Coconut Development Board (CDB). It is situated in the Perinjanam Panchayat of Mathilakam Block in Thrissur district. Its area of operation is extends to the Perinjanam Panchayat in Mathilakam Block. The Federation was



formed by the union of 12 Coconut Producers Societies working in its area of operation.

- ❖ The Ollur Federation of Coconut Producer Societies is situated at Kuttanellur in Thrissur district. The Federation was registered on 29.10.2014 with the area of operation as stipulated for Ollur and Koorkenchery KrishiBhavans (Agriculture Offices).

#### **4.3.1 Objectives of the Federations**

- ❖ To ensure integrated socio-economic advancement of the member Coconut Producers' Societies (CPSs).
- ❖ To undertake Research & Development activities in coconut based farming and allied activities including participating in exhibitions and study tours in collaboration with the related Research & Development Organizations.
- ❖ To disseminate latest technologies in production, procurement, processing and marketing of coconut.
- ❖ To help to adopt the package of practices recommended by the State Department of Agriculture and research organizations like State Agricultural University and Central Plantation Crops Research Institute (CPCRI).
- ❖ To make available good quality seedling to CPSs. To procure and make available agricultural inputs/ implements to the members at reasonable rates.
- ❖ To implement activities aimed at improving quality of nuts and promoting primary level processing.
- ❖ To undertake pooling and collective marketing of the produce of the CPSs.
- ❖ To undertake measures for coconut based product diversification and value addition.
- ❖ To form more CPSs in the operational area of the Federation if found necessary.
- ❖ To procure coconut for processing into copra, in order to ensure fair price for the produce and to avail the benefit of Minimum Support Price (MSP) to the member CPSs.
- ❖ To identify good quality mother palms from among CPSs.
- ❖ To train Friends of Coconut Trees (FOCTs) and ensuring their service for CPSs.
- ❖ To undertake up to date coconut cultivation techniques for groups of CPSs.
- ❖ To encourage suitable intercropping in coconut holdings.
- ❖ To periodically analyse the production and productivity of the CPSs and to initiate measures for increasing the same.



- ❖ To help members for obtaining credit facilities at low or even zero rate of interest through Central or State government schemes like the Kissan Credit Card (KCC).
- ❖ To work in association with government, local self government institutions, research institutes, universities, educational institutions and NGOs.
- ❖ To collect working funds for meeting the objectives of the Federation through admission fees, subscriptions, subsidies and grants from governmental agencies and loans from various financial institutions.
- ❖ To work in association with other similar entities, subject to applicable rules for establishing Producer Companies.

#### **4.3.2 Membership**

CPSs registered with the Coconut Development Board within the area of operation of the Federation can be members subject to the following conditions:

- ❖ CPSs shall remit prescribed membership fee and annual subscriptions.
- ❖ They shall follow the rules and regulations of the Federation
- ❖ They shall not enter into any such activity against the objectives of the Federation.
- ❖ They shall be willing to deliver produce as coconut, tender coconut, de-husked coconut, copra, etc. to the Federation whenever the Federation decides to procure the same.

Those CPSs who wish to take membership shall apply in the prescribed application form along with an admission fee of Rs.1000/- and annual subscription of Rs.1000/- The annual subscription for each year is to be remitted in advance before April to the Federation.

The Managing Committee will have the right to issue a show cause notice to CPSs which fail to adhere to the bye-laws or act against the interests and policies of the Federation. If satisfactory reply is not furnished within 14 days or the reply having been furnished, the Managing Committee, after its consideration finds that the CPS has acted against the interests of the Federation, the CPS will be removed from the membership of the Federation. Such removal should be presented before the next general body for ratification.



### **4.3.3 General Body**

The general body of the Federation consists of two members from each CPS nominated from among the Managing Committee of the respective CPSs. CPSs have the right to alter or change the nominees at their discretion. Such alteration or change shall be preceded by a notice of 15 days. Each member has voting right. The General Body meets at least once in a year. The financial year of the Federation is from 1st April to 31st March. The yearly income and expenditure account, balance sheet and budget are presented for approval at the General Body. The quorum for the General Body is two-third of the total membership. Secretary issues notice to members along with agenda for the meeting at least seven days in advance. The general body directly elects President, Vice President, and Secretary, Joint Secretary, Treasurer and four Executive Committee members. If necessary, the election may be conducted through secret ballot.

The Secretary may convene an Extraordinary General Body on the written request of two third or more of the members. If the Secretary refuses to convene such meeting, members may request the President to convene an Extraordinary General Body. If the President also refuses to do so, the members shall have the power to convene an Extraordinary General Body.

The Secretary shall give a notice of 10 days for proposals of amendments to the byelaws of the Federation and the proposed amendment must be passed by the members present at the meeting called for the purpose, failing which the proposal shall lapse. The Balance Sheet and Income and Expenditure Account of the Federation shall be audited and a Report submitted by a person designated by the general body. It shall be the responsibility of the Executive Committee to implement all the programmes and policies approved by the general body. If any property belonging to the Federation is stolen, missing or has become irrecoverable, only the General Body shall take a final decision on the matter. The ultimate authority of the Federation, its organization and management shall rest with the General Body.

### **4.3.4 Management**

The management of the Federation is vested with the President, Vice President, Secretary, Joint Secretary and four Executive Committee Members who are elected at the General Body. An auditor shall be elected from the general body to audit the



Income and Expenditure Account and submit report. Executive Committee has the right to form Sub Committees if necessary. However, the control of the subcommittees rest with the Executive Committee. The quorum of the Executive Committee is 2/3 of its total strength. Where votes are equal for and against a resolution, the President may exercise a casting vote. The period of the Executive Committee is two years from the date of taking charge. Charge should be handed over to the new Executive Committee within seven days of election. The Executive Committee shall meet at least once in a month. The Executive Committee shall examine the quarterly income and expenditure statements, vouchers and receipts and shall pass the same if they are found to be in order. President, Secretary, and treasurer will be the signatories for the loans taken for the Federation with the approval of the Committee.

If vacancy arises in the Committee, Executive Committee has the right to co-opt members till the tenure of the committee expires. A Committee member who absents himself from 3 consecutive Committee meetings without genuine reasons shall be removed from the committee. However if the committee feels that there is genuine reason for his/her absence, Committee has the powers to allow the member to continue in the Committee. Executive Committee member should not have any dues to the Federation. In case of the resignation of the President, the powers of the President should be handed over to the Vice-President and the Executive Committee shall accept the resignation of the President. However, the resignation shall come into force only if the President has no liabilities towards the Federation. Vice-President shall hold charge until the next General Body. If, for any reason, the majority of the Executive Committee members resign, the Secretary shall immediately convene an Extraordinary General Body and initiate steps for the election of a new Committee.

#### **4.4 Profile of the Society**

The researchers selected the following Societies for the purposes of the study:

- ❖ Mahatma Nalikera Ulpadaka Sangam was registered with Coconut Development Board on 1<sup>st</sup> November 2012 under the Charitable Societies Act. The area of operation of the Society is limited to the Edathiruthi panchayat excluding the regions of west Edathiruthi. It was formed by associating around 70 farmers in the Edathiruthi Grama Panchayat. Each member farmer must have minimum 10 yielding coconut palms.



- ❖ Kuttanellur Nalikera Vikasana Sangham was registered with Coconut Development Board on 29<sup>th</sup> September 2014 with register number CDB/TCR/2012-13/208. The area of operation of the Society is limited to the area under the KrishiBhavan of Kuttanellur.
- ❖ Pulincode Nalikera Ulpadaka Sangam was registered with Coconut Development Board on 2<sup>nd</sup> June 2012 under the Charitable Societies Act. The area of operation of the Society is limited to the Pulincode area in Perinjanam Panchayat. It was formed by associating around 80 farmers in the Pulincode area.

The admission fee for membership in the society is Rs.100/ and annual subscription is Rs. 20/. Presently, the main business activities undertaken by the societies are the procurement of raw coconut from farmers and supply of seedlings to farmers. The procured nuts are supplied to the KCPC Ltd. The societies purchases the seedlings at the rate of Rs. 40/seedling and sells the same at the rate of Rs. 50/seedling.

#### **4.4.1 Objectives of the Society**

- ❖ The socio-economic uplift of the coconut farmers residing in the area of operations.
- ❖ To improve the cultural, health, sanitary and educational conditions of the members and their family members and also to undertake appropriate welfare measures for the members of the Society.
- ❖ To undertake research and development activities in the coconut based farming and allied activities including participating in exhibitions, foreign study packages in collaboration with the organization working in the relevant area.
- ❖ To disseminate latest technologies in production, protection, processing and marketing of coconut.
- ❖ To adopt the package of practices recommended by the State Department of Agriculture, State Agricultural University and Central Plantation Crops Research Institute.
- ❖ To improve the productivity of small growers and augment the income of the growers through processing and marketing and by acting as a link between the Coconut Development Board and the farmers in the Society.
- ❖ To undertake measures for reduction of cost of cultivation and improve the efficiency of input application.
- ❖ To make available quality planting material to the members of the Society.



- ❖ To procure and make available agricultural inputs/ implements to the members at reasonable rates.
- ❖ To implement activities aimed at improving quality of nuts and promoting primary level processing.
- ❖ To undertake pooling of production and collective marketing of the produce of the farmers.
- ❖ To undertake measures for coconut based product diversification and value addition.
- ❖ To maintain cordial relations with Coconut Development Board and other connected agencies.
- ❖ To mobilize funds through admission fees, subscription fees, credit and make assistance available under various schemes of the Coconut Development Board, State Government and other agencies to be members of the society.

#### **4.4.2 Membership**

The coconut growers residing within the area of operation of the Society having not less than 10 yielding coconut palms can take the membership if the following conditions are satisfied:

- ❖ Members should have completed 18 years of age and shall become eligible for entering into agreements.
- ❖ Members should remit prescribed admission fee and make timely payment of annual subscription fee.
- ❖ Shall follow the rules and regulations of the Society.
- ❖ Shall not enter into any such activity that is adverse to the objectives of the Society, as per the Bye-Law.
- ❖ Shall be willing to supply his produce to the Society in the event of arranging necessary marketing facilities by the Society.
- ❖ Only one member from a family is eligible to take the membership of the Society.
- ❖ Shall be willing to supply his coconuts in the form of tender coconut, dehusked coconut, copra, etc. as the Society demands.

The membership shall automatically cease to such members who fail to adhere to any of the above conditions. Any member, who has no liability to the Society, is eligible to withdraw from the membership at any point of time. Such members are not



eligible to get any refund of the fees paid to the Society. The farmers interested to take membership shall apply in the prescribed application form along with an admission fee of Rs.100/- and an annual subscription of Rs.20/-. The annual subscription fee shall be remitted in advance before April to the Society.

#### **4.4.3 General Body**

The ultimate authority for all matters relating to the administration of the Society is the General Body, which meets at least once in a year. Seven days' notice shall be given for every General Body meeting. General Body is held annually within three months of the completion of the financial year. The quorum of the General Body is one third of the total membership or 20 members whichever is less. In order to review the working of the Society and also to finalize future activities and programmes a separate General Body is held once in three months. General Body can also be convened in an emergency, or as a special case or on a written request of one third of the members for dealing matters of emergent nature. The General body can take action on all items which are included in this Bye-Law. The General Body, can elect from the members, a President and an Executive Committee. General body can remove the elected President or Executive Committee Members before their prescribed term of office, at a meeting specially held for that purpose, for deception, grave misconduct etc. if 2/3 majority passes a resolution to that effect. General Body is authorized to approve the annual Working Committee Report and the audited statements of accounts after scrutiny. The General Body is empowered to approve the budget with or without amendment. The General Body may direct the President or Executive Committee to take appropriate action for the protection of the interests of the Society and its members.

#### **4.4.4 Management**

The management of the Society vested with the President of the Society and the Executive Committee Members. The Executive Committee governs the Society as per the envisaged objectives and policies and rules and regulations modified from time to time. The quorum of the Executive Committee is four Executive Committee Members. The Committee meets at least once in a month or whenever need arises. The Executive Committee elects a Vice President from the elected Executive Committee Members. Every member shall have only one vote. All issues before the General Body shall be decided by a majority of vote. The President shall have a casting vote. A member, who



is absenting himself continuously for three meetings of the Executive Committee without the prior approval of the President, shall cease to be a member. The vacancy that arises in the Executive Committee can be filled in by co-opting members. The Society, which is recognized by the Coconut Development Board, shall abide by the directions of the Coconut Development Board.

#### **4.5 Conclusion**

The company was established for the upliftment of the coconut producers in Thrissur district. It is a three tier structure with producer federations and producer societies under the company. It mainly undertake the activities of procurement of coconut produce from farmers and undertake processing & marketing of various value added product from different parts of coconut palm. Since the company has been started very recently, the scope for financial analysis is very limited. However, with in a very short span of time, they proved their potential in increasing the farmers' income, creating an effective value chain for coconut. The next chapter deals with the coconut value chain, impact on farmers' income and consumers' satisfaction towards selected three coconut products.



# CHAPTER V

## VALUE CHAIN PERSPECTIVE OF COCONUT PRODUCTS

### 5.1 Introduction

Mapping of value chain is an important management tool for agribusiness management. Through this process, one can understand the holistic perspective of selected produce. This process could incorporate all aspects of business and its players, which will help the farmers, business firms and consumers to understand their role. Mapping of value chain is also considered to be the pro poor approach to ensure better price for the produces of small and marginal farmers. Coconut is one of the major agricultural produces of Kerala. The government of Kerala and India have taken many measures to solve the production, processing and marketing of coconut and coconut products. Unfortunately, many problems are not settled yet and coconut production is only subsistence farming operation. Invention of Producer Companies and promotion of such companies in the state of Kerala by the Coconut Development Board shows a positive signal in the farmers' life. Value added products of coconut are in the market through Producer Companies and it increases the income potential of farmers and also ensures good quality products at a fair price to the consumers. This chapter deals with three aspects namely, Mapping of value chain, consumer perception and impact on farmers income due to the establishment of Producer Company.

### 5.2 Value Chain Mapping of Coconut Process

The value chain mapping of Coconut Products, namely *Neera, Coconut Oil and Coconut Vinegar* gives a detailed picture of the core processes involved in the value chain, the various actors involved in each stage, flow of different products, jobs involved, services fed into the chain, flow of knowledge and information, geographical flow of product and so on. This will enable the reader to understand the various benefits and opportunities related to each stages of value addition process.



### 5.2.1 Mapping the Core Process

**Fig.5. 1 Core process involved in the value chain of Coconut Products**



Input supply means the system in which all the facilities for the cultivation of coconut are provided. It includes all the inputs that are essential for the proper cultivation of coconut. In this case, seedlings, pesticides, fertilisers, labour and irrigation are the major inputs fed at the stage of input supply. The farmers collect the seedlings from their own seed collections, Krishibhavans (Agriculture Office), private nurseries and the Kodungallur Coconut Producer Company. The fertilisers applied are cow dung and other organic matters which are collected from their own field and from the fellow farmers. The irrigation facility is from the wells and ponds. Labourers are hired from the local area itself.

Production is the major part of the value chain where the cultivation of the coconut being carried out. Coconut is a crop which doesn't need much fertiliser application. Fertiliser application is done usually once in a year. Coconuts fall from the tree when they are fully mature and are easily collected from the ground. However, coconut is to be plucked at an interval of 45 days.

- ❖ Neera tapping is done continuously for a period of six months. Neera is collected twice in a day. The yield of Neera from a palm varies from 1.5 to 2.5 litres per day depending upon the health condition of the palm. In the processing the collected Neera is filtered, chilled, centrifuged and pasteurized.
- ❖ Since the coconut oil prepared out of the dried kernel, the coconut is harvested when it is matured.
- ❖ Since the coconut vinegar is prepared out of the coconut water, nuts with more water content are to be harvested. Coconut water is a by-product of coconut. Coconuts are harvested when the nuts are about seven months old, just after they reach their full size but prior to the mesocarp drying. If the mesocarp starts to dry, then the water content will be reduced.

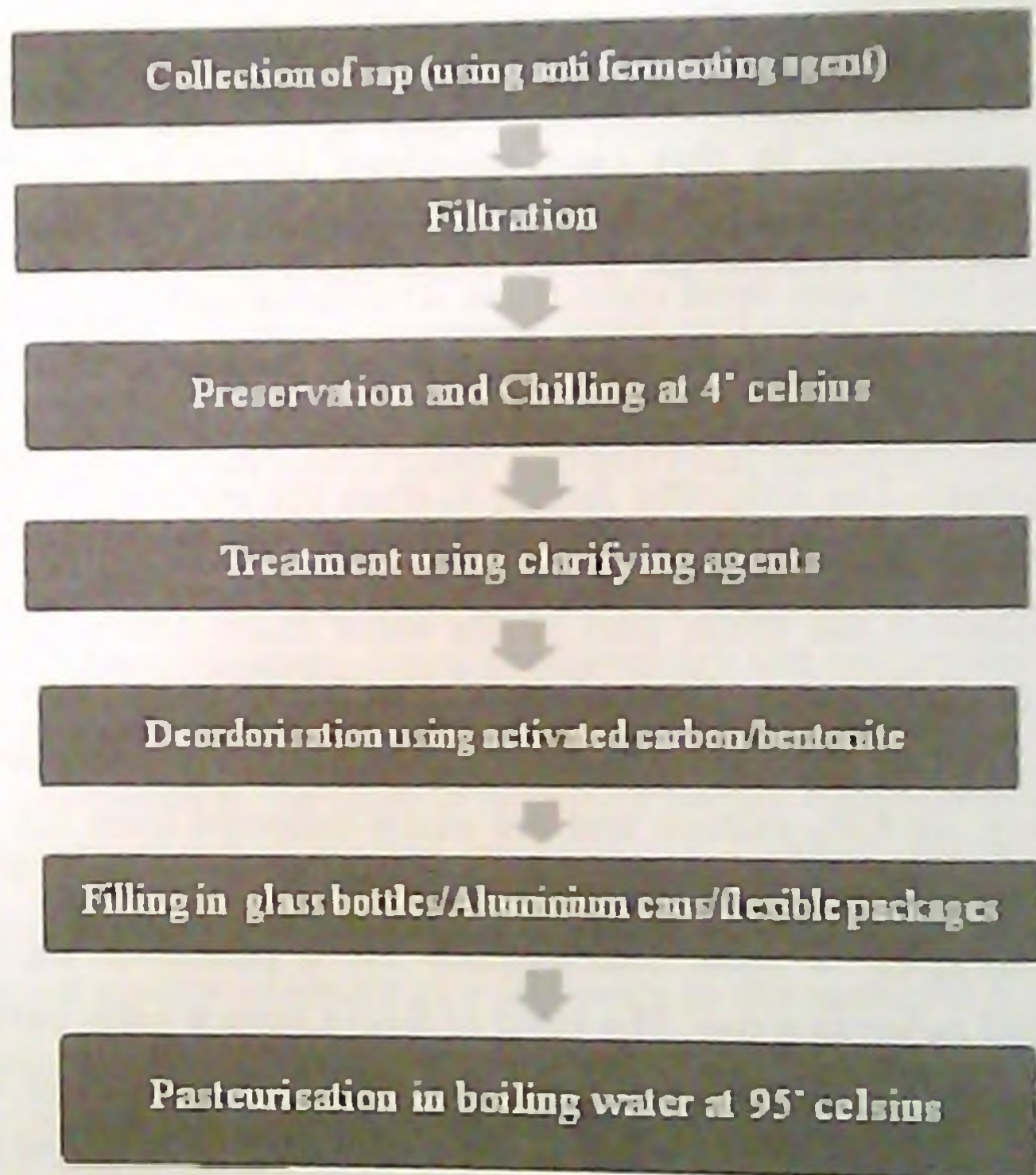
Processing is the main task carried out by the company.

- ❖ The collected Neera (anti-fermenting agent added) is filtered, chilled, centrifuged and pasteurised. Filtration helps to remove foreign particles;



centrifugation helps to separate water and other residues from Neera. Pasteurisation helps in the removal of bacterial presence. Addition of preservatives ensures the longer shelf life of Neera. The processed Neera is then packed in bottles. The packed Neera can be stored under refrigerated condition for a period of about 6 months.

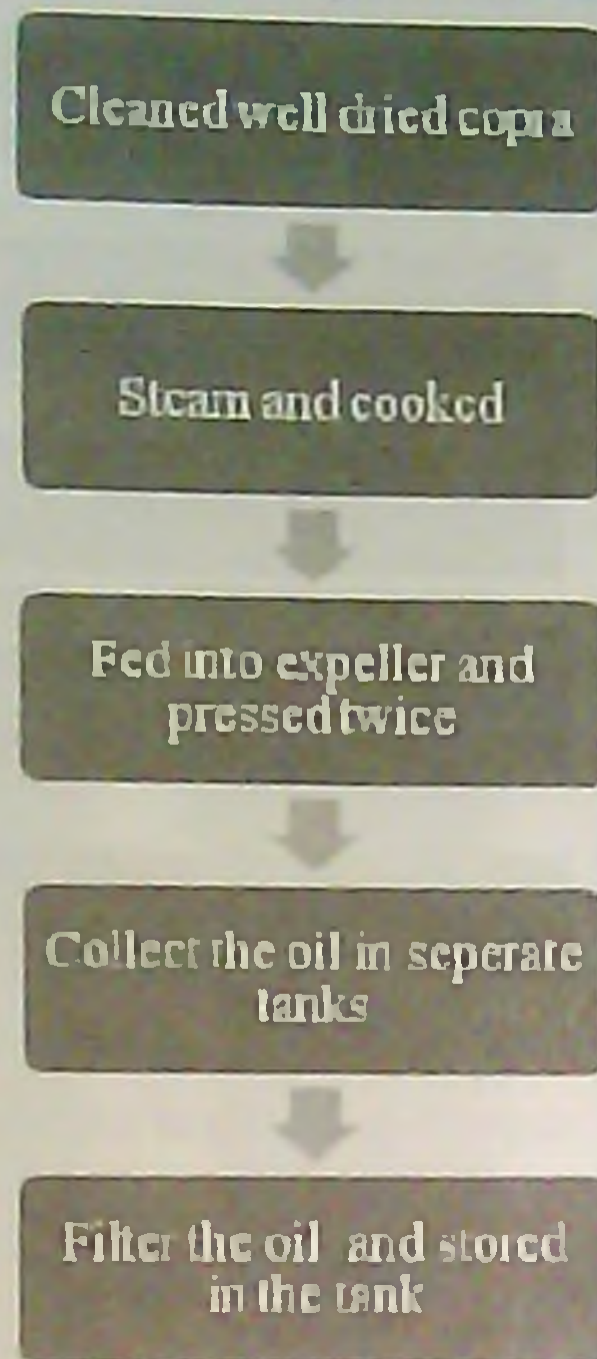
**Fig 5.2 Processing of Neera**



- **Processing of Coconut Oil:** This is the stage the coconut is converted into copra. There are five steps to convert copra into coconut oil. Well dried copra with a moisture content not exceeding 6 per cent is cleaned well from any foreign matter. It is then cut into small chips in a copra cutter. The chips are fed into steam jacketed kettles and cooked mildly at a temperature of 70°C for 30 minutes. After proper cooking, the cooked material is fed into the expeller continuously and pressed twice. The combined oil from the first and the second pressing is collected in a tank provided separately. This oil is filtered by means of a filter press and stored in tank.



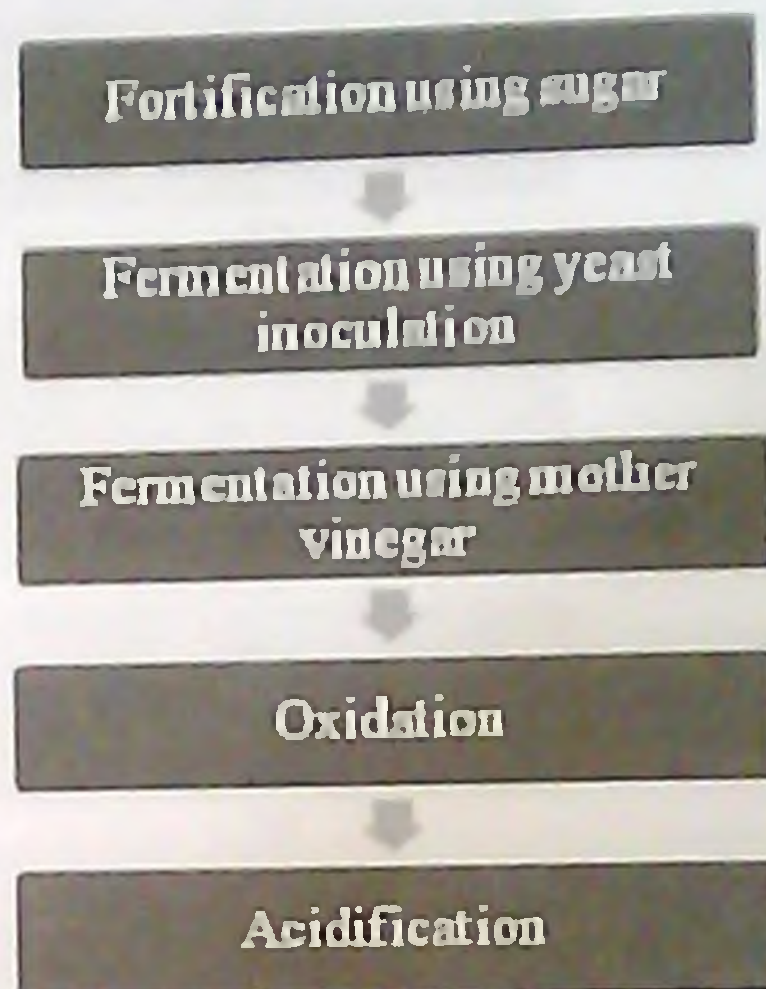
**Fig 5.3 Processing of Coconut Oil**



- **Processing of Coconut Vinegar:** This is the stage where the coconut water is converted into coconut vinegar. The water collected from the nut undergoes five steps to convert it into coconut vinegar. Initially, the water is fortified using sugar. After fortification, it is then fermented using yeast and then by the mother vinegar. After that, the oxidation process is undertaken. As the oxidation process is completed, the product is acidified. These five steps are can be depicted as a flow chart.



Fig. 5.4



Marketing of the products is done by the Kodungallur Coconut Producer Company Ltd. The products are sold through supermarkets and organic products outlets in Thrissur district.

- ❖ The company sells the **coconut oil** to wholesaler @ rate of Rs.172 per litre. The wholesaler sells to the retailers at the rate of Rs.177. The company also directly sells to the consumers at the rate of Rs.178 per 1 litre. There are no special promotional activities undertaken by the company for the product. The product is also taken by the producer societies and sold through their offices.
- ❖ The company sells the **Neera** to wholesalers (Gayathri Agencies) at the rate of Rs.25 per 200 ml bottle and for other consumers at the rate of Rs.30/-. The product is also taken by the producer societies and sold through their offices. There are no special promotional activities undertaken by the company for the product.
- ❖ The company sells the **coconut vinegar** to wholesalers and to the consumers who purchase directly from the company at the rate of Rs.45 per 500 ml bottle

**Consumption:** Consumers use Neera as a health drink and a soft drink. Coconut oil and Coconut vinegar are used as organic products. This study has proved that the consumers use the product and are satisfied with the products.



### 5.2.2. Main Actors Involved in the Value Chain

Actors involved in the value chain mean the major players who involve and support the core activities of the value chain process. Once the core processes involved are mapped, it is easy to find out and map the actors who are performing those core processes. For example, the process of production in the value chain of an agricultural commodity has farmer as the major actor involved. Likewise, each and every activity will be performed by some persons or firms, institutions that are called as actors.

Fig. 5.5 Actors involved in the value chain of Coconut Products

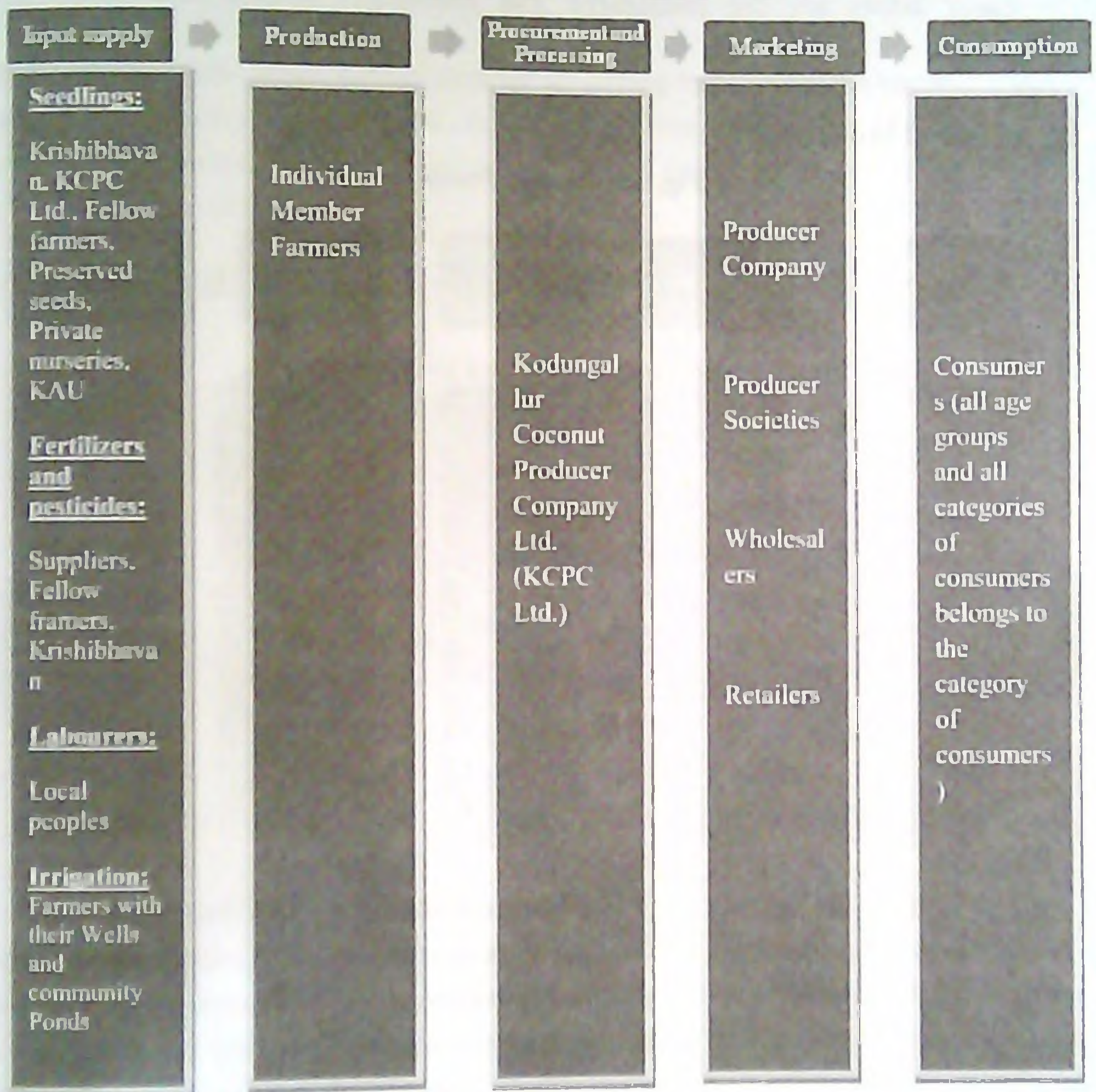
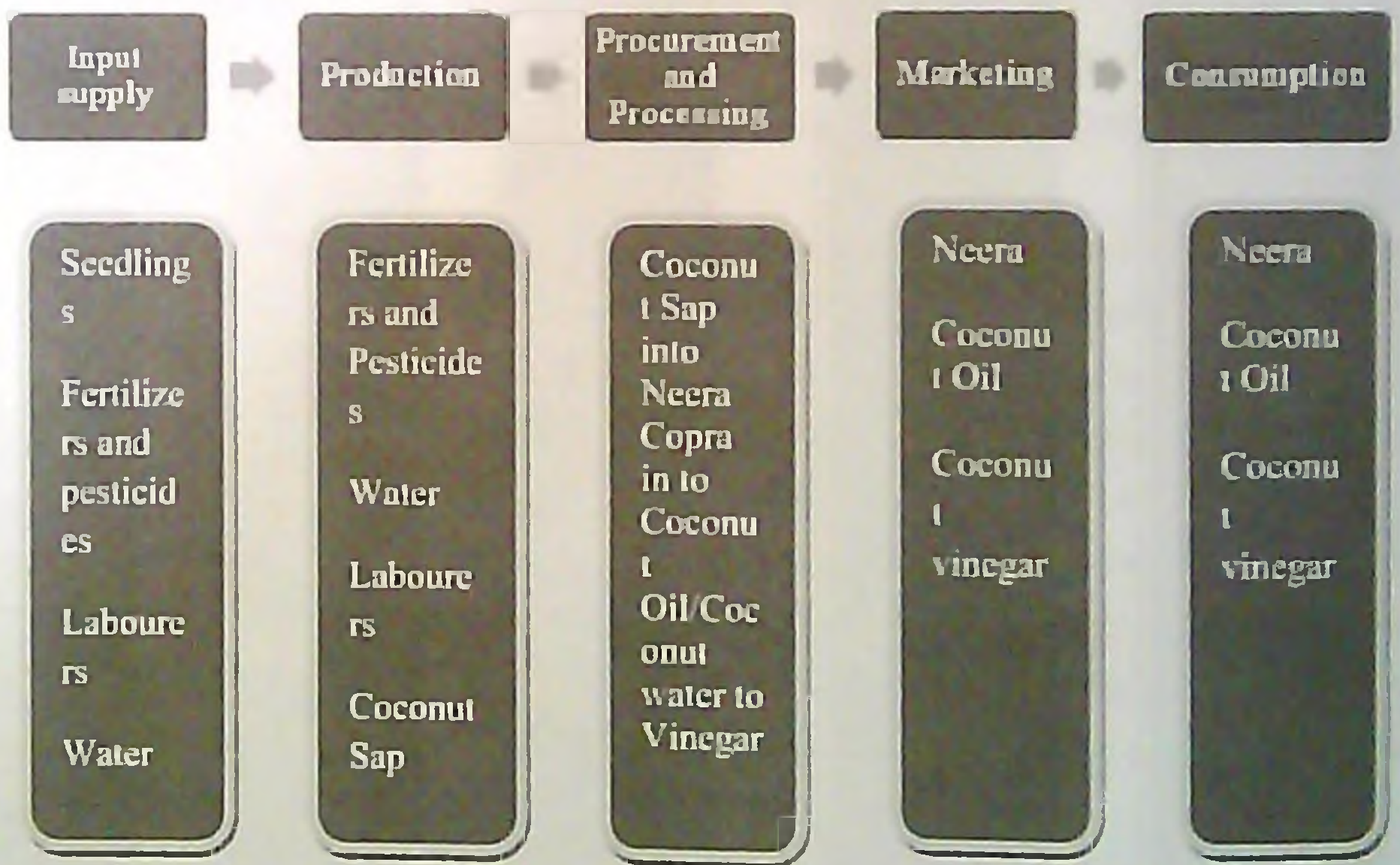




Fig. 5.5 shows the main actors involved in the core processes of the value chain of coconut products. Farmers avail inputs from Krishibhavan, fellow farmers, Kodungallur Coconut Producer Company Ltd., private nurseries, their own preserved seeds and Kerala Agricultural University (KAU). While in the production stage, the actors involved are individual farmer members. The processing is undertaken by the company itself and so the main actor involved in the production stage is the company. Marketing is undertaken by the producer company itself. The products are taken by the coconut producer societies, wholesalers and retailers. At the stage of consumption the major actors are the consumers. The consumers include households and institutions.

### 5.2.3. Flow of Products

Fig. 5.6 Flow of Products



[The arrow mark indicates the direction of flow of products]

The products handled at the input supply stage are seedlings, fertilizers and pesticides, labourers and water. At the production stage fertilizers, pesticides and labourers are involved.

**Neera:** The KCPC identifies the potential farmers and their palms for tapping through the Federation and its Society. The Company appoints trained Neera Technicians on



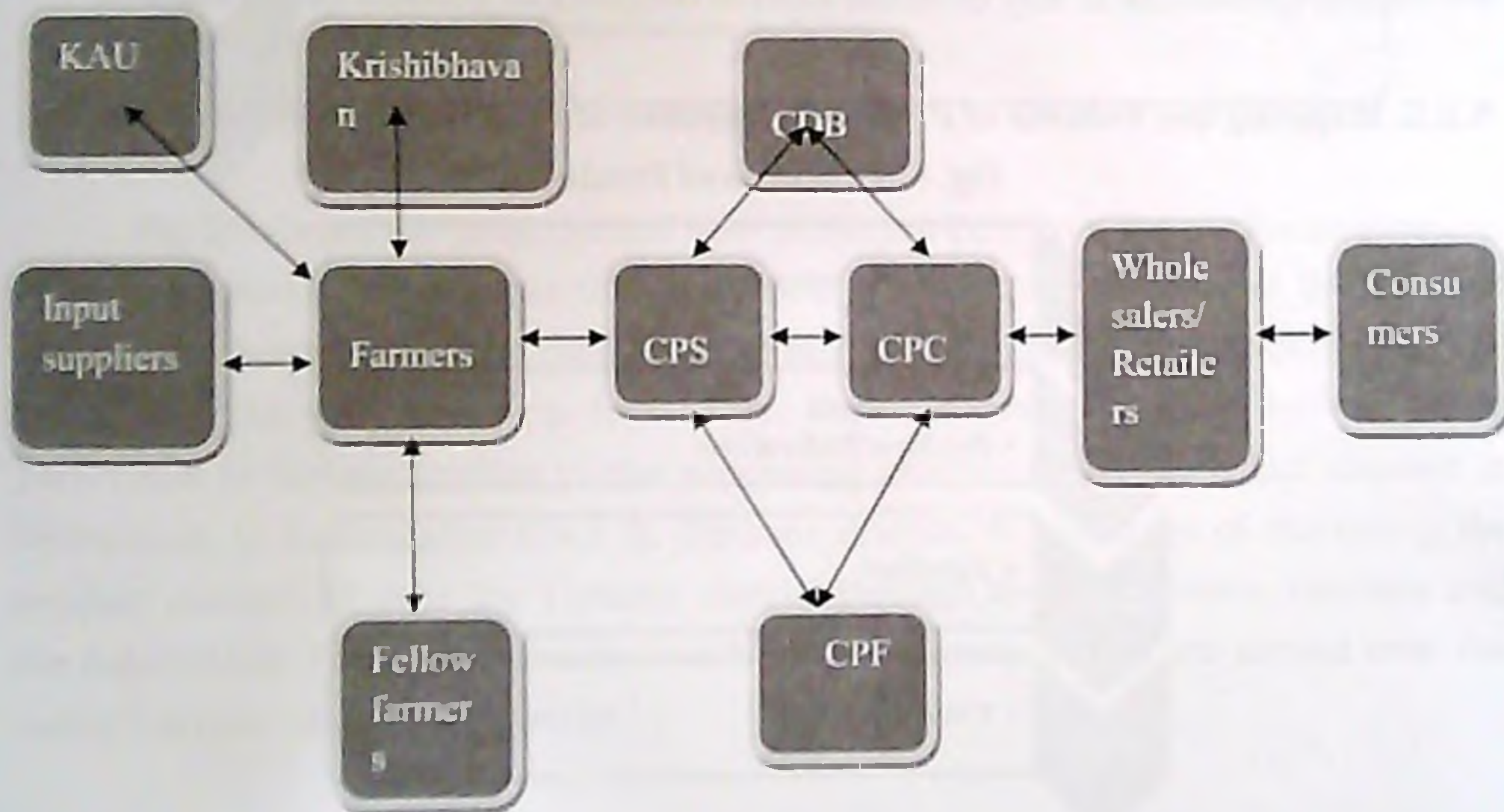
contract basis for tapping from 120 palms and bringing it to the processing plant. A palm gives around 2.5 litres per day. Neera Technician gets a basic pay of Rs.10000/- per month for supplying minimum of 400 litres in a month, and for every additional one litre he was paid Rs.30/-. At the processing stage coconut sap is converted into Neera. The end product 'Neera' flows through the marketing and consumption stage.

**Coconut Oil:** Coconut is procured by the producer company so as to convert it into copra. Copra is converted in to coconut oil; the coconut oil is then is packed, branded (Theerasri) and sold in the market.

**Coconut Vinegar:** While cutting coconut for drying in to copra, the coconut water is normally drained as waste water, now used for the preparation of Vinegar. After processing coconut vinegar as explained earlier the product is packed, branded (Theeram) and sold in the market.

#### 5.2.4 Flow of Knowledge and Information

Fig. 5.7 Flow of knowledge and Information



↔ Indicates flow of information in two directions

KAU- Kerala Agricultural University

CDB- Coconut Development Board

CPC- Coconut Producer Company



CPF- Coconut producer Federation

CPS- Coconut Producer Society

The farmers get information from input suppliers, KAU, fellow farmers, Krishibhavan and CPS regarding the new varieties of seedlings, supply of fertilizers, pesticides, schemes and subsidies for coconut cultivation etc. Farmers give information about their requirements of inputs to the suppliers. The Coconut Producer Society gets the information from the farmers regarding production of coconut, from Coconut Development Board, Coconut Producer Company and Coconut Producer Federation regarding various assistances offered. CPC gets information from CPS, CPF regarding the production, productivity of coconut of the member farmers. CDB gives information regarding the new technologies of processing and grants for plant installation to the CPC. The CPC gets the information about the movement of their products in the market from the wholesalers/ retailers. The wholesalers/retailers have a two way relationship between CPC and consumers in the case of information flow. The consumers get the information about the new products from wholesalers/retailers. The consumers also give information to the wholesalers/retailers. It may be in the form of feedback or product requirements.

**5.2.5. Mapping the Volume of Products, Number of Actors and Jobs Involved**

**Fig. 5.8 Volume of Products**

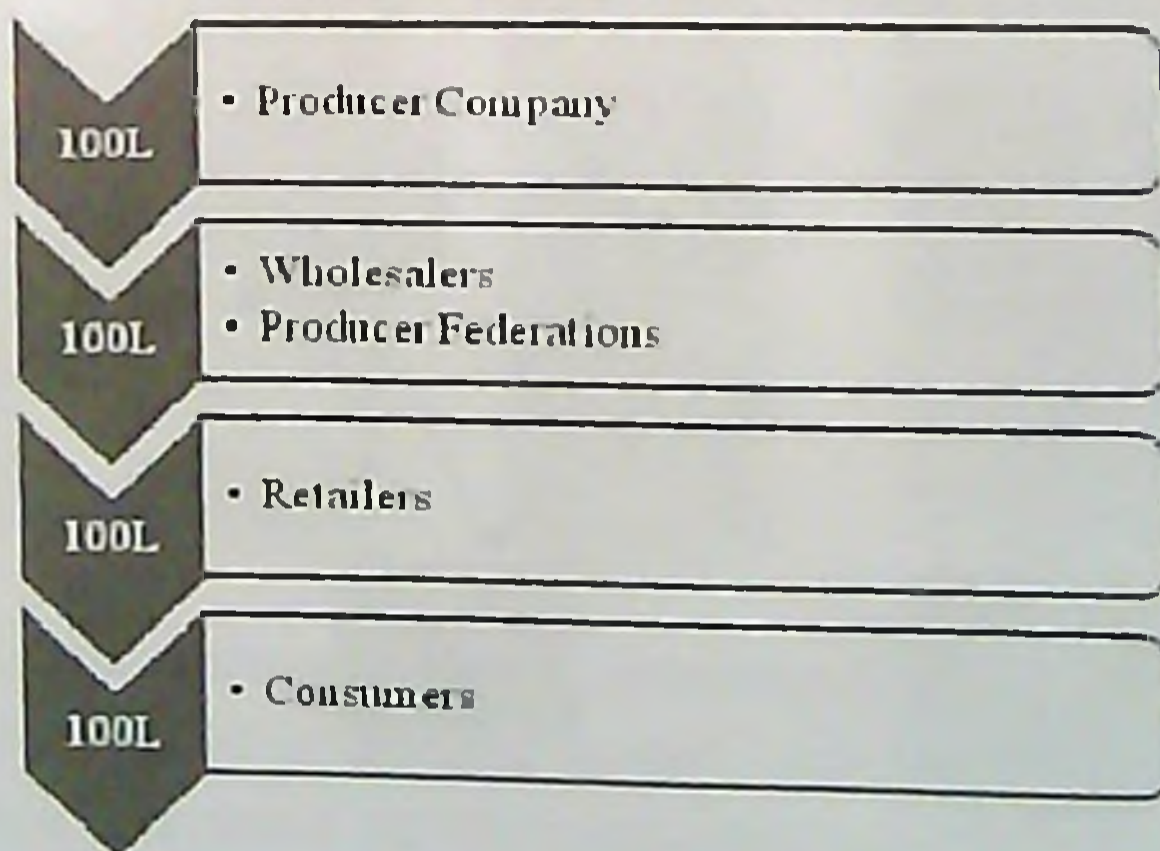


Fig 5.8 shows the volume of products that are flowing from the producer company to the ultimate consumer. The survey among the 30 farmers having around and company reveals that the company during the data collection period procures an



average of 100 L of coconut sap per day from farmers. The procured coconut sap is fully converted in to Neera and sold.

The authors couldn't collect adequate data on volume of coconut oil and vinegar produced. This may considered as a limitation of the study.

## 5.2. 6. Mapping the Geographical Flow of Product

**Fig.5.9 Geographical Flow of Products**

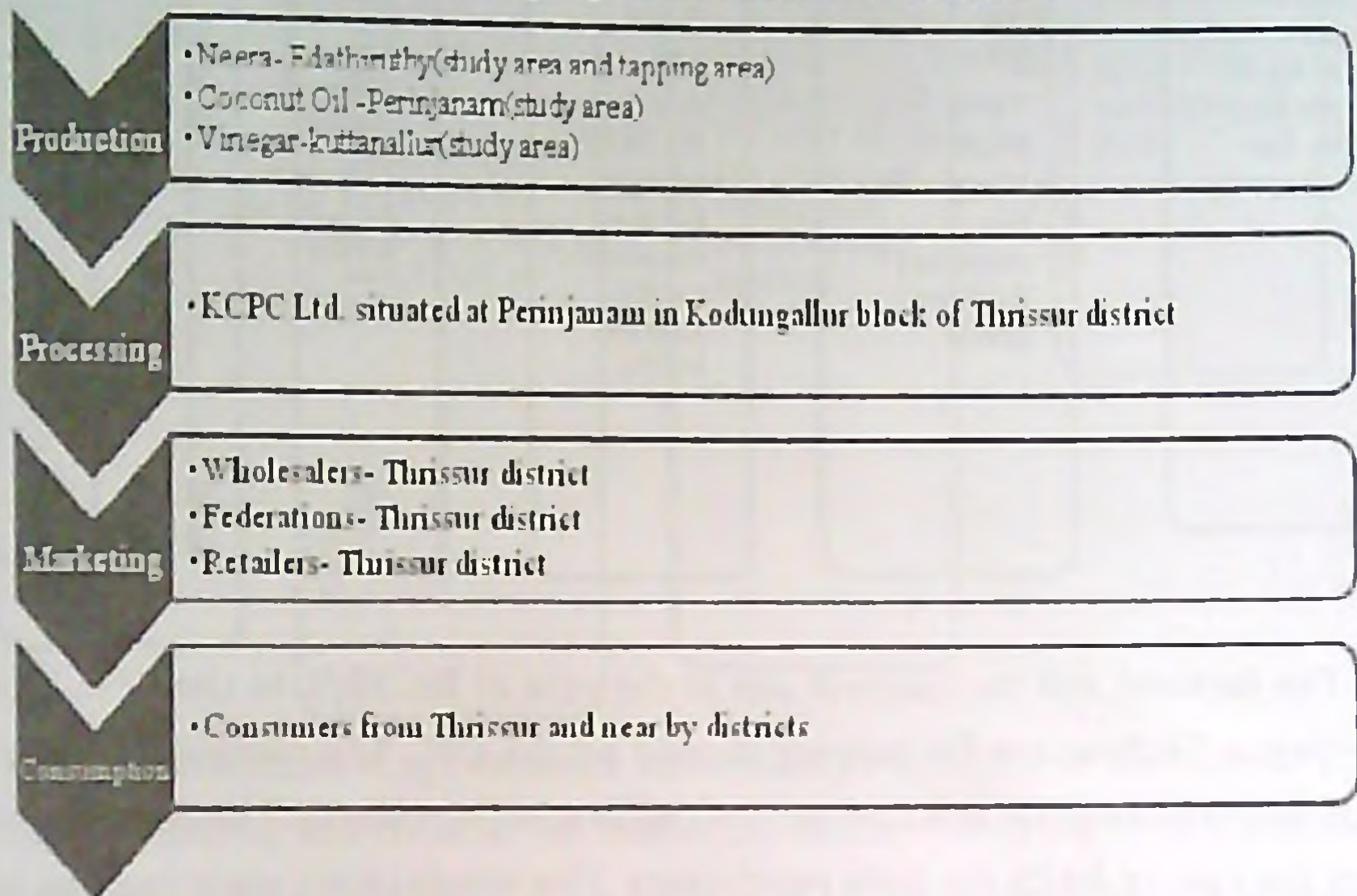
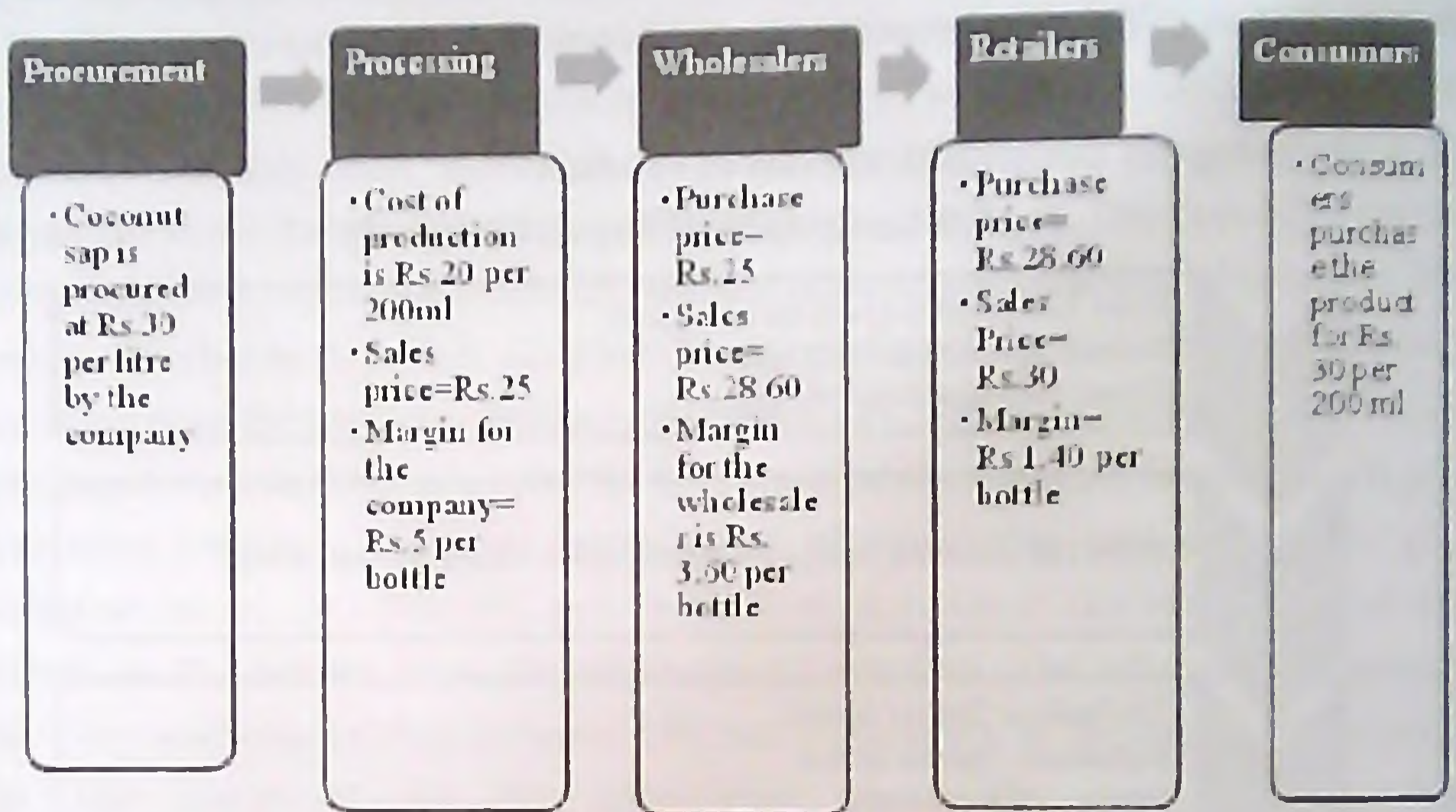


Fig 5.9 shows the geographical flow of the product from the producer company to the consumers. For example the production of coconut sap is done at the farms of coconut producers in Edathiruthy Federation situated in Edathiruthy Panchayat. The journey of the product starts from here. From farm it is carried by the Neera Technician in his motorbikes to the processing centre i.e. the KCPC Ltd situated at Perinjanam in Kodungallur block in Thrissur district. At the stage of marketing the product reaches all over the Thrissur district through the wholesalers, retailers and the federations. Finally the product reaches the consumers who are spread over the entire Thrissur and nearby district.



## 5.2.7 Mapping the Value at Different Levels of Value Chain

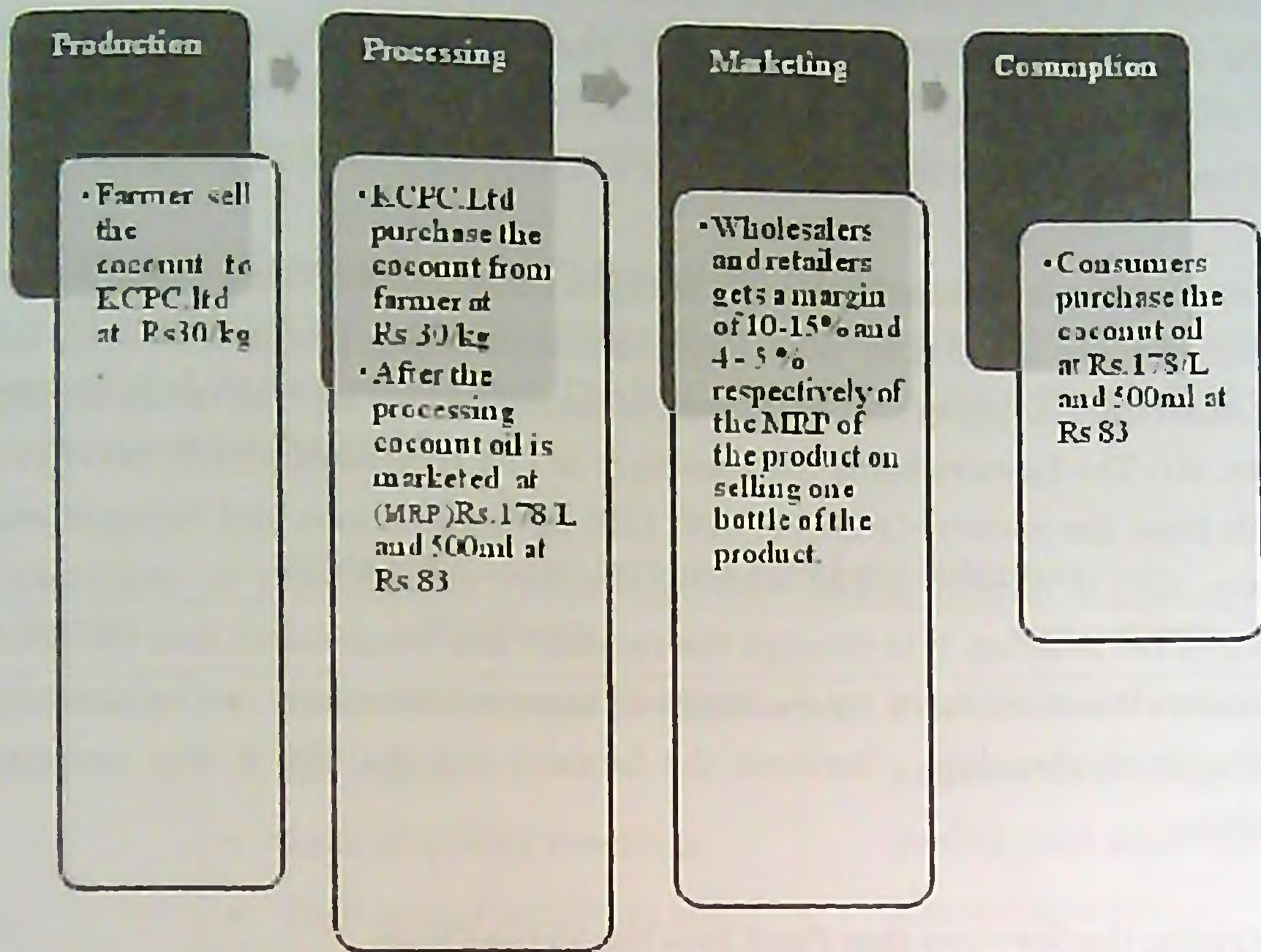
Fig.10 Value of Neera at different Level



The farmers sell the coconut sap at the rate of Rs. 30/L to the CPC. The wages for the Neera Technicians for tapping is paid by the CPC. The company processes the sap into Neera and sells it at Rs.30 per 200 ml bottle (Rs.150/L). The company sells the same at the rate of Rs.25 for bulk purchasers. The wholesalers get a margin of Rs.5/- (it includes transportation cost) and retailers gets a margin of Rs.1.40/- on the selling price of the product per bottle.

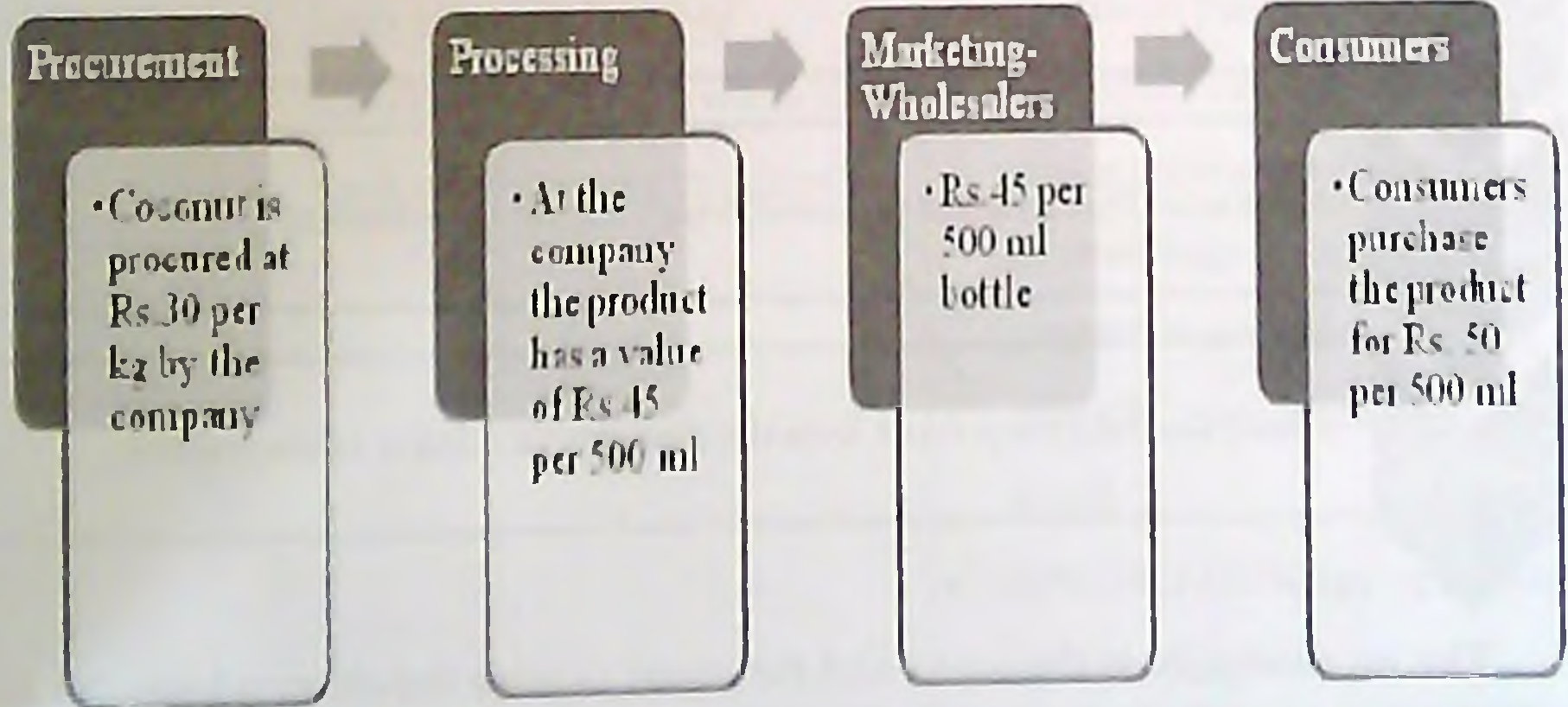


**Fig .11 Value of Coconut Oil at different Levels**



At the production stage farmers sell coconuts to KCPC at the rate of Rs.30/kg .After the production, the coconut oil marketed at the rate of Rs.178/L and 500ml at the rate of Rs.83. The wholesalers get a margin of 10-15 % and retailers gets a margin of 4-5 % of the MRP of the product per bottle

**Fig. 12 Value of the Vinegar at Different Level**





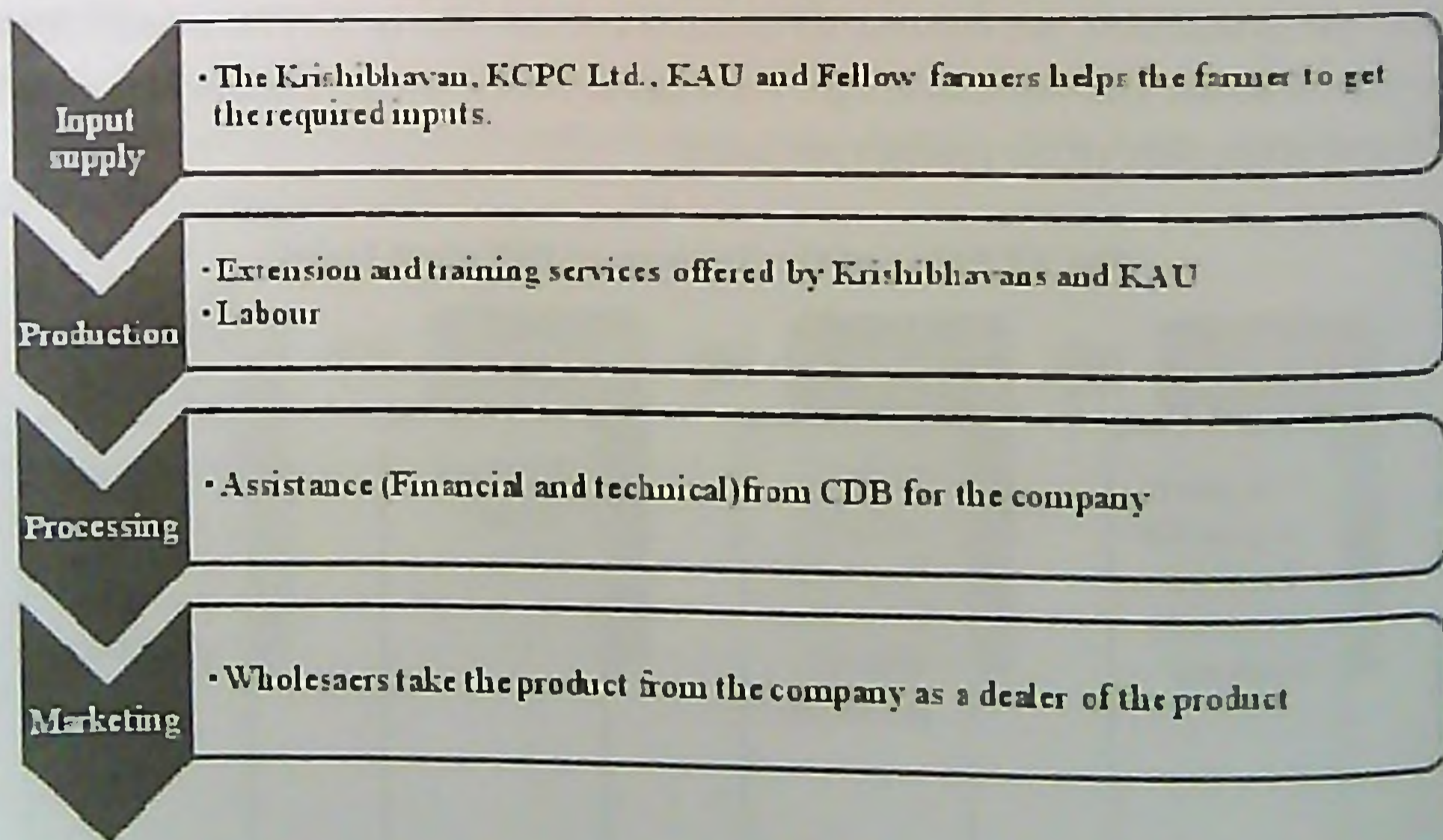
The company procures the coconut from the farmers at the rate of Rs.30 and after processing the price of the vinegar becomes Rs. 45 per 500 ml. This is the price at which the wholesalers purchase the product. The consumers who are purchasing the product from the company also get the product at this price. When it reaches the hands of consumers from retail shops it has a value of Rs.50 by adding Rs.5 per 500 ml.

### 5.2.8. Mapping the Relationships and Linkages between the Value Chain Actors

The farmers are linked with KAU, Krishibhavan(Agricultural Office), fellow farmers, other input suppliers for their need of various inputs such as seeds, fertilizers, pesticides, etc. The farmers being the members of CPS receive extension services and other aids from the society. CPS, CPF, CPC, CDB have affiliations and linkages among themselves. CPC is directly linked with wholesalers and retailers to undertake the marketing of the product. It is through the retailers and wholesalers that the product finally reaches the consumers. Interestingly all these relationships can be categorized as sustainable relationship. Between the farmers and the CPC it was contractual relationship.

### 5.2.9 Mapping the Services that Feed Into the Value Chain

Fig.12 Services that Feed into Value Chain



The input supply is the main and foremost service involved where the farmer gets his required inputs from various sources such as Krishibhavan, KCPC Ltd., KAU



and fellow farmers. At the production stage various extension services are fed by the Krishibhavan and KAU. Also the labour for Neera tapping and coconut harvesting is offered by the company at this stage. At the processing stage various financial and non financial assistance are offered to the company by CDB. It is the wholesalers (Gayathri agencies) who act as dealers for the product in the marketing stage.

### 5.2.10. Mapping Constraints and Potential Solutions

The following table clearly explains the constraints faced by the farmers and other actors of coconut value chain. The field survey drove the researchers to suggest some solutions for the problems.

**Table 5.1 Constraints and Potential Solutions**

Steps	Problems	Suggestions
Input supply	<ul style="list-style-type: none"> <li>• Lack of timely availability of the inputs.</li> <li>• Lack of quality seedlings.</li> <li>• High cost of fertilizers and pesticides</li> </ul>	<ul style="list-style-type: none"> <li>• Krishibhavan should introduce a scheme to provide high quality good seedlings at affordable price.</li> <li>• CPS has to provide the fertilizer and pesticide at affordable rate to farmer</li> </ul>
Production/ Procurement	<ul style="list-style-type: none"> <li>• Attack of pests and diseases</li> <li>• High gestation period</li> <li>• Lack of availability of labourers and high wage rate</li> <li>• Lack of Neera technicians</li> </ul>	<ul style="list-style-type: none"> <li>• Krishibhavan may provide subsidies for organic and chemical pesticides</li> <li>• Krishibhavan, CPC, CDB may make arrangements for supply of seedlings with lower gestation period</li> <li>• The CPC should create a labour Bank</li> <li>• CPC bear the wage of labourers and technicians.</li> </ul>



Processing	<ul style="list-style-type: none"> <li>• Low shelf- life of the raw product</li> <li>• Lack of trained persons</li> <li>• High investment cost and operating cost</li> </ul>	<ul style="list-style-type: none"> <li>• CDB should introduce some technologies and provide those to the company at affordable rates</li> <li>• CPC should initiate training for labourers</li> </ul>
Marketing	<ul style="list-style-type: none"> <li>• Lack of promotional activities</li> <li>• Damage during transportation</li> </ul>	<ul style="list-style-type: none"> <li>• The company should advertise in Indian Coconut Journal and other media</li> </ul>
Consumption	<ul style="list-style-type: none"> <li>• Low shelf life of the product</li> </ul>	<ul style="list-style-type: none"> <li>• The CDB should introduce some technology to increase the shelf life of the product and should provide it to the company at affordable price</li> </ul>

Source: Primary data

### 5.2.11. Making a Value Chain Matrix

Table 5.2 Value Chain Matrix for Coconut Products

Variables	Input supply	Production	Processing	Marketing	Consumption
Actors	Krishibhavan KAU KCPC Ltd. Private Nurseries Fellow- farmers	Farmers	KCPC Ltd.	KCPC Ltd. Producer Federations Wholesalers (Gayathri Agency) Retailers (organic outlets)	Consumers
Inputs/Products	Seedlings Fertilisers Pesticides Labourers, Water Technology	Fertilisers Pesticides Labourers, Water Irrigation	Coconut Sap Copra Coconut water	Neera Theerasri Coconut Oil Theeram Coconut Vinegar	Neera Theerasri Coconut Oil Theeram Coconut Vinegar
Knowledge and	Krishibhavan	Farmers		KCPC Ltd.	



<b>Information</b>	KAU KCPC Ltd. Private Nurseries Fellow Farmers	Krishibhavan KCPC Ltd. Coconut Producer Societies	KCPC Ltd.	Producer Federations Wholesalers Retailers	Consumers
<b>Volume of Products</b>		120 Palms	@ 100 L per day	@ 100 L per day	@ 100 L per day
<b>Jobs</b>	Supply of Required Inputs Farming		Processing of coconut sap into Neera Conversion of coconut/copr a into coconut oil Conversion of coconut water into coconut vinegar	Storing and Sale of Neera/Coconut oil/Vinegar in the market	Consumer consume Neera Coconut oil/Vinegar
<b>Geographical Flow of Products</b>	Thrissur	Edathiruthi	Perinjalam	Thrissur	Thrissur
<b>Value at Different levels</b>		Coconut sap is procured at Rs.30/L by the company	Company sells 200 ml bottle at Rs.25 to wholesalers Rs.30/kg	Wholesalers sell 200 ml bottle at Rs.28 to retailers. Retailers sell at Rs.30 to consumers	Consumers purchase Neera @ Rs.30 per 200ml.
		Farmers sell the coconut to the KCPC at the rate of Rs.30 per kg	After the processing the coconut oil is marketed at the rate of Rs178/l and 500ml at the rate of Rs83	Wholesalers and retailers gets a margin of 10-15% and 4 - 5 % respectively of the MRP of the product on selling one bottle of the	Consumer purchase the product at the rate of Rs.178/l and Rs.83/500ml



				product	
			Rs. 45 per 500 ml bottle of vinegar	Rs. 45 per 500 ml bottle	Rs. 50 per 500 ml bottle
<b>Relationships and Linkages (mostly Perpetual)</b>	Krishibhavan KAU KCPC Ltd. Private nurseries (Spot relationship) Fellow farmers	Farmers Krishibhavan KCPC Ltd. Coconut Producer societies	KCPC Ltd	KCPC Ltd. Producer Federations Wholesalers Retailers	Consumers
<b>Services fed into the chain</b>	Supply of inputs	Extension and training Labourers	Financial and non financial assistance	Transportation of product	Value to the Price
<b>Constraints</b>	Lack of timely availability and price volatility of inputs	Attack of pest and diseases, Lack of availability of labour and high wage cost	High cost of technology, Lack of trained persons, Low shelf life of raw product	Lack of promotion, Damage during transportation	Low shelf life of product
<b>Solutions</b>	Provide high quality good seedlings and other inputs at affordable price through Krishibhavan.	Arrangements for subsidies, labours, technicians through various agencies	Provide technologies at affordable cost, Provide training	Providing grants for company, Give advertisements in journals	Introduce new technology to increase shelf life of product.

Source: Primary data

### 5.3 Consumer Satisfaction towards Coconut Products

#### 5.3.1 Consumer Satisfaction towards Neera

30 consumers of the Neera who have visited the retail outlet (point of sale) during the period of data collection were interviewed by using a structured interview schedule. Likert scaling method was used to rate and evaluate the level of agreements/disagreements on various statements regarding Neera by the respondents. The overall satisfaction towards the product was studied based on the mean index.



**Table 5.3 Level of satisfaction towards different attributes of Neera**

Sl. No.	Statements	Score obtained	Index
1	Neera is a health drink	149	99.33
2	Neera has no side effects	146	97.33
3	Its packing is good	145	96.67
4	Neera is superior to other beverages	144	96.00
5	Neera production has a wide scope in Kerala	142	94.67
6	It is a delicious drink that is rich in vitamins, minerals and amino acids	141	94.00
7	It is good for digestion, clear urination, and works against jaundice	113	75.33
8	Promotional activities of the product are satisfactory	102	68.00
Mean Index		90.17	

Source: Primary data

It can be seen that the statements such as Neera is a health drink, superior to other beverages, no side effects, Neera production has a wide scope in Kerala scored an index above 90 %. This shows that people were aware about Neera and its health benefits. The statement regarding the promotional activities scored least. The Company is not promoting their products due to the fact that they produce less than the market demand. However, in the future, the company may have to promote the product by adopting proper advertising strategies. The mean index is found to be 90.17%. It reveals that the consumers have a good level of satisfaction towards the product Neera.

### 5.3.2 Consumer Satisfaction towards Theerasri Coconut Oil

In order to study the consumer satisfaction towards the coconut oil, survey was conducted among 30 consumers of Theerasri coconut oil. 65% of the consumers came to know about Theerasri coconut oil from friends and relatives, 21% from journals and 14% from newspapers. Most of the consumers purchased coconut oil from producer company (63%) and 37% from producer society since Theerasri coconut oil is mainly available only in the Producer Company and producer society not in the super markets. Likert scaling method was used to rate and evaluate the level of agreements/disagreements on various statements regarding coconut oil by the respondents.



Table 5.4 Satisfaction Levels of Consumers to Different Attributes

Sl. No	Statements	Score	Index
	Bar code is essential	147	98
	It is healthier than other edible oil	146	97.33
	Certification are compulsory for the product	143	95.33
	Affordable price	141	94
	Promotional activities of the product is satisfactory	135	90
	Coconut Oil is organic	133	88.67
	The product is of good quality	133	88.67
	Coconut oil can replace other oils like sunflower oil, etc.	133	88.67
	It is prepared naturally	130	86.67
	The appearance of the product should be made more attractive	129	86
	Easily available	126	84
	It is rich in Vitamins	123	82
	Coconut oil will increase the taste of food compared to other oil(sunflower oil)	123	82
	Coconut oil has a wide scope in Kerala	122	81.33
	Packing of the product is good	121	80.67
	There is no side effects for the product	119	79.33
	The producer company can bring the price of coconut oil to an affordable level	107	71.33
	Need to strengthen the promotional activities of the product	104	69.33
	It has more shelf life than other oil like sun flower oil, etc.	62	41.33
	<b>Mean Index</b>		<b>83.40</b>

Source: Primary data collected

The overall satisfaction level of Theerasri coconut oil is 83.40 %. The brand scored well in all aspects except for the statements 'It has more shelf life than other oils like sun flower oil etc', 'The producer company can bring the price of coconut oil to an affordable level' and 'Need to strengthen the promotional activities of the product'.



Since the Company is relatively a new venture, it may take its own time to increase production and thinking of promotional measures. Regarding shelf-life of Coconut Oil, the Research and Development Wing of Coconut Development Board should work and find suitable technology. Of course, the price is little higher than other edible oils in the market which needs special attention.

### 5.3.3 Consumer Satisfaction towards 'Theeram' Coconut Vinegar

In order to study the consumer satisfaction towards the Theeram Coconut Vinegar a survey was conducted among 30 consumers. Likert scaling method was used to rate and evaluate the level of agreements/ disagreements on various statements regarding coconut Vinegar by the respondents. Interestingly 96.66% of the consumers came to know about Theeram Coconut Vinegar from their friends and relatives and no one has got the sourced about the Theeram coconut vinegar from magazines, journals and television and radio advertisements. This shows that the company is not providing enough publicity for their product.

**Table 5.5 Satisfaction level of consumers to different statements**

Sl. No	Statements	Score Obtained	Index
1	Bar code essential	147	98
2	It is healthier than synthetic vinegar	146	97.33
3	Certifications are compulsory	143	95.33
4	Affordable price	141	94
5	Coconut vinegar is organic	137	91.33
6	Need to strengthen the promotional activities of the product	136	90.66
7	The product is of good quality	133	88.66
8	Coconut vinegar can replace synthetic vinegar	133	88.66
9	The appearance of the product should be made more attractive	129	86
10	It is prepared naturally	124	82.66
11	It is rich in vitamins	123	82
12	Coconut vinegar has wide scope in Kerala	122	81.33
13	Packing of product is good	119	79.33



14	There are no side effects for the product	119	79.33
15	Coconut vinegar will increase the taste of food compared to synthetic vinegar	114	76
16	Easily available	111	74
17	The producer company can bring the price of coconut vinegar to an affordable level	107	71.33
18	Promotional activities of the product is satisfactory	72	48
19	It has more shelf life than synthetic vinegar	62	41.33
	Mean Index		81.33

Source: Primary data

The overall satisfaction level of Theeram Coconut Vinegar is 81.33 %. The brand scored well in all aspects except for the statements 'Promotional activities of the product is satisfactory' 'Easily available' and 'It has more shelf life than synthetic vinegar'. Since the Company is relatively a new venture, it may take its own time to increase production and thinking of promotional measures. Regarding shelf-life of Theeram Coconut Vinegar, the Research and Development Wing of Coconut Development Board should work and find appropriate technology. This inference implies that the consumers are strongly agreeing that the coconut vinegar is organic, healthier, and natural and replaces synthetic vinegar.

#### 5.4 Impact of Producer Company on Farmers

##### 5.4.1 Impact of Producer Company on Farmers Producing Neera

One of the objectives of this research study was to analyse the impact of company on farmers. The impact on farmers was studied on the changes in the level of income by comparing the farmers' income before joining the society and after joining the society. The farmers' survey was conducted from the 60 randomly selected farmers in the Edathiruthy Federation which comes under the KCPC Ltd. The sample included 30 Neera producing farmers and 30 farmers who do not produce Neera. This has helped to understand the additional income that farmers are getting over and above the income from nuts alone. The data were analyzed using frequency, percentages and students t- test. Before the formation of company and society, the farmers had income from nuts alone which was sold at a rate of Rs.28/kg to local traders. After the formation of the society and company the farmers sold their nuts at



the rate of Rs.30/kg. Farmers who got the advantage of Neera tapping have an additional income (Neera at the rate of Rs.30litre).

**Table 5.6 Details of Average income variation per palm per year for the respondents**

Income/palm/year Farmer category	Average Income (Rs.)		
	Before the formation of company	After the formation of company	Change
Neera producers	2300	18400	16100
Neera non- producers	2300	2500	200

Source: Primary data

It can be seen that the income level has increased after the formation of company for both category of farmers. But the change was higher for Neera producers compared to others. It is because of the additional income that Neera producers got through production of Neera. The calculated absolute t value is 16.602 at 5% significant level for 29 degrees of freedom. The table value for t test is 2.05. The calculated absolute t-value is greater than the table value. So there is significant variation in the income of Neera producers before and after tapping. The calculated absolute t value is 29.019 at 5% significant level for 29 degrees of freedom. The table value for t test is 2.05. Since the calculated absolute t-value is greater than the table value, there is significant variation in the income of Neera non producers before and after the formation of the company.

#### 5.4.1 Impact of Producer Company on Farmers Producing only Coconuts

The analysis of the income change was done by surveying 120 member farmers of the two societies by using a structured interview schedule. 60 farmers were chosen from Pulicode Nalikera Vikasana Sangham and the other 60 farmers were from Kuttanellur Nalikera Vikasana Sangham. Percentage analysis was used for the analysis. The change in income level is calculated by taking the average price of coconut per kilogram that the farmer got while he sold his produce when he was not a member of the society and after taking the membership. Table 5.7 clearly indicates the change that took place in the member farmers' income due to coconut sales through the societies. Within a very short span of time, the CPC has shown a positive trend and it's



an indication for sustainable development of farmers' livelihood. With regards to the farmers holding less than 25 palms, only limited change could be noticed in the table. But with the farmers holding 25-50 palms, significant change in income was realized and that could be noticed in the movement of 10 farmers to the above one lakh category. That is the case with the farmers holding 50-75 palms. In the survey the researchers have also identified that the farmers with 25-50 palms are maintaining their farm scientifically and their average productivity was above that of other groups.

**Table 5.7 Income per year from Coconut before and after taking Membership**

Before taking Membership								
Less than 25 palms			25-50 palms			50-75 palms		
Income per year	Number of Farmers	Percentage	Income per year	Number of Farmers	Percentage	Income per year	Number of Farmers	Percentage
<50000	41	73.21	<50000	18	36	<50000	4	28.57
50000-75000	15	26.79	50000-75000	14	28	50000-75000	5	35.71
75000-100000	0	0	75000-100000	18	36	75000-100000	3	21.43
>100000	0	0	>100000	0	0	>100000	2	14.29
Total	56	100	Total	50	100	Total	14	100
After taking Membership								
Less than 25 palms			25-50 palms			50-75 palms		
Income per year	Number of Farmers	Percentage	Income per year	Number of Farmers	Percentage	Income per year	Number of Farmers	Percentage
<50000	40	71.43	<50000	15	30	<50000	4	28.57
50000-75000	15	26.78	50000-75000	11	22	50000-75000	2	14.29
75000-100000	1	1.79	75000-100000	14	28	75000-100000	4	28.57
>100000	0	0	>100000	10	20	>100000	4	28.57
Total	56	100	Total	50	100	Total	14	100

Source: Primary data



The paired sample t-test was calculated to know the statistical significance separately for two sets of samples namely 60 farmers of Pulicode Nalikera Vikasana Sangham and 60 farmers of Kuttanellur Nalikera Vikasana Sangham. The paired sample t-test conducted for Pulicode Nalikera Vikasana Sangham gave the value -13.76. The table value of the t test for 5% significance is 2.00. The table value is less than the calculated absolute t value and so the null hypothesis can be rejected and the alternative hypothesis can be accepted. Therefore, it can be concluded that there is a significant variation in increase in income level of farmers after taking the membership in the producer society.

The paired sample t-test conducted for Kuttanellur Nalikera Vikasana Sangham gave the value -16.36. The table value of the t test for 5% significance is 2.00. The table value is less than the calculated absolute t value and so the null hypothesis can be rejected and the alternative hypothesis can be accepted. Therefore, it can be concluded that there is a significant variation in increase in income level of farmers after taking the membership in the producer society.

## **5.5 Conclusion**

The authors clearly drew the value chain map of three selected coconut products. The major player in the value chain was Kodungallur Coconut Producers Company Ltd., (KCPC). The company has started proving its potential to grow in the long run. The farmers, utilizing the facilities, started getting more income than the others. Consumers are supplied with good quality value added coconut products at fair price. However, the study found certain limitations which need immediate attention by the change agents. The Kodungallur Coconut Producers Company Ltd., (KCPC) has started its business in a humble way. Considering the potential of doing business particularly with respect Neera and Coconut oil, the Company should scale up its business. Since, National Bank for Agriculture and Rural Development, Coconut Development Board and Small Farmers Agribusiness Consortium are promoting such Producers Companies, mobilization of fund for business may not be a constraint. Technology is also not a major impediment for the growth. The board should take appropriate measures to enroll more active members and prepare suitable business plan for expansion. The authors felt that there is immense scope for increasing production, procurement, processing and marketing of coconut products in the region. Continuous assessment of company's performance, needs of farmers, and linkages with the other stakeholders will lead to success.



## APPENDIX

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