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**VALUE CHAIN MANAGEMENT OF VIRGIN COCONUT OIL – A CASE STUDY ON  
GOLDEN VINTAGE FARMERS INDUSTRY, KORATTY, THRISSUR DISTRICT**

**By**

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**(2010-45-124)**

**PROJECT REPORT**

*Submitted in partial fulfilment of the requirement for the degree of  
Bachelor of Science (Hons) in Co-operation & Banking*

**Faculty of Agriculture**



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*Declaration*

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## DECLARATION

I hereby declare that this project entitled 'VALUE CHAIN MANAGEMENT OF VIRGIN COCONUT OIL - A CASE STUDY ON GOLDEN VINTAGE FARMERS INDUSTRY, KORATTY, THRISSUR DISTRICT' is a bonafide record of work done by me during the course of major project work and that it has not previously formed the basis for the award to me of any Degree/ Diploma/ Associate ship/ Fellowship or other similar titles of any other University or Society.

Place: Vellanikkara

Asawathy Ashok (2010-45-124)

Date: 18-7-2014

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*Certificates*

# CERTIFICATE

Certified that this project report entitled 'VALUE CHAIN MANAGEMENT OF VIRGIN COCONUT OIL – A CASE STUDY ON GOLDEN VINTAGE FARMERS INDUSTRY, KORATTY, THRISSUR DISTRICT ' is a bonafide record of project work done independently by **Aswathy Ashok (2010-45-124)** under my guidance and supervision and that it has not previously formed the basis for the award of any Degree, Fellowship, or Associate ship to none of them.

Vellanikkara

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# CERTIFICATE

We hereby declare that this work entitled 'VALUE CHAIN MANAGEMENT OF VIRGIN COCONUT OIL – A CASE STUDY ON GOLDEN VINTAGE FARMERS INDUSTRY,KORATTY,THRISSUR DISTRICT ' "is a bonafide of research work done by Miss. Aswathy Ashok (2010-45-124) during the course of work experience programme and that it has not previously formed the basis for the award to any degree/ diploma, associateship, fellowship or similar title of any other University or Society.

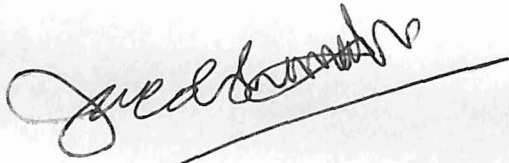
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**Aswathy Ashok (2010-45-124)**

*Contents*

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# CONTENTS

Sl. No.	Title	Page no.
1	Abstract	1
2	Design of the study	2-12
3	Profile of Golden vintage farmers industry	13-24
4	Value chain management – A theoretical framework	25-32
6	Value chain mapping of coconut- A study of Golden vintage farmers industry	33-49
7	Constraints in the value chain of coconut	50-67
8	Summary and findings	68-71
9	Bibliography	72-73
10	Appendix	74-80

## LIST OF TABLES

Table No	Title	Page No.
2.1	Top ten coconut producing countries in the World	15
2.2	Coconut area, production, and productivity of major coconut producing countries	16
2.3	Coconut area and production in various states	17
2.4	District wise area, production and productivity of Kerala state	18
4.1	Fertilizer requirement of young palms in relation to that of adult palms	41
4.2	Fertilizer recommendation for coconut	42
4.3	Cost of cultivation	44
5.1	Age wise classification of farmers	50
5.2	Gender wise classification of farmers	51
5.3	Educational wise classification of farmers	51
5.4	occupational pattern of farmers	52
5.5	Family income of farmers	52
5.6	Property ownership of land	53
5.7	land holding details of farmers	53
5.8	experience of farmers active in coconut cultivation	54
5.9	Area under coconut cultivation (owned)	55
5.10	No of coconut palm cultivated by farmers	55
5.11	No. of coconut palm yielding	56
5.12	Source of irrigation	57
5.13	Cost of cultivation of coconut / year	57

5.14	Coconut production(nuts) per year	58
5.15	Details of source of inputs	58
5.16	Details of loan taken by farmers.	59
5.17	Reason for taking loan	60
5.18	Amount of credit taken by farmers	60
5.19	Self consumption and marketable surplus	61
5.20	Marketing channels	61
5.21	Fixing price of coconut	62
5.22	Source of information	62
5.23	Membership in co-operative society	63
5.24	Gender wise classification of consumers	63
5.25	Educational qualification	64
5.26	Income of consumer	64
5.27	Frequency of purchase	65
5.28	Reasonability of price	65
5.29	Source of information regarding product	66
5.30	Market awareness about the product	66

## LIST OF FIGURES

Fig.no	Title	Page number
1.1	Koratty panchayat in thrissur district.	12
2.3	Major coconut products	18
3.1	Porter's value chain	28
4.1	Core processes in the value chain of coconut	36
4.2	Actors involved in the coconut value chain	37
4.3	Specific activities undertaken in the value chain of coconut	39
4.4	Value chain of coconut through processing unit	42
4.5	Flows of product, information and knowledge in the value chain	45
4.6	Geographical flow of coconut	46
4.7	Relationships and linkages between different actors	47

## ***Abstract***

*This study was initiated to analyze “Value Chain Analysis of Virgin Coconut Oil” particularly in Thrissur district. The focus of the study was to, identify various components in value chain of coconut , linkages among different actors in coconut production and benefit distribution to them, the procurement, processing and marketing operation of virgin coconut oil in Thrissur district and understand the different cost and returns involved in the each step of the value chain of virgin coconut oil. The sampling frame taken for the analysis is 15 Farmers,1 Processing units,1 private agent and 10 Consumers. The data were generated by individual interview using structured questionnaires. This was supplemented by secondary data collected from different published and unpublished sources. The main market participants for virgin coconut oil value chain in the District during the survey period were farmers, processors, agents and consumers. Besides, a significant amount of virgin coconut oil produced is channeled directly to consumers from processors. The virgin coconut oil marketing performance was also measured using marketing margins complemented with analysis of costs and gross profits generated by different value chain actors.*

*From the study conducted, the major problems of the production identified in the study are no availability of raw materials, packing materials, high labour cost, lack of promotional activities and high transportation cost. The general survey realized on the need of a special package of program to overcome these problems, which include linkage of processing unit with krishi bhavan to get more raw materials, direct their efforts towards promoting their product and produce variety of products from coconut. Based on the study results, interventions demanded to raise marketable supply of virgin coconut oil produced are recommended.*

# CHAPTER 1

## DESIGN OF THE STUDY

### 1.1 INTRODUCTION

India is the third largest coconut producing country in the World. Coconut has an important place in the Indian culture and has been produced here since time immemorial. The area under the plantation cultivation is around 1.78 million hectares in the country. Kerala is the largest producer of coconut in India. Kerala is the land of KERA (coconut palms).

Modern world's rediscovery of virgin coconut oil comes as a blessing to us. It counters the ill-informed and vested-interest propaganda that shadows the health benefits of coconut oil, in general and brings to highlight the medicinal and nutritious properties of pure and natural coconut oil – the virgin coconut oil. Virgin coconut oil and natural coconut products that nourish the goodness of nature and support the good earth.

Farmers of India offer an extensive range of natural coconut products such as coconut oil, desiccated coconut powder, virgin coconut oil, fiber etc. Most importantly, the company always meets the stringent quality demands of our global customers. While our high-quality eco-friendly natural coconut products are grown and produced without synthetic fertilizers, pesticides or other agro-chemicals. Such environment-friendly traditional farming helps nurture natural nutrients - exactly what today's health-conscious consumers are seeking. In addition, traditional production systems maintain soil fertility in sustainable ways and help protect the eco-system.

Virgin coconut oil extracted from fresh coconut meat without chemical processes is said to be "mother milk of all oils". It is rich in medium chain fatty acids, particularly lauric acid and is a treasure trove of minerals, vitamins, antioxidants and is an excellent nutraceutical. It has about 50% lauric acids, having qualities similar to mother's milk, thus confirming its disease-fighting ability.



### 1.1.1 VIRGIN COCONUT OIL

Virgin coconut oil (VCO), extracted from fresh coconut meat without chemical processes is said to be the "mother of all oils". It is rich in medium chain fatty acids, particularly lauric acid and is a treasure trove of minerals, vitamins, antioxidants and is an excellent nutraceutical. It has about 50% lauric acids, having qualities similar to mother's milk, thus confirming its disease-fighting ability. When lauric acid enters human body it gets converted to Monolaurin, which has the ability to enhance immunity. Several studies have confirmed that this compound has the ability to kill viruses including herpes and numerous other bacteria. Its antiviral effect has the ability to considerably reduce the viral load of HIV patients. VCO is not subjected to high temperatures, solvents or refinement procedures and therefore retains the fresh scent and taste of coconuts. It is rich in vitamin E. it is non-greasy, non-staining and is widely used in soaps, lotions, creams and lip balms.

### 1.1.2 Special features of Virgin coconut oil

- Good for treating aids patients
- It prevent heart diseases,stroke,hardening of arteries.
- Strengthen the immune system
- Protect against bacterial, viral & fungal infections.
- Most suitable for cosmetics
- Boost daily energy level.

### 1.2. STATEMENT OF THE PROBLEM

Kerala is the largest producer of coconuts in India. Virgin coconut oil and natural coconut products that nourish the goodness of nature and support the good earth. Golden Vintage Farmers Industry produce virgin coconut oil from the coconut flesh, the processed virgin oil have superior quality and marketed all over the state and upcountry markets in India and abroad. In this context an attempt has been made to account the procurement, production and marketing of virgin coconut oil of Golden Vintage Farmers Industry with a view to understand and analyse the value created or added at various stages of activities to enhance and ensure the competitive advantage of the firm under study in the industry

### 1.3. OBJECTIVE OF THE STUDY

- The study is to map the different components and actors involved in the value chain of Virgin coconut oil production in Golden vintage farmers industry, Koratty

### 1.4. REVIEW OF LITERATURE

Castillo (1977) study notes that the lowest wage earners in the coconut industry are those who gather coconut pickers, huskers and copra-makers. The haulers earn the highest daily wage. All the studies therefore clearly point out that the income in coconut farms are very low and not enough to meet even the basic needs of the farmers and farm workers.

David (1977) states that the farmers who comprise three fourths of the population and who actually produce the coconuts/copra, receive only one fourth of the industry income, while the landowners and overseers, the traders and the exporters and millers who comprise one fourth of the industry population garner three fourths of the industry income. The landowners and overseers alone, who do not actually do farm work, receive 49.2 % of total industry income.

John and Govindarajan (1993), describe the value chain in broader terms than does Porter. They state that “The value chain for any firm is the value-creating activities all the way from component suppliers through to the ultimate end use product delivered into the final consumer’s hand”. This description views the firm as part of an overall chain of value creating process.

SPAMCO-II (1994) has made the following recommendations

Coconut product diversification has to be promoted to sustain the coconut economy. Coconut development board shall give maximum publicity to create awareness among public about new and non traditional products of coconut origin. It is necessary to pay due consideration to new coconut growing area in the country while establishing units utilising modern technology

Veerappamoily (1994) opinioned that prices of various coconut products are determined by ruling price of coconut oil which is subject to wide fluctuation depending on the supply and availability of other oils. so to strengthen the coconut industry in the country it is essential to promote product diversification and by-product utilisation which will benefit the coconut farmer and rural economy through value addition

Hobbs *et.al* (2000) defines the value chain as one particular form of the supply chain. In this approach, the supply chain refers to the entire vertical chain of activities: from production on the farm, through processing, distribution and retailing to the consumer –in other words- the entire spectrum, from gate to plate, regardless of how it is organized or how it functions. Hobbs' definition of supply chain is thus similar to Kaplinsky and Morris' definition of value chain. Hobbs et al defines the value chain as a vertical alliance or strategic network between a number of independent business organizations within a supply chain.

Kaplinsky (2000) Furthermore value chain analysis is particularly useful for new producers – including poor producers and poor countries – who are trying to enter global markets in a manner which would provide for sustainable income growth. It is also useful as an analytical tool in understanding the policy environment which provides for the efficient allocation of resources within the domestic economy, notwithstanding its primary use thus far as an analytic tool for understanding the way in which firms and countries participate in the global economy.

Dagmar (2001), describes that value chain analysis includes the activities within and around an organization, and relates them to an analysis of the competitive strength of the organization. Therefore, it evaluates which value each particular activity adds to the organizations products or services

Varmudi (2001)<sup>6</sup>in his article 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.

Chowdhury (2002) on his paper on Problems and prospects of coconut cultivation in Assam. Discusses the present status and problems of coconut cultivation in Assam, India. The future prospects for coconut cultivation focuses on enhancing the area and productivity, production and distribution of quality planting material, coconut-based farming systems, and postharvest processing technology.

Lathika and Kumar (2005) study on the topic “Growth trends in area, production and productivity of coconut in India”. This study examines the growth trends in coconut area, production and productivity in India for the past five decades (1950/51-2001/02). It focuses on the performance of different states in coconut production and also the relative role of area and yield in explaining the observed trend in production. It reveals, among others, that area effect continues to assume a greater role in output growth in almost all coconut regions of the country, though some states like Kerala and Orissa recently showed signs of a productivity-based growth of output.

Taylor and David,(2005) To develop an innovative methodology to apply lean value chain improvement techniques to a complete supply chain for a food product from farm to consumer. Value stream analysis (VCA) highlights significant opportunities to improve supply chain performance, profitability and relationships.

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 inferred that the increased production is not benefiting the 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 technological means of developing value added products from the farm produce but also to integrate all activities extending from production to consumption

Morte and Julian (June 2007) article in Harvard Business Review on “The Innovation of Value Chain” describes to improve innovation, executives need to view the process of transforming ideas into commercial outputs as an integrated flow rather like Michael Porter’s value chain for transforming raw materials into finished goods. The first of the three phases in the chain is to generate ideas; this can happen inside a unit, across units in a company, or outside the firm. The second phase is to convert ideas, or, more specifically, select ideas for funding and developing them into products or practices. The third is to diffuse those products and practices.

VanMelle (2007) presented the paper on —Agricultural Value Chain. Development in West Africa- methodological framework in Benin". His paper presents the framework of value chain concept and analysis, as a guide to enhance competitiveness of commodities at national, regional or global level. The international market for mango is characterized by stringent quality requirements regarding fruit flies. This needs to be addressed as a key value chain challenge for competitiveness of the commodity in Benin & West Africa.

Carandang (2008) Health benefits of virgin coconut oil This article initially compares coconut oil and virgin coconut oil. The, the chemical structure of different biologically active substances found in coconut oil (tocopherols, tocotrienols, phytosterols, phytostanols, flavonoids and other polyphenols, phospholipids, medium chain triglycerides) and their health benefits are also discussed.

Isabelita *et.al.*(2009) a study was conducted to identify the key actors ,prices and value shares in the Philippine coconut market chains as a implication for poverty reduction. The Philippine coconut market chains was examined for three products, namely, coconut oil (CNO), virgin coconut oil (VCO), and coco wine in terms of (1) the different market actors or participants that perform the various production and marketing services to ensure that products reach the end-users in the right form, time and place; (2) the price structure that reflects the value-addition through the various stages of the chain; and (3) the distribution of the final product value among the different market participants including the coconut farmer. The farmers have limited participation in the coconut distribution chain since they remain in the lowest stage of the chain and sell only raw materials. There is considerable value-addition taking place as coconut products move through the chain as indicated by the extent of coconut processing into high value products. The shares of the different market actors in the final value of the coconut product vary. Although the farmer's share is relatively high for some coconut products, their income remains low compared to the other market participants such as the processors and traders. Thus, coconut farmers are among the poorest in Philippine agriculture. Government support is necessary to address the market development needs of coconut farmers in order reduce poverty in coconut farming communities.

UNIDO (2009)on the paper —Agro-Value Chain Analysis and Development —value chain analysis is the process of breaking a chain into its constituent parts in order to better understand

its structure and functioning. The analysis consists of identifying chain actors at each stage and discerning their functions and relationships; determining the chain governance, or leadership, to facilitate chain formation and strengthening; and identifying value adding activities in the chain and assigning costs and added value to each of those activities. The flows of goods, information and finance through the various stages of the chain are evaluated in order to detect problems or identify opportunities to improve the contribution of specific actors and the overall performance of the chain. By going beyond the traditional narrow focus on production, value chain analysis scrutinizes interactions and synergies among actors and between them and the business and policy environment. Thus, it overcomes several important limitations of traditional sector assessments which tend to ignore the dynamic linkages with and among productive activities that occur outside the particular sector under assessment or involve informal operations. Value chain analysis also reveals the dynamic flow of economic, organizational and coercive activities involving actors within different sectors. It shows that power relations are crucial to understanding how entry barriers are created, and how gain and risks are distributed. It analyses competitiveness in a global perspective. By revealing strengths and weaknesses, value chain analysis helps participating actors to develop a shared vision of how the chain should perform and to identify collaborative relationships which will allow them to keep improving chain performance. The latter outcome is especially relevant in the case of new manufacturers – including poor producers and poor countries – that are seeking to enter global markets in ways that can ensure sustainable income growth.

Charles *et.al* (2010) their paper on ‘Raising incomes of smallholder of coconut producers in Kenya through more efficient value chain management’. The paper discusses the results of a study undertaken to identify the challenges to sustainable and economic production of coconuts in Kenya. A constraint and opportunity analysis was undertaken along the value chain to identify the key challenges limiting economic production of coconut. The results indicated that coconut production in Kenya is constrained by inadequate use and high cost of inputs, limited availability of clean planting material, pests and diseases, poor agronomic practices, poor market access.

Enig (2010) Health and nutritional benefits from coconut oil and its advantages over competing oils. This article reviews the major challenges facing coconut oil today. Some new directions where important positive health benefits are seen for coconut oil are suggested. It is concluded that the lauric acid in coconut oil is used by the body to make the same disease-fighting fatty acid

derivative monolaurin that babies make from the lauric acid they get from their mother's milk.

The monoglyceride monolaurin is the substance that keeps infants from getting viral or bacterial or protozoal infections.

Nair (2010) The health benefits of virgin coconut oil. This article focuses on virgin coconut oil (VGO). New methods of production of VGO are described. The health benefits of VGO include nutritive value, increase in disease resistance, heart protective factors, liver protection, weight loss, aesthetics and antiparasitic properties

Niraj and Sanjeev (2010) in their paper on "Value chain analysis of coconut in Orissa" they tried to find out the flow of the products and actors in the value chain of coconut. 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, namely, Puri, Cuttack, Khurda, Ganjam, and Jagatsinghpur has 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 to be well established in the state, 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 coconut based industries should be jointly promoted by state industry department, state agriculture department and Coconut Development Board.

Nagaraja and Basavaiah (2011), conducted a study on coconut production and marketing during the year 2007 and 2008 in Chitradurga district in Karnataka. The production can be marketed near places as well as sold at distant places.. There were different channels of coconut marketing like, channel-I (farmers (individual)- consumer), channel-II (farmers (individuals)-pooling agent-consumer), and channel-III (farmers (individuals)- pooling agents- merchant broker-consumer. Strengthening of each channel will support the marketing of coconut. Reducing the actors of value chain will help the farmers to get good price for their produce.

Enig (2013) Health and nutritional benefits from coconut oil and its advantages over competing oils. The first part of this paper reviews the major challenge facing the promotion of coconut oil as health food at present: the diet/heart hypothesis, which is based on a supposed negative role played by saturated fat in heart disease. The second part of the paper presents new directions for research regarding the health benefits of coconut. These benefits stem from coconut oil's use as a food with major antimicrobial and anticancer benefits. The rationale for this effect and literature studies on the topic are discussed.

Muralidharan and Jayashree (2013) their paper on "Industrialization of coconut oil industry opportunities" discusses the demand of value added products of coconut. The Asia Pacific region which accounts for nearly 90% of the total coconut production also accounts for nearly 60% of the world population with a fast growing economy. This population will require a large quantity of coconut oil for health, nutrition as well as for alternative energy sources in addition to export earnings. Product diversification and expansion of coconut kernel based products, high end applications of lauric oils in the edible as well as oleo chemicals sector is indicative of a promising future for coconut oil industry.

Remany (2013) paper on Global coconut scenario - India forges ahead. This paper looks at: the coconut area, production and productivity in different states of India; the coconut cultivars grown in the country; the consumption pattern and demand projections for coconut products; the development strategy and programmes of India for coconuts; the Coconut Development Board's marketing strategy; the export growth of coconut products; and the role of the formation of farmers' collectives in the development of the coconut sector.

Koli and Patel (2014) in their paper on "Adoption of coconut production technology in Junagadh district of Gujarat studies the constraints of coconut farmers. Coconut is one of the important plantation crops of Gujarat state particularly in coastal area. Considering the area and production of coconut in Gujarat, Junagadh district ranks first. Therefore, study has been conducted to know the adoption level of coconut growers. The result revealed that majority of the coconut growers (66.67%) had medium level of overall adoption regarding recommended practices of coconut. Findings of relational analysis revealed that, in respect to adoption, it was found that education, experience in coconut cultivation, land holding, area under coconut, annual income, yield index,



extension participation, mass media exposure, risk orientation, scientific orientation, market orientation and innovativeness had positive and significant correlation with adoption level of coconut growers regarding recommended production technology of coconut crop. In case constraint it was found that majority (94.44%) of the respondents reported that the unavailability of healthy seedlings was a major problem while 89.81 per cent of respondents reported that non-availability of labours. Followed by 84.26 and 83.33 per cent of respondent had high cost of input and lack of market facilities, respectively.

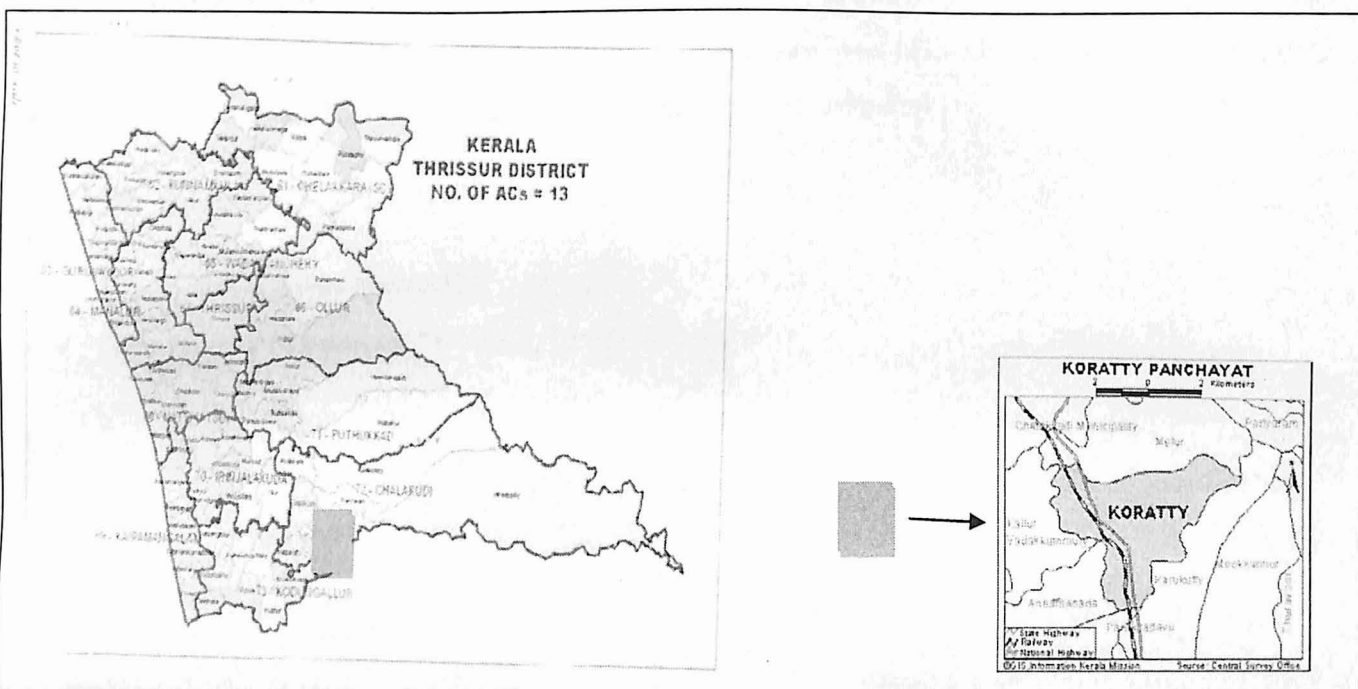
Thamban *et.al* (2014) paper on Evolving tender coconut sector in Kerala: need for upgradation in the value chain. This paper focuses on the tender coconut sector in Kerala. It highlights the varieties suitable for tender nut purpose; discusses the technologies for tender coconut processing and packaging; and describes the situation of tender coconut marketing in the state. Also presented are the success stories of one tender coconut producer and a coconut water processor.

Adam & James. report on —Moving Food Along the value chain| examines the aggregation, distribution, and marketing of eight diverse food value chains to glean practical lessons about how they operate, the challenges they face, and how they take advantage of emerging opportunities for marketing differentiated food products. A focus on the operational details of food value chains—business networks that rely on coordination between food producers, distributors, and sellers to achieve common financial and social goals—demonstrates how to facilitate moving differentiated products from regional food suppliers and buyers to customers.

## 1.5. METHODOLOGY

Location of the study:

Fig 1.1 Koratty panchayath of Thrissur district



The study was conducted based on primary data and secondary data. The primary data will be collected from the various actors involved in the value chain of virgin coconut oil located in the Thrissur district. Tools used for collecting primary data is prestructured questionnaire, secondary data was collected from the published reports , journals and magazine. Sample of 15- farmers 11- processing unit,5-distributers and 10-consumers will be selected. Value chain mapping tool, and percentage analysis were the major tools for stastical analysis.

## 1.6. OBSERVATION TO BE MADE

- Socio economic characteristic of the farmer
- Input supply system
- Value chain of virgin coconut oil
- Value created at each level of the chain
- Marketing channels of virgin coconut oil

### 1.7. SCOPE OF THE STUDY

The study helps to examine the activities of Golden Vintage Farmers Industry in the specific industry in order to deliver a valuable product for the market. In addition to this it helps to identify the actors involved in procuring , processing, marketing and distributing the final product to the consumers. Forward and backward linkages was also identified through mapping various activities undertaken by in Golden vintage farmers industry.

### 1.8. LIMITATION OF THE STUDY

- Time was a main constraint during the study.
- The study area was restricted to single District

## **CHAPTER-2**

### **GOLDEN VINTAGE FARMERS INDUSTRY – PROFILE**

#### **2.1 PROFILE**

The organization profile gives an overall performance, growth, and working of the firm over the years. The firm selected for the study is Golden Vintage Farmers Industry, Koratty.

#### **2.2 COCONUT INDUSTRY PROFILE**

##### **2.2.1 Global scenario**

The coconut is a benevolent tree, a nature's gift to mankind, as it is source of food, beverage, and oil seed, fibers, timber, and health products and also associated with mystery and omen in the life of people. The coconut tree provides clothing utensils and dwellings, there for, is an important source of earning livelihood to the people of coconut growing states, especially in costal areas. The coconut crop is grown in 12.5 million hectares of land which constituted about 0.7 % of net crop area of the world. The crop is grown in the coastal lowlands of continental South Asia and spread along the Indian and Pacific Ocean, the cultivation is mostly done by small and marginal farmers. Coconut is grown in more than 93 countries of the world in an area of 12.29 million hectares with a total production in terms of copra equivalent of 11.04 million MT. Indonesia (25.63%), Philippines (23.91%), India (19.20%), are the major coconut producing countries of the world.

Table 2.1 Top ten coconut producing countries in the World

Country	Production (tons)	Percentage of World production	Acreage under production (ha)	Yield / ha (tons)
Indonesia	21,565,700	34.9	3,231,710	6.67
Philippines	15,667,600	25.4	3,401,500	4.61
India	10,148,000	16.4	1,903,000	5.33
Sri Lanka	2,099,000	3.4	394,840	5.32
Brazil	1,973,370	3.2	284,058	6.95
Thailand	1,380,980	2.2	237,882	5.80
Vietnam	1,128,500	1.8	121,500	9.29
Mexico	1,004,710	1.6	155,713	6.45
PapuaNew Guinea	930,000	1.5	216,000	4.30
Malaysia	459,640	0.7	166,400	2.76
WORLD	61,708,358		11,864,344	5.20

Source: Advisor (hort) Horticulture Division, Ministry of Agriculture Government of India Coconut estimates

The demand for Virgin coconut oil is presently experiencing high market driven growth. There is an increasing consumer demand for Virgin coconut oil globally( especially in US and EU ) largely due to its therapeutic qualities, and for use as cooking oil, skin and massage oil, cosmetic products, functional foods etc. Philippines is the producer of Virgin coconut oil, largely for domestic consumption.

## 1.2.2 Coconut industry in India

India's population has crossed 1210 million and the country has to feed her entire population food products are becoming scarce day by day. In this context, coconut as a food and beverage crop is qualified to be placed at the epitome of food sector.

India was positioned as third in area, second in production, and first in productivity till recently with 1.89 million hectare of area, 15,730 million nuts of annual production and 8.303 nuts per hectare of productivity. The latest statistics released by the Horticulture Division of Ministry of Agriculture was in metric tones and the production figure was 10.84 million MT which in terms of whole nuts is equivalent to 16943 million nuts.

Table 2.2. Coconut area, production, and productivity of major coconut producing countries

Country	Area ('000 ha)	Production (million nuts)	Productivity (nuts/ha)
India	1895	16943.00	8965
Indonesia	3808	16332.24	4289
Philippines	3400	15510.00	4562
Sri Lanka	395	2619.00	6630

Source : FAOSTAT data, 2014

This production level gives a facelift to India and positioned her in the forefront of the world scenario. In productivity India was already enjoying the number one status. Now the country could retain the status with a higher level of productivity of 8965 nuts per ha. Indonesia is in the second position with 16.332 million coconuts, followed by Philippines and Sri Lanka with 15.510 million and 2.619 million nuts respectively.

In India there is distinct difference in pattern of distribution of coconut. The four southern states, Kerala, Karnataka, Tamil Nadu and Andhra Pradesh are the main coconut growing areas in the country which together account for 90% of area and 93% in production.

Table 2.3. Coconut area and production in various states

State	Area ('000ha)	Production (million nuts)
Andaman & Nicobar island	21.7	102.220
Andhra Pradesh	104.0	1042.521
Assam	18.8	157.8630
Chattisgargh	0.7	9.847
Goa	25.6	137.544
Gujarat	16.0	168.804
Karnataka	419.0	2339.811
Kerala	788.0	8239.496
Lakshadweep	2.7	62.520
Maharashtra	21.0	187.560
Nagaland	0.9	0.469
Odisha	51.0	296.970
Puduchery	2.1	31.260
Tamil Nadu	390.0	5770.596
Tripura	5.8	12.504
West Bengal	28.6	382.935
Total	1895.9	16942.920

Source: Advisor (hort) Horticulture Division, Ministry of Agriculture Government of India Coconut estimates

### 2.2.3 Coconut industry in Kerala

Coconut is one of the principal cash crops supporting millions of small and marginal farmers Kerala, the state which once enjoyed the premier position in coconut cultivation and production is now scarce of suitable land for expanding area under coconut. The share in area and production of coconut reached 42 and 37 percent respectively. There are about 3.5 million

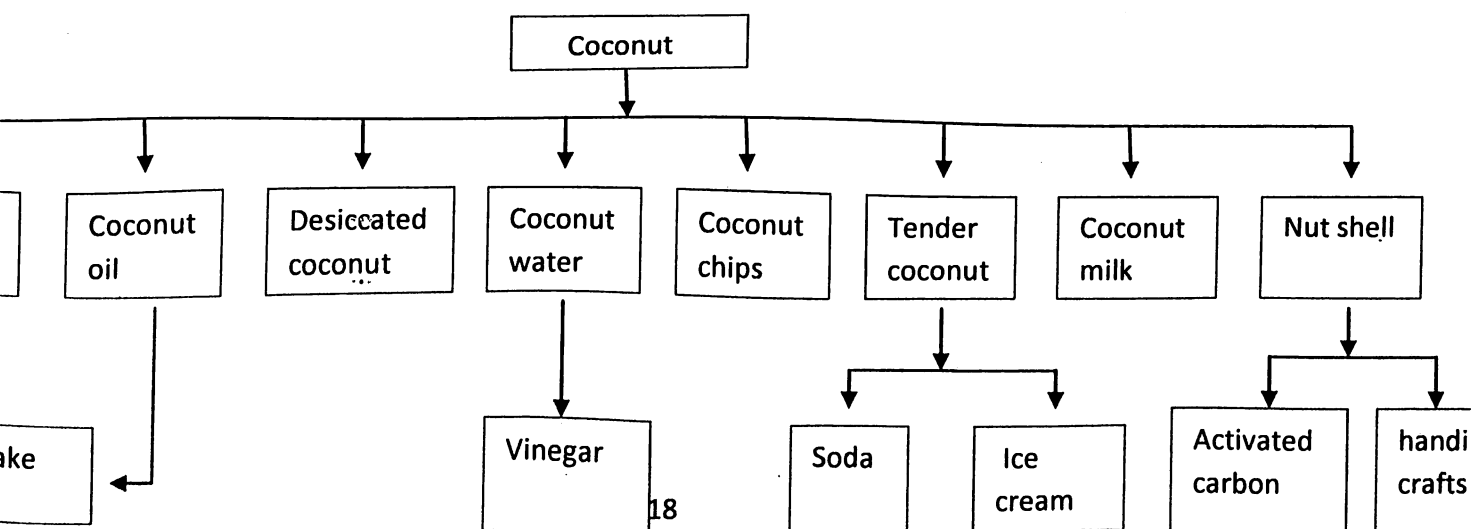
holdings and 42 lakh families in the state which depend on coconut for their livelihood. The contribution of the crop to the annual income of the state is around 15% and to the agricultural income is 35% of the 14 districts in the state, 11 are having area more than 11000 ha. The toppers in area and production are the district of Kozhikode and Malappuram and these districts possess more than 1 lakh ha under coconut. Total area under coconut in the state is 7.88 lakh ha.

Table 2.4. District wise area, production and productivity of Kerala state

Districts	Area ('000 ha)	Production (million nuts)	Productivity (nuts/ha)
Kozhikode	119166	8680	7284
Malappuram	108380	10630	9808
Kannur	78024	4790	6139
Thrissur	77509	5380	6941
Thiruvananthapuram	71376	5910	8280
Palakkad	57186	4170	7292
Kollam	56675	4120	7270
Kasaragod	54224	4160	7672
Ernakulam	44475	2350	5284
Alappuzha	39816	2570	6455
Kottayam	28185	1410	5003

Source : Remany Gopalakrishnan (2013). Global Scenario India Forges Ahead, *Indian Coconut Journal*, 64(7): 4-11.

### 2.3 Major coconut products





### **2.3. Major coconut products in the market**

A large number of coconut products are manufactured in the country which has both domestic and export market. Major coconut products are Virgin coconut oil, Coconut oil, Copra, Coconut milk powder, Coconut vinegar, Desiccated coconut, Activated carbon etc.

#### **2.3.1 Virgin coconut oil**

Virgin coconut oil extracted from fresh coconut meat without chemical processes is said to be the “mother of all oils”. It is rich in medium chain fatty acids, particularly lauric acid and is a treasure trove of minerals, vitamins, antioxidants and is an excellent nutraceutical. It has about 50% lauric acids, having qualities similar to mother’s milk, thus confirming its disease-fighting ability. When lauric acid enters human body it gets converted to monolaurin, which has the ability to enhance immunity. Several studies have confirmed that this compound has the ability to kill viruses including herpes and numerous other bacteria. Its antiviral effect has the ability to considerably reduce the viral load of HIV patients. VCO is not subjected to high temperatures, solvents or refinement procedures and therefore retains the fresh scent and taste of coconuts. It is rich in vitamin E, is non-greasy, non-staining and is widely used in soaps, lotions, creams and lip balms. The health benefits of VCO are second to none; ranging from speeding up body metabolic system and providing immunity against a horde of commonly prevalent diseases. Coconut palms are grown widely in the coastal tracts of the country. Copra, the dried kernel is the chief commercial product from coconut, which is mainly used for oil extraction. Copra normally has an oil content, varying from 65 to 72 per cent. Coconut oil is an important cooking medium in southern parts of the country especially in Kerala State. Besides, the oil has varied industrial applications. It is 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 a hair oil as it helps growth of the hair. As a massage oil it has a cooling effect on the body. Owing to these qualities coconut oil has a potential market in the country. Since the price of coconut oil in the international market is very much lower than the domestic price, the quality and attractiveness of consumer packs are important factors to compete in the world market. While the demand for coconut oil for cooking purpose is elastic, its demand as hair oil is inelastic. For the extraction of

oil from copra the common method still prevailing in our country is by using rotary chucks. But the efficient system of extraction of oil is by the use of expellers.

### **2.3.2 Coconut oil**

Coconut oil is used in the country as a cooking fat, hair oil, body oil and industrial oil. Coconut oil is made from fully dried copra having maximum moisture content of six per cent. Steam cooking of copra is also practised by some millers to enhance the quality and aroma of oil. Coconut oil is marketed in bulk as well as in packs ranging from sachets containing 5 ml. to 15kg tins. The branded coconut oil in small packs is mainly marketed as hair oil and body oil. There are several brands known for their superior grade oil which have export market throughout the world. India has unbeatable quality advantage in this sector. Refined coconut oil is also manufactured in the country for industrial uses. Refined coconut oil is mainly used in the manufacture of biscuits, chocolates and other confectionery items, ice cream, pharmaceutical products and costly paints. Generally, filtered coconut oil is used for cooking and toiletry purposes.

### **2.3.3 Coconut milk**

Coconut milk refers to the milky fluid, freshly extracted from the coconut kernel with or without added water and coconut cream to the high-fat cream-like material obtained from the coconut milk by either gravitational separation or centrifugation. Coconut milk was prepared by blending skim milk powder with coconut milk, obtained from freshly grated coconut and pasteurized at 70-72°C for 10min. It contains 6 percent skim milk powder and 9.65 percent total solids (Agrawal, *et al.* (1991). Coconut milk, a generic term for the aqueous extract of the solid coconut endosperm, plays an important role in the Cuisines of South East Asia as well as in other parts of the world.

### **2.3.4 Coconut milk cream**

Coconut cream is the processed milk extracted from fresh matured coconuts. This is an instant product, which can either be used directly or diluted with water to make various preparations such as curries, sweets, desserts, puddings, etc. it can also be used in the manufacture of bakery

products and for flavouring food stuffs. Processed and packed coconut cream has a shelf life of six months and once opened it should be stored in refrigerator for subsequent use.

### **2.3.5 Coconut vinegar**

Coconut vinegar is made from fermented coconut water and is used extensively as a preservative and flavouring agent in pickles, salads, sauces and many other condiments. Coconut vinegar is also made from the sap of the coconut tree and is similar to the fresh coconut water. Naturally fermented coconut vinegar is rich in minerals and vitamins such as Beta carotene, calcium, iron, magnesium, phosphorous, potassium and sodium. Raw, unfiltered organic coconut vinegar is similar to the one that is fermented naturally. Coconut vinegar helps in digestion and improves the quality of cooked meat and fish.

### **2.3.6 Activated carbon**

Activated carbon is an amorphous form of carbon which has been treated to produce a highly developed pore structure which gives the activated carbon its ability to absorb gases and vapours from gaseous phase and dissolved or dispersed substances from liquid phase. Activated carbon is also used for the purification of air and water, refining of sugar and production of electrodes. The process of activation is carried out in two stages. Firstly the coconut shell is converted into shell charcoal by carbonization process which is usually carried out in mud pits, brick kilns and metallic portable kilns. Coconut shell charcoal is activated by reaction with steam at a temperature of 900°C-1100°C under controlled atmosphere in a rotary kiln. The reaction between steam and charcoal takes place at the internal surface area, creating more sites for adsorption. The temperature factor in the process of activation is very important. Below 900°C the reaction becomes too slow and is very uneconomical. Above 1100°C the reaction becomes diffusion controlled and therefore takes place on the outer surface of the charcoal resulting in loss of charcoal.

### **2.3.7 Tender coconut water**

Tender coconut water is valued both for the refreshing drink and gelatinous kernel, which is a delicious food. The tender nut water is rich in potassium and minerals. Glucose content is maximum in seven months old nuts and hence the best stage for drinking.

### **2.3.8 Coconut chips**

Coconut chips, the thinly sliced crispy coconut meat which may be sweetened or salted and may come in handy as a ready -to- eat snack food. It was prepared by slicing the coconut meat of eleven to twelve month old nuts thinly into strands, soaked in syrup, drained and dried in a dryer or oven.

### **2.3.9 Desiccated coconut**

Desiccated coconut, the edible dried-out shredded coconut meat was prepared from fresh kernel of fully matured coconut and it is available in coarse, medium and fine grades and also in special grades such as threads, strips, granules etc. Good desiccated coconut is crisp, snow white in colour with a sweet, pleasant and fresh taste of coconut kernel. Desiccated coconut, a commercial product was manufactured from the white part of the meat after removing the brown parings. The meat is shredded or disintegrated and dried in hot air driers at 140-170oF to 2 per cent moisture content (fat 65-68 % and Solids nonfat 30-32%) and used in the manufacture of cakes, pastries and chocolates. Desiccated coconut is the disintegrated, white kernel of coconut processed under strict hygienic conditions and dried to a moisture content of below 3.0 per cent. It is a food product which is ready and fit for direct consumption.

## **2.4 GOLDEN VINTAGE FARMERS INDUSTRY – Organisation profile**

Golden Vintage Farmers Industry a proprietary concern is being promoted by Mr.K.A Jogy an industrialist in the year 2006. Golden Vintage Farmers Industry private limited company is engaged in the processing and sale of Virgin coconut oil.

Golden Vintage Farmers Industry an India based manufacturer of eco friendly organic extra virgin coconut oil that nourish the goodness of nature and support the good earth. Golden Vintage Farmers Industry very much proud to introduce coconut product from the God's own country, Kerala. Company offers an extensive range of natural coconut product such as Virgin coconut oil. Most importantly the company always meets the stringent quality demands of their global customer. Which the company high quality eco-friendly Natural coconut products are grown and produced without synthetic, fertilizer, pesticide or other agrochemicals, such environment friendly traditional farming helps nurture natural nutrients exactly what today's

health conscious consumers are seeking. Golden vintage farmers industry produced superior quality virgin coconut oil under the brand name of 'Farmer's extra virgin coconut oil ' and marketed all over the state and upcountry markets in India and abroad.

#### **2.4.1 Aim of golden vintage farmers industry**

- Avoid intermediaries and give maximum benefit to the coconut farmers
- Develop a meaningful and mutually beneficial partnership among the farmers

#### **2.4.2 Achievements of Golden vintage farmers industry**

- To building consumer confidence and ensuring the highest level of customer satisfaction
- Better communication for greater reach out
- Building a successful business relationship

#### **2.4.3 Main features of Golden vintage farmers industry**

- Unbeatable quality and safely standards
- Better communication for greater reach out
- International quality
- Promote the best business practices based on ethical values
- Ensure safe and health

#### **2.4.4 Product and Demand**

Virgin coconut oil is a naturally processed product from fresh coconut meat. It is the purest form of coconut oil, is water white in color and does not undergone any chemical processing during extraction

#### **2.4.5 Advantages of using virgin coconut oil**

- Used by doctors in the treatment of variety of disorders
- Good for treating aids patients
- It prevent heart diseases, stroke, hardening of arteries.
- Strengthen the immune system
- Protect against bacterial, viral & fungal infections

- Most suitable for cosmetics
- Act as a important functional food
- Significantly help you lose weight
- Optimize cholesterol
- Boost daily energy levels.

Golden Vintage Farmers Industry produce virgin coconut oil under the brand name of Farmers extra virgin coconut oil from the coconut flesh, the processed virgin oil have superior quality and marketed all over the state and upcountry markets in India and abroad. In the selection of and processing of coconut employs take strict quality control measure to ensure product superiority and purity. Social net work is the general advertising media of Golden vintage farmers industry. Social net work media plays the major role in the promotional strategies.

#### **2.4.6 Production process**

Coconuts are deshelled followed by pairing and dewatering pared coconuts are disintegrated by passing through coconut cutter having sieve plate through which shredded coconut gratings are expressed in a screw/ hydraulic press to extract fresh coconut milk. The coconut milk is filtered and passed through a high speed centrifuge wherein the coconut oil gets separated from the coconut milk. The coconut oil is then packed in consumer packs .

## CHAPTER 3

### VALUE CHAIN A THEORITICAL PERSPECTIVE

#### 3.1 INTRODUCTION

The idea of a value chain was first suggested by Michael Porter (1985) to depict how customer value accumulates along a chain of activities that lead to an end product or service. Porter describes the value chain as the internal processes or activities a company performs “to design, produce, market, deliver and support its product”. And “a firm’s value chain and the way it performs individual activities are a reflection of its strategy, its approach to implementing its strategy, and the underlying economics of the activities themselves.”

Most corporations define their mission as one of creating products or services. For these organization, the products or services generated are more important than any single step within their value chain. In contrast, other companies are acutely aware of the strategic importance of individual activities within their value chain. They thrive by concentrating on the particular activities that allow them to capture maximum value for their customers and themselves. These firms use the value chain approach to better understand which segments, distribution channels, price points, product differentiation, selling propositions and value chain configurations will yield them the greatest competitive advantage.

Porter identified primary and support activities as

The primary value chain activities are

- In bound logistics : the receiving and warehousing of raw material and their distribution to manufacturing as they are required.
- Operations : the processes of transforming inputs into finished products and services.
- Outbound logistics : the warehousing and distribution of finished goods.
- Marketing and sales : the identification of customer needs and the generation of sales.
- Service : the support of customers after the product and services are sold to them

These primary activities are supported by

- The infrastructure of the firm : organizational structure, control systems, company culture etc.
- Human resource management : employee recruiting, hiring, training, development, and compensation.
- Technology development: technologies to support value creating activities.
- Procurement : purchasing inputs such as materials, supplies, and equipment.

The broad approach of defining a value chain looks at the complex range of activities implemented by various actors (primary producers, traders, service providers) to bring a raw material through a chain to the sale of final product. The broad value chain starts from the production system of the raw materials and will move along the linkages with other enterprises engaged in trading, assembling, processing etc. The broad approach does not only look at the activities implemented by a single enterprise. Rather it includes all its backward and forward linkage, until the level in which the raw material is produced will be linked to the final consumers.

### **3.2 The three main concepts of value chain are;**

- 1) The Filiere approach (1988)
- 2) The conceptual framework elaborated by Porter (1985) and,
- 3) The global approach proposed by Kaplinsky and Gereffi et al(1999)

#### **3.2.1 Filiere Approach**

The 'Filiere' approach (filiere means thread or chain) includes various schools of thought and research traditions. Initially, the approach was used to analyse the agriculture system of developing countries under the French colonial system. The analysis mainly served as a tool to study the ways in which the agricultural production systems were organized in the context of developing countries. In this attention filiere frame work paid special attention to how local production systems were linked to processing industry, trade, export and final consumption.



The Fileire concept has therefore always encompassed a strong empirical perspective which was used to map the flow of commodities and to identify actors and activities. The rationale of filiere is similar to the broader concept of value chain presented above. However, the filiere mainly focused on tissues of physical and quantitative technical relationships, summarized in flow charts of commodities and mapping of transformation relationship.

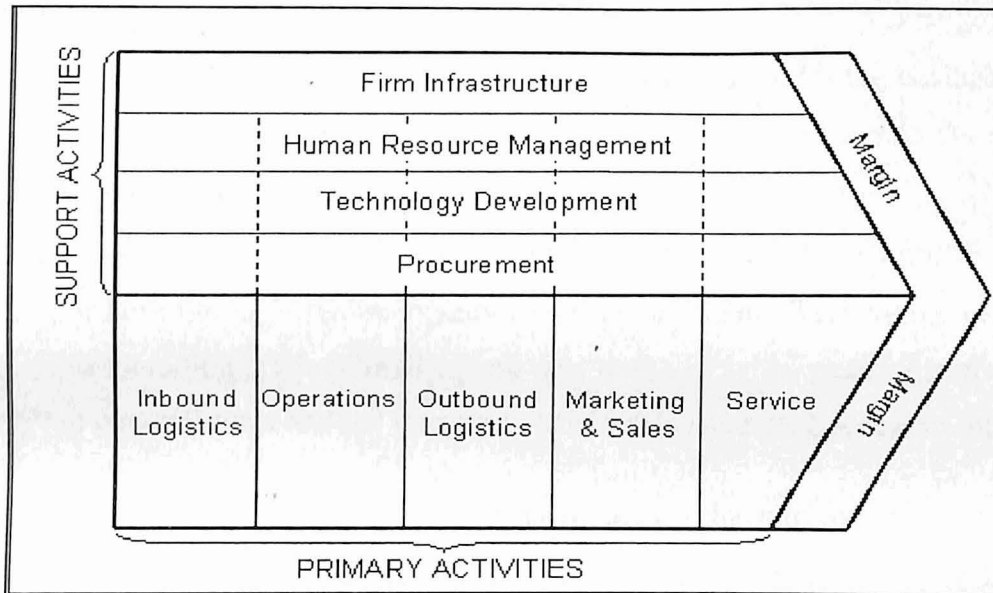
### **3.2.2 Porter's Framework**

The second research stream refers to the work of Porter (1985) on competitive advantages. Porter has used the frame work of value chains to assess how a firm should position itself in the market and in the relationship with suppliers, buyers and competitors. The idea of competitive advantage of an enterprise can be summarised as follows; how can a firm provide customers with a product or service of equivalent value compared with competitors, but a lower cost (strategy of cost reduction)? Alternatively, how can an enterprise produce a product or service that customers are willing to pay higher price for (strategy of differentiation)?

In Porter's framework the value chain provides a tool that firms can use to determine their source (current or potential) of competitive advantage. In particular, Porter argued that the sources of competitive advantage cannot be detected by looking at the firm as a whole. Rather, the firm should be separated into a series of activities and competitive advantage found in one (or more) of such activities. Porter distinguishes between primary activities, which directly contribute to add value to the production of product or services and support activities, which have an indirect effect on the final value of the product.

In the frame work of Porter the concept of value chain does not coincide with the idea of physical transformation. Porter introduced the idea that a firm's competitiveness does not relate exclusively to the production process .Enterprise competitiveness can be analysed by looking at the value chain which includes product design, input procurement ,logistics, outbound logistics,marketing, sales, after sales and support services such as strategic planning ,human resources management and research activities.

**Figure 3.1 Porter's value chain**



**Primary Activities:** Primary activities are those activities that are directly concerned with creating and delivering a product.

(a) *Inbound logistics:* Refers to goods being obtained from the organization's suppliers and to be used for producing the end product.

(b) *Operations:* Raw materials and goods are manufactured into the final product. Value is added to the product at this stage as it moves through the production line.

(c) *Outbound logistics:* Once the products have been manufactured they are ready to be distributed to distribution centres, wholesalers, retailers or customers. Distribution of finished goods is known as outbound logistics.

(d) *Marketing and Sales:* Marketing must make sure that the product is targeted towards the correct customer group. The marketing mix is used to establish an effective strategy, any competitive advantage is clearly communicated to the target group through the promotional mix.

(e) *Services:* After the product/service has been sold what support services does the organization offer customers. This may come in the form of after sales training, guarantees and warranties.

With the above activities, any or a combination of them are essential if the firm are to develop the "competitive advantage" which Porter talks about in his book.

**Support Activities:** Support activities assist the primary activities in helping the organization achieve its competitive advantage. They include:

(a) *Procurement:* This department must source raw materials for the business and obtain the best price for doing so. The challenge for procurement is to obtain the best possible quality available (on the market) for their budget.

(b) *Technology development:* The use of technology to obtain a competitive advantage is very important in today's technological driven environment. Technology can be used in many ways including production to reduce cost thus add value, research and development to develop new products and the internet so customers have 24/7 access to the firm.

(c) *Human resource management:* The organization will have to recruit, train and develop the correct people for the organization to be successful. Staff will have to be motivated and paid the 'market rate' if they are to stay with the organization and add value. Within the service sector such as the airline industry, employees are the competitive advantage as customers are purchasing a service, which is provided by employees; there isn't a product for the customer to take away with them.

(d) *Firm infrastructure:* Every organization needs to ensure that their finances, legal structure and management structure work efficiently and helps drive the organization forward. Inefficient infrastructure is waste resources, could affect the firm's reputation and even leave it open to fines and sanctions.

In Porter's framework the concept of value chain therefore has a strict business application. Consequently, value chain analysis mainly aims at supporting management decision and executive strategies. For example, a value chain analysis of a supermarket in Europe may point out that the competitive advantage of such a supermarket over competitors is the availability of exotic vegetables. Detecting the source of competitive advantage is valuable information for business purposes. Following on this finding, the supermarket is likely to strengthen the relationship with producers of exotic fruits and advertisement campaigns will pay special attention to such issues.

Instead of limiting the analysis of competitive advantage to a single firm, the firms activities are considered as a part of the larger stream of activities, termed 'the value

system'. A value system includes the activities implemented by all firms involved in the production of a good or service, starting from basic raw materials to those engaged in the delivery of the final product to consumers. The concept of value system is therefore broader compared the one of 'enterprise value chain'. However it is important to point out that in Porter's framework the concept of value system is mostly a tool for assisting executive management in strategic decisions.

### **3.3 The Global Approach**

More recently, the concept of value chains has been applied to the analysis of globalization (Gereffi and Korzeniewicz 1992; Kaplinsky 1999). This literature used the framework of value chain to examine the ways in which firms and countries are globally integrated and to assess the determinants of global income distribution. Kaplinsky and Morris (2001) observed that in the course of globalization, there has been a perception (usually well-justified) that the gap in incomes within and between countries has increased. They argue that value chain analysis can help to explain this process, particularly in a dynamic perspective.

Firstly, by mapping the range of activities along a chain, a value chain analysis breaks down total value chain earnings into the rewards that are achieved by different parties in the chain. A value chain analysis is the most accurate way of understanding the distribution of earnings. Other ways of viewing global distributional patterns provide only partial insights in to these areas. For example, trade statistics only provide data on aggregate, gross returns rather than on net earnings, and branch specific analyses (agriculture, industry, services) only capture part of the story.

Secondly, a value chain analysis can show how a firms, regions and countries are linked to the global economy. This will largely determine the distributional outcomes of global production systems and the capacity which individual producers have to build in order to upgrade their operations and thus to launch themselves onto a path of sustainable income growth.

In the value chain framework international trade relations are considered part of networks of producers, exporters, importers, and retailers, where by knowledge and relationships are developed to gain access to markets and suppliers. In this context, the success of developing countries and market actors in developing country lies in the ability of accessing these networks. A key contribution of this tradition is a well-developed theory of governance of globally integrated production system that is relevant to the power of lead firms to set standards that

define the terms on which producers participate in these systems. Particularly, Gereffi, Humphrey, and Sturgeon (2003) attribute the mode of governance of a value chain to a combination of complexity of transaction, ability to codify (or formally describe) transactions, and the competency of the supplier base, the combinations of which result in different coordination structures of value chain. According to this approach, low supplier competency is a key barrier to participation of the poor in globally integrated chains.

### **3.3.1 Importance of value chain analysis**

There are three main sets of reasons why value chain analysis is important in this era of rapid globalization. They are:

- With the growing division of labour and the global dispersion of the production of components, systemic competitiveness has become increasingly important.
- Efficiency in production is only a necessary condition for successfully penetrating global markets.
- Entry into global markets which allows for sustained income growth – that is making the best of globalization - requires an understanding of dynamic factors within the whole value chain.

Value chain analysis plays a key role in understanding the need and scope for systemic competitiveness. The analysis and identification of core competences will lead the firm to outsource those functions where it has no distinctive competences. Mapping the flow of inputs – goods and services – in the production chain allows each firm to determine who else's behaviour plays an important role in its success. Then, in those cases where the firm does not internalize much or most of the value chain in its own operations, its own efforts to upgrade and achieve efficiency will be too little effect. The same challenge is true for national or regional economic management – upgrading the performance of individual firms in a region may have little impact if they are imbedded in a sea of inefficiency.

The second reason why value chain analysis is important is that it helps in understanding the advantages and disadvantages of firms and countries specializing in production rather than services, and why the way in which producers are connected to final markets may influence their ability to gain from participating in global markets.

The third major reason why value chain analysis is important is that it helps to explain the distribution of benefits, particularly income, to those participating in the global economy. This

makes it easier to identify the policies which can be implemented to enable individual producers and countries to increase their share of these gains. This is an especially topical issue at the turn of the millennium and has captured the attention of a wide variety of parties. Invariably the debate is polarised between two views – globalization is good for the poor or globalization is harmful for the poor. Yet this is much too simplistic a perspective, since it is less a matter of globalization being intrinsically good or bad, than how producers and countries insert themselves in the global economy. Understanding why this is the case – and how value chain analysis can help both understand these dynamics (positive analysis) and then fashion an appropriate policy response (normative analysis) - requires a detour in the discussion, identifying the dangers arising from a harmful pattern of insertion into the global economy.

## CHAPTER 4

### VALUE CHAIN MAPPING OF COCONUT – A STUDY OF GOLDEN VINTAGE FARMERS INDUSTRY PRODUCT

#### 4.1 INTRODUCTION

The term value chain refers to the full range of activities that are required to bring a product (or service) from conception through the different phases of production to delivery to final consumers and disposal after use. The definition can be interpreted in a narrow and broad sense.

In the narrow sense, a value chain includes the range of activities performed within a firm to produce a certain output. This might include the conception and design stage, the process of acquisition of inputs, the production the marketing and distribution activities and performance after-sale services. All of these activities constitute the 'the chain' which links producers to consumers and each activity adds 'value' to the final product.

#### 4.2 VALUE CHAIN ANALYSIS OF COCONUT

After identifying the key value chain players and examining their functions, in Golden vintage farmers industry, next step is to outline the value chain. Hence an attempt is made here to map the various activities involved in, from the procurement to till it reaches in the hands of consumers. Value chain mapping and analysis are the keys to unlock process of gridlock and achieving maximum process effectiveness. The main purpose of value chain mapping and analysis is to create value that exceeds the cost of providing the product or service and generates a profit margin.

The main objective of the study is to map the different components and actors involved in the value chain of Virgin coconut oil.

### 4.3 STEPS IN MAPPING:

Here, mapping of value chain is done through following steps.

#### Step1. Mapping the core processes in the value chain

The first question that needs to be asked in any value chain analysis is as follows: What are the different (core) processes in the value chain? The first step is to find the core processes in value chain. As a rule of thumb, try to distinguish maximum 6-7 major processes that the raw material goes through before it reaches the final consumption stage. These core processes will be different, depending on the characteristics of the chain: industrial products undergo different phases than agro products or services.

#### Step2. Identifying and mapping the main actors involved in these processes

Once the main processes are mapped, we can move on to the actors. The second main question deals with this step: Who are the actors involved in these processes and what do they actually do? How to distinguish between actors depends on the level of sophistication the mapping exercise is trying to reach. The most straightforward distinction would be to categorize actors according to their main occupation, for instance, collectors are involved in collection, and producers are the ones that produce. This would be a starting point, but will not give sufficient information.

#### Step3. Mapping flows of products, information and knowledge

The processes, actors and specific activities are mapped. The reason for the existence of a value chain is that goods, services or information is passed on between different actors. To find out more about this topic is the aim of the following core question: What are the flows of products, information and knowledge in the value chain? Different flows go through every value chain. These flows can be both tangible and intangible: products, goods, money, information, services etc. Finding out what flows there are is one of the main objectives of any value chain analysis. Mapping these flows can be quite straightforward when it comes to products: one should simply follow the stages that the tangible product goes through, from raw material to final product. This is especially relevant when we try to find out what components are used to come to a final



product. Other - intangible - flows, like information and knowledge, might be more complicated to capture in a visual map. Be aware that these flows are often going both directions, for instance: a trader tells a farmer about product requirements; a farmer gives the trader information about product availability. The tools are provided will help to track down what kind of knowledge or information flows through a value chain. The role and position of the poor is crucial in this part of the mapping: do the poor participate in the exchange of knowledge?.

#### Step4. Mapping the geographical flow of the product or service

A very straightforward way of mapping is to actually make a geographical map, following the trail of the product or service you want to map. Start at the place of origin (for instance where it is cultivated) and see if you can map how the product travels from intermediary trader to wholesaler, retailer and final consumer. If possible you can use a map of the region and indicate the physical flow on it. Making this kind of map will enable you to capture a dimension of the product flow (volume, margin, number of actors) and show the locational or regional differences.

#### Step5. Mapping the value at different levels of the Value Chain

One of the core elements of value chain mapping is to map the monetary value throughout the chain. This is covered by the key question: How does the value change throughout the chain? Value is something that can be measured in many ways. The most straightforward depiction of a monetary flow would be to look at the value that is added by every step throughout the chain. Deducting the difference will lead to an overview of the earnings at the different stages. Other economic parameters are, amongst others, revenue, cost structures, profit and return on investment.

#### Step6. Mapping relationships

Mapping linkages between value chain actors starts with making an overview of the actors. A next step is to analyze what kind of relationship actors have. This is covered by the following core question: What types of relationships and linkages exist? Relationships can exist between different process steps (producer and trader) and within the same process (farmers to farmer). The relationships between different actors can best be mapped

in the part on finding a typology of actors, as covered by the second core question. Relationships or linkages between similar actors can be mapped according to basically 3 typologies:

a. Spot market relations

These are relations that are created 'on the spot', that means that actors make a transaction (including negotiations on price, volume and other requirements) with the duration and scope of that specific transaction. This is typical for transactions made on a fresh vegetables marketplace: buyer and seller meet, come to an agreement (or not) and break up the relationship. In related literature, these are also categorized as 'arm's length relationships'.

b. Persistent network relations

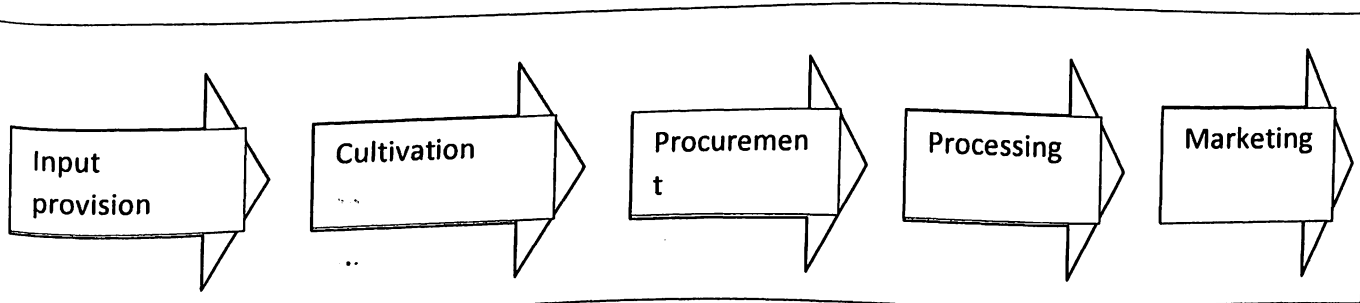
When actors have a preference for transacting with each other time and time again, we can speak of a persistent network relation. This comes with a higher level of trust and some level of interdependence. This relation can be formalized by contracts, but this is not a necessary.

c. Horizontal integration

This actually goes beyond the definition of a 'relationship', since both actors share the same (legal) ownership. One and the same organization (this can be an enterprise, or a cooperative) deals with different processes throughout the value chain. The ownership structure can be partial or full. In order to map these types of relationships, we use different lines and arrows.

#### 4.4 CORE PROCESSES IN THE VALUE CHAIN OF COCONUT

Fig 4.1 Core Processes in the Value Chain of Coconut



**4.4.1 Input provision** can be defined as the facilities provided by somebody or obtained something as input for the better cultivation of coconut. For example seedlings, fertilizers, pesticides etc. Cultivation can be defined as the caretaking of seedlings get to enough matured tree for high yielding varieties.

**4.4.2 Procurement** can be defined as the collection and storing of coconut.

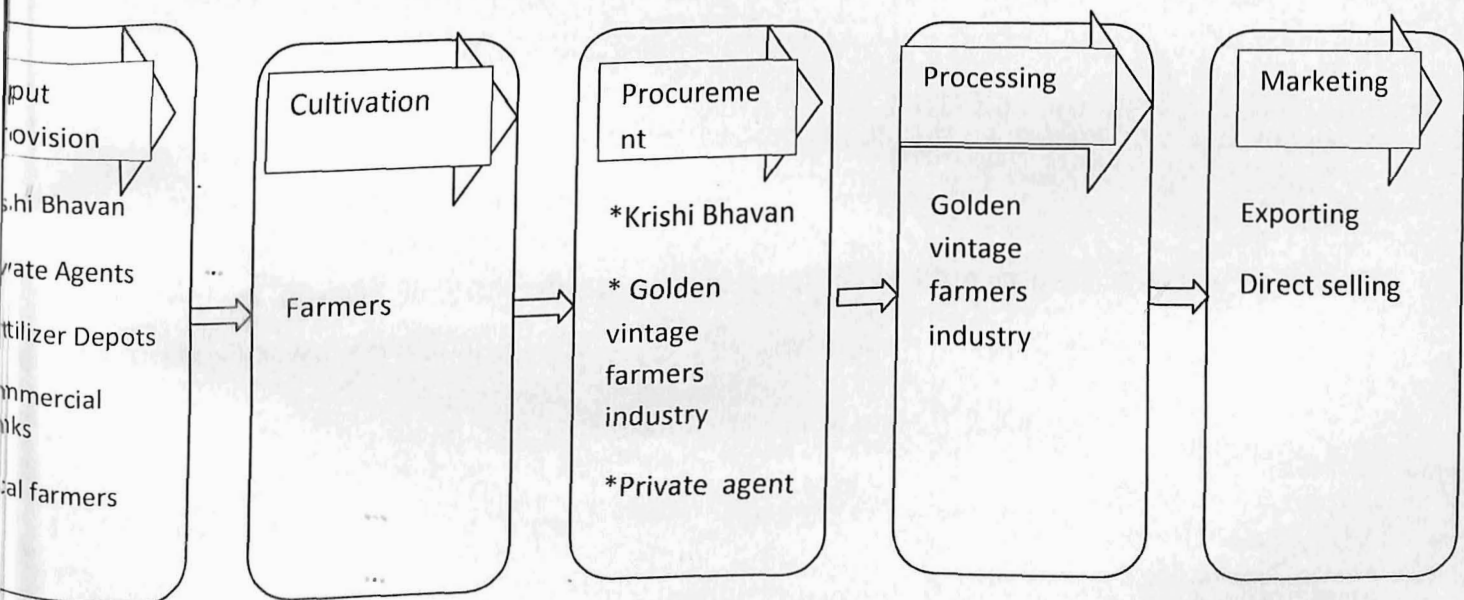
**4.4.3 Processing** means a change over of crop from one form to another form. For example production of value added products from coconut.

**4.4.4 Marketing** means the way of buying and selling the crop in a different kind of competitive market. Therefore, these are the core process of coconut value chain mentioned in the diagram above.

#### 4.5 ACTORS INVOLVED IN THE COCONUT VALUE -CHAIN

Once the core processes is identified the next step is to identify the actors that supports the core processes of value chain. Here not only identifying the actors their roles are clearly mentioned during mapping.

Fig 4.2: Actors Involved in the Coconut Value Chain



#### **4.5.1 Input provision**

Krishi Bhavan: Farmers are getting planting material and fertilizers at subsidized rate from Koratty Krishi Bhavan, it also provides better yield. Both organic and inorganic fertilizers are provided from Krishi Bhavan.

Fertilizer Depot: Majority of the farmers are buying the fertilizers from the Depot of FACT in Thrissur. Fertilizers And Chemicals Travancore Ltd. is a fertilizer and chemical manufacturing company in Kochi. Main products of the company are Factomphoss, Ultraphos, Ammonium Sulphate, Ammonium Phosphate, Caprolactum, Ammonia and other complex fertilizers. Gypsum, Nitric acid and Soda ash are major by products.

Commercial banks: Commercial banks play an important role in providing loans to the farmers. Farmers are not depending the money lenders for the credit purposes. In this panchayath Canara bank, Punjab National Bank, SBT, co-operative bank etc is providing loans to farmers.

Local farmers: Local farmers constitute another source of planting material to many of the farmers. Local farmers are playing a vital role as the source of planting materials to the farmers. Also they are the source of the organic manures like cow dung, litter, fish waste etc.

#### **4.5.2 Procurement**

Krishi Bhavan: Directly procure nuts from the farmers at current market rate and supply to kerafed. Procure at a rate of Rs 32/Kg.

Golden vintage farmers industry: directly procure raw nuts from farmers at a rate of current market rate. Procure at a rate of Rs 35/Kg.

Private agent : directly procure raw nuts from farmers at a rate of 32/Kg

#### **4.5.3 Processing**

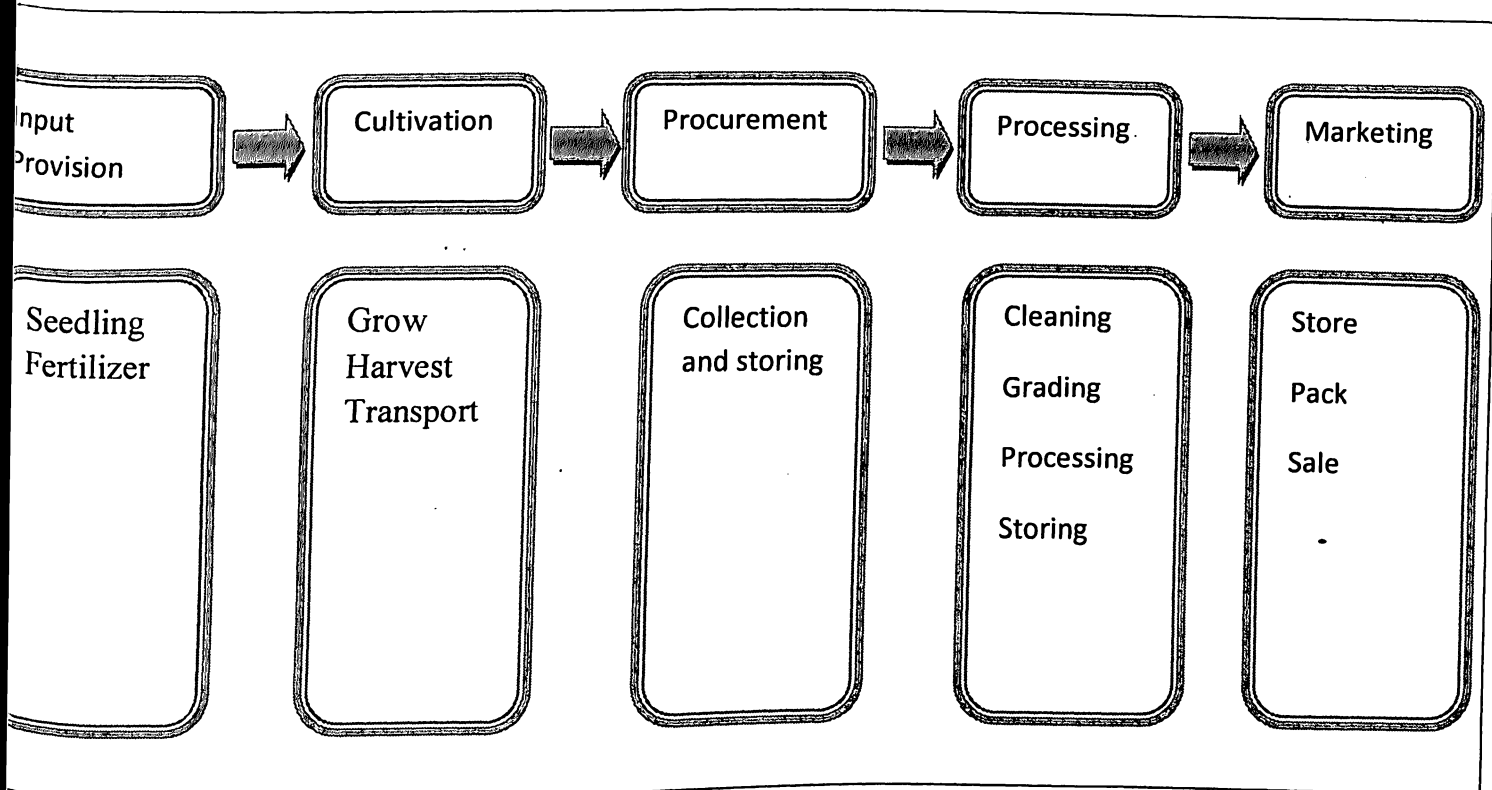
Golden vintage farmers industry is undertaking the processing of coconut. Value added products like virgin coconut oil, produced from tender coconut using modern technology.

#### 4.5.4 Marketing

Direct Marketing: Products are marketed directly to individuals and institution Exporting: Directly Exporting to the company outlets in UK, Australia, Sweden, New Delhi, Calcutta

#### 4.6 SPECIFIC ACTIVITIES UNDERTAKEN IN THE VALUE CHAIN OF COCONUT

Fig 4.3 Specific Activities Undertaken In the Value Chain of Coconut



**4.6.1 Input provision:** Input provision includes supply of planting material, fertilizers, pesticides and agricultural-tools. Block Panchayat office, Panchayat office and Krishi Bhavan are supporting the cultivation of Coconut. Farmers also depend upon private nurseries and fertilizer depots. Important varieties of coconut include Chavakkad green dwarf, Chavakkad orange dwarf, Tx D, local variety etc are used for planting. Fertilizers that commonly used by farmers are organic like cow dung, litter, fish waste, groundnut cake, neem cake and inorganic include bone meal only.

**4.6.2 Cultivation:** cultivation of coconut starts with planting of seedlings. The nature of preparation of land before planting depends upon topography of land, soil type. The size of pits for planting would depend upon soil types and water table. In loamy soils with low water table, pit size of 1m x 1m x 1 m is recommended. In sandy soils, the size of pits may be 0.75 m x 0.75 m x 0.75 m. The pits may be filled up with top soil to a height 60 cm below the ground level. Required spacing is 7.5 x 7.5 m.

Fertilizer application can be starts from 2 years after planting, and each seedling should give 15-25 gm cow dung. Inorganic fertilizer can be applied from 3 months after planting. Regular manuring from the first year of planting is essential to achieve higher productivity. Organic manure should be applied per palm per year with the onset of south west monsoon, when soil moisture content is high. Different forms of organic manures like compost, farm yard manure, bone meal, fish meal, blood meal, neem cake, groundnut cake etc. could be made use for this purpose. In addition to this the following Fertilizer Schedule is recommended.

The fertilizer schedule recommended for the palm at different stages is as follows:-

Table 4.1 Fertilizer requirement of young palms in relation to that of adult palms

Time after planting	Time of application	
	April-June	Sept-Oct.
	(Proportion of adults palm dose)	
3 months (1/10th of full dose)		1/10
1 year (1/3rd of full dose)	1/9	2/9
2 year (2/3rd of full dose)	2/9	4/9
3 year onwards (full dose)	3/9	6/9

Source: KAU POP

*Note:* Under irrigated conditions, the fertilizers can be applied in 3-4 equal split doses. In the case of low lying areas, apply fertilizer after water table recedes in one single dose or in two split doses as conditions permit. In all types of soils that are low in organic matter content (except

reclaimed clayey soils and alluvial soils), apply organic matter @ of 15-25 kg per palm per year during June-July from the second year of planting and adequate weeding should be done.

The nutrient dosages recommended for adult palms are given in Table 6.2.

Table 4.2 Fertilizer recommendation for coconut

		Quantity, kg/palm/annum		
		N	P <sub>2</sub> O <sub>5</sub>	K <sub>2</sub> O
1	General recommendation			
	(a) Average management	0.34	0.17	0.68
	(b) Good management	0.50	0.32	1.20
2	For reclaimed clayey soils ( as in Kuttanad)	0.25	0.35	0.90
3	Red loam soils (southern Kerala)	0.68	0.23	0.90
4	Hybrids & high yielding palms			
	(a) For irrigated areas	1.00	0.50	2.00
	(b) For rain fed conditions	0.50	0.32	1.20

Source: KAU POP

Harvesting of coconut take place Coconut palms in ideal conditions do not usually begin to produce coconuts until they are between four and six years of age. Coconut trees that grow in poor conditions, unfavourable weather, or in soil with high clay and sand concentrations may not produce coconuts for 15 or 20 years after being planted. A coconut takes approximately 12 months from when it is first produced to be ready for harvest. Generally a coconut without manuring can produce an average of 30-35 coconuts in a year and with manuring a coconut can produce 95-100 nuts. Transportation include carrying nuts to processing and Krishi Bhavan by farmers themselves.

**4.6.3 Procurement:** Procurement means the collection and storing of the Coconuts. Usually the coconut growers collect and store in their own house. Sometimes tender nuts are immediately sold to processing unit and Krishi Bhavan. Thus the risk of storing is reduced by this method.

During the time of study Krishi Bhavan procure coconut at the rate of 32/kg and processing unit is procuring at a rate of 35/kg which is higher than the government offer price.

#### 4.6.4 Processing:

Virgin coconut oil and premium coconut oil - is extracted using Direct Micro Expelling method. Direct Micro Expelling method uses a totally different approach to coconut compared to that of the copra industry. With DME take small- scale processing to the nuts rather than taking the nuts in debased form to a large scale processing plant. The oil produced with this method will have superior quality. The process is a continuous batch system that uses a cold pressing unit to directly extract Coconut Oil from freshly grated coconuts. Thus, DME does not undergo the copra making process. In DME, to prevent the growth of molds in the coconut, the oil is created within one and a half hours from the opening of the coconuts.

**4.6.5 Marketing:** value added products are marketed directly by the company under a common brand name Farmers extra virgin coconut oil. The products are available at factory outlet. Directly Exporting to the company outlets in UK, Australia, Sweden, New Delhi, Calcutta

#### 4.7 VALUE AT DIFFERENT LEVELS OF THE VALUE CHAIN

A core element of value chain mapping is to map the monetary value throughout the chain. The most straightforward depiction of a monetary flow would be to look at the value that is added at every step throughout the chain, providing an overview of the earnings at the different stages.

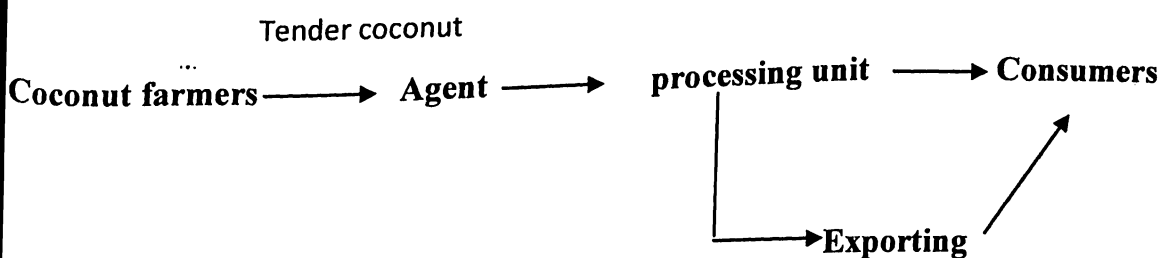


Fig 4.4 value chain of coconut through processing unit



Here there are 2 chains for marketing of products

1. Farmers → Private agent → Processing unit → consumers

2. Farmers → Private agent → Processing unit → exporting → consumers

**At farmer level,**

- Production cost of coconut per kilogram=Rs.28

a) Transportation cost = ₹ 6

b) Fertilizer and pesticides = ₹ 10

c) Labour cost = ₹ 12

.i.e. Total cost of production of coconut per kilogram = ₹ 28

- Selling price of coconut per kilogram = ₹ 35
- Margin = ₹ 35 - ₹ 28 = ₹ 7/kg

Here, farmer gets a margin of Rs.7 per kilogram. But it is not necessary that he always get such a margin. The price of coconut is highly fluctuating Farmer incurs a heavy loss during price fall. Transportation cost from the point of production to the point of Procurement is paid by farmer itself. High labour cost for their production

**At processing unit level**

- Buying price of coconut per kilogram = ₹ 35
- For producing 1L of Virgin Coconut oil, 16 coconuts are needed

**1kg of coconut= 4 nuts**

Therefore cost of production of 1L =  $4 \times 35 = ₹ 140$

- Cost of conversion to Virgin Coconut Oil = ₹ 20
  - a) Cost of labour = ₹ 5
  - b) Cost of electricity = ₹ 5

c) Cost of packaging = ₹ 5

d) Others = ₹ 5

Total = ₹ 20

Total cost of conversion to Virgin coconut oil = ₹ 140 + ₹ 20 = ₹ 160

• Transportation cost = ₹ 2

Total cost of production of Virgin Coconut oil = ₹ 160 + ₹ 2 = ₹ 162

Selling price of Virgin Coconut Oil (1 L) = ₹ 555

• Margin = ₹ 555 - ₹ 162 = ₹ 393

For producing 1L of Virgin Coconut Oil, Golden vintage farmers industry is getting a profit margin ₹ 393

### For exporting

Exporting cost including the shipment and trucks transportation cost ₹ 35

For each product cost for exporting takes

Virgin oil = ₹ 162 + 35 = ₹ 197

Exported rate of product (MRP of products in gulf countries)

Virgin oil = 12 dollar = ₹ 720

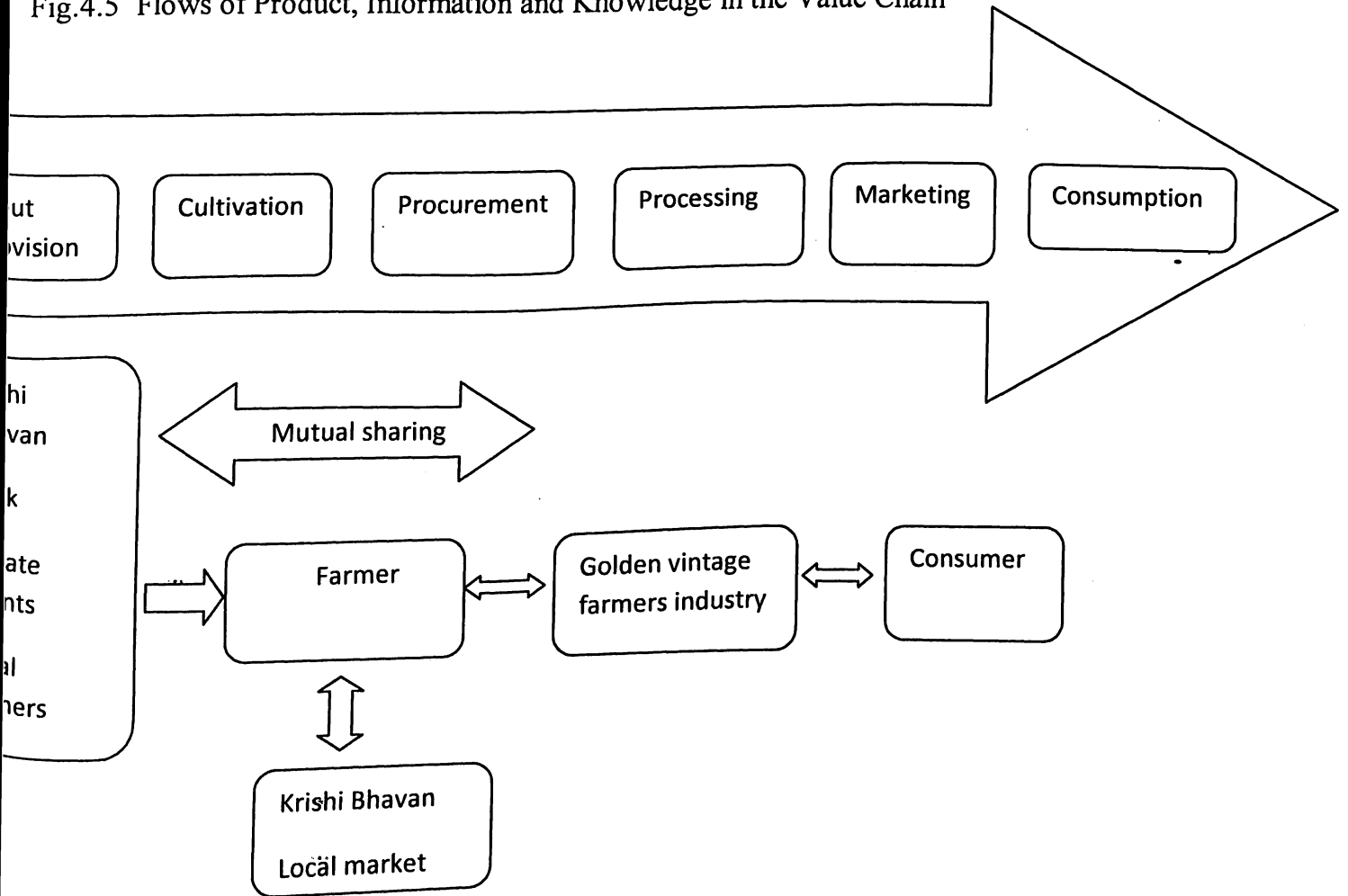
Profit margin of processing unit on product on exporting

Virgin oil = ₹ 720 - 197 = ₹ 523

## 4.8 FLOWS OF PRODUCT, INFORMATION AND KNOWLEDGE IN THE VALUE CHAIN

The reason for the existence of a value chain is that goods, services or information is passed on between different actors. Different flows go through every value chain. These flows can be both tangible and intangible: products, goods, money, information, services etc. Finding out what flows there are is one of the main objectives of any value chain analysis. Mapping these flows can be quite straightforward when it comes to products: one should simply follow the stages that the tangible product goes through, from raw material to final product. Other - intangible - flows, like information and knowledge, might be more complicated to capture in a visual map. In this step the various source of information about the product and inputs needed for the production are mapped here.

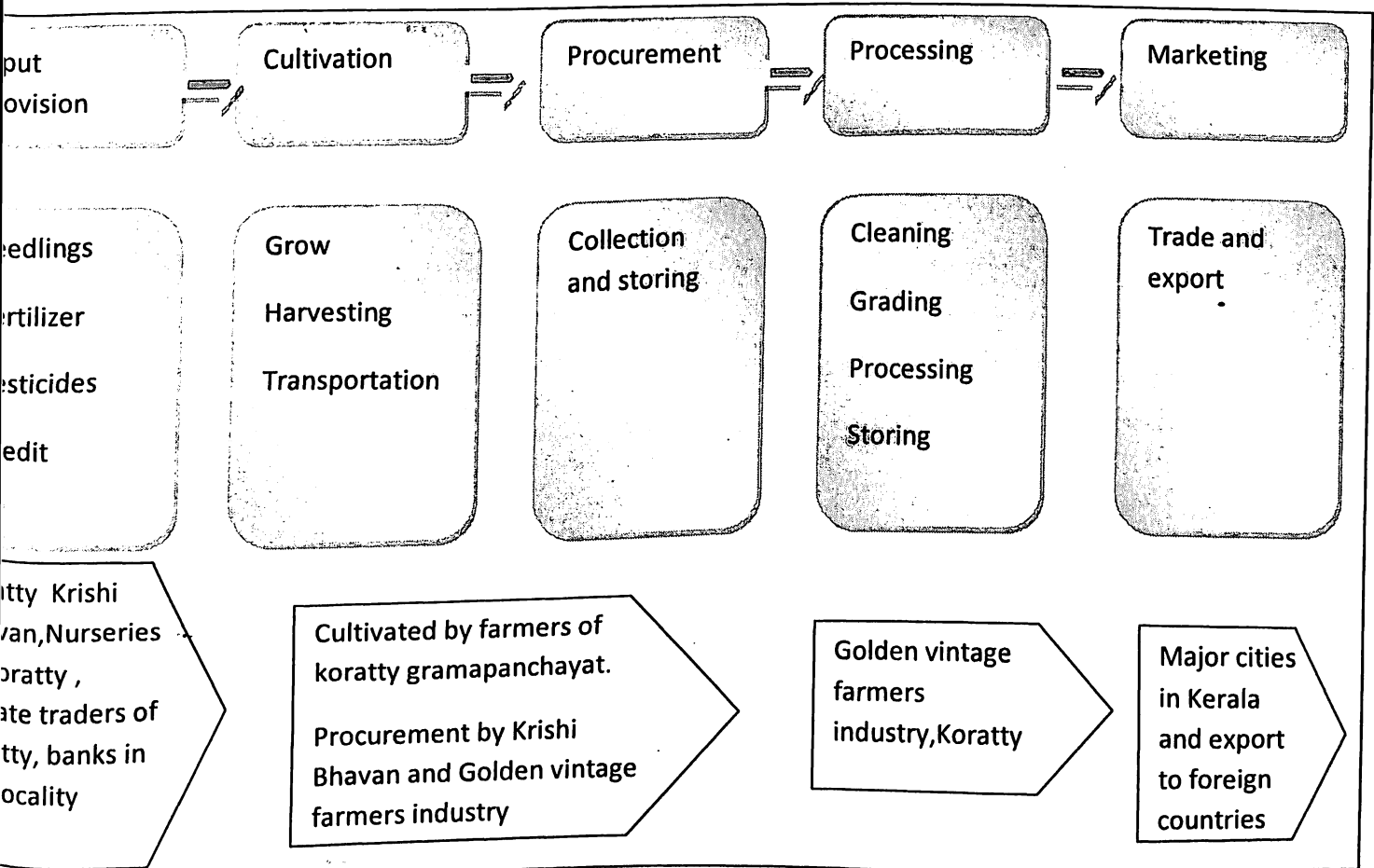
Fig.4.5 Flows of Product, Information and Knowledge in the Value Chain



The figure depicts the flow of product and information. The inputs like seedlings, credit, fertilizers from various sources mentioned above reaches the farmers. The farmers are getting information and knowledge about the inputs mainly from Krishibhavan and from local market. Krishibhavan is providing technical assistance to the farmers. The information about price is available to the farmers mainly from local market and other agents of different market in Thrissur., Krishibhavan is also providing technical assistance to farmers. Mutual sharing of information among all the actors of value chain is depicted in the figure. Information regarding the demand and supply of the products is obtained through the market survey. Based on the demand Golden vintage farmers industry produce products.

#### 4.8 GEOGRAPHICAL FLOW OF PRODUCT

Fig 4.6 Geographical flow of coconut



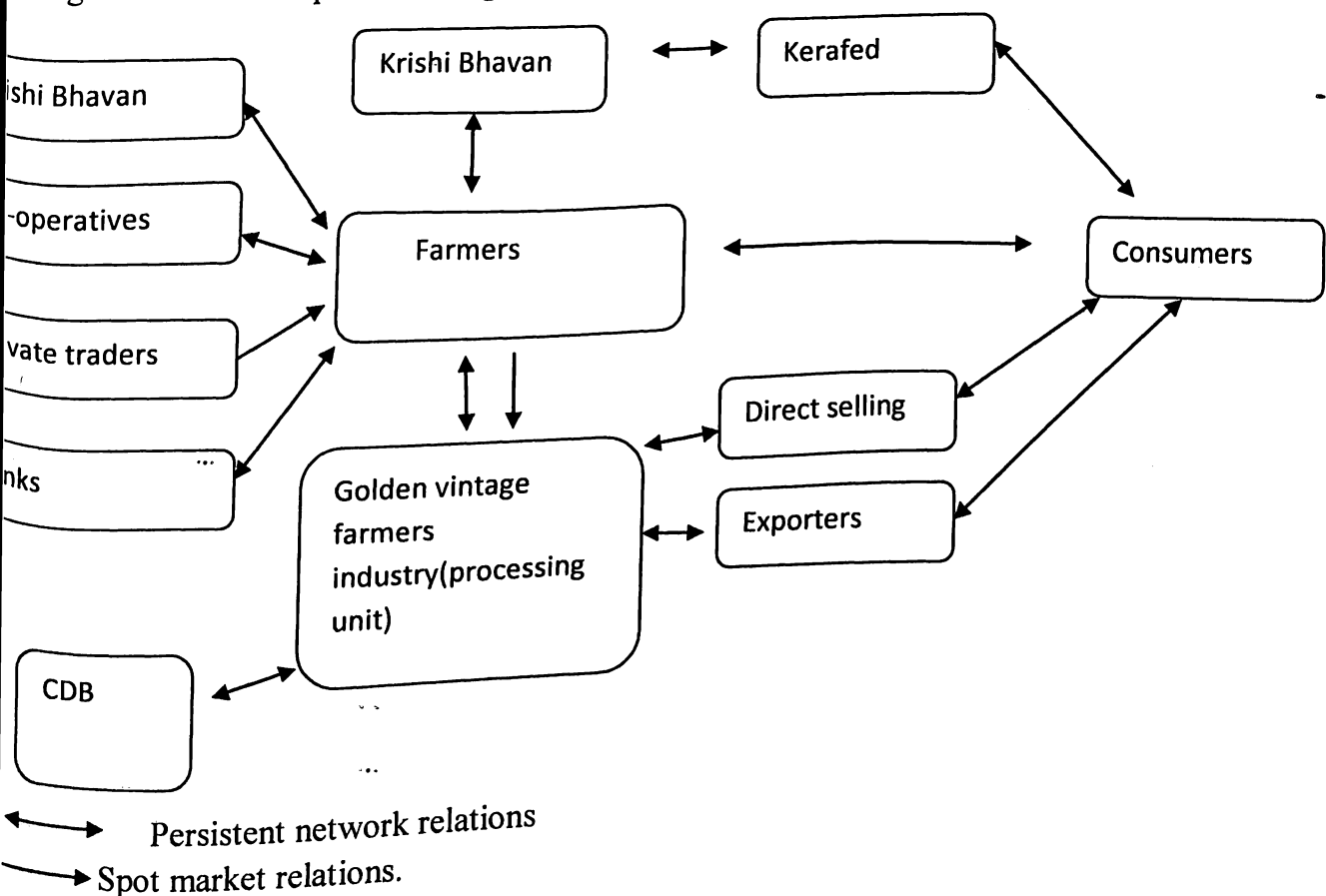
The above chart shows the mapping of the geographical flow of coconut at Koratty Panchayat. Seedlings needed for planting are obtained from Krishibhavan and private nurseries in and

around Koratty. Krishi Bhavan is an important source for obtaining seedlings and fertilizers at subsidized rate to farmers. Processing is done by Golden vintage farmers industry situated in Koratty. Marketing is done by directly to consumers and direct exporting. The company will transport the products to the distributors in different areas. Then the distributors will supply to the retailers. In Kerala, The company undertakes direct exporting to concern parties- According to their demand, by opening letter of credit in fair of the company also exporting outlets in UK, Australia, Sweden, New Delhi, Calcutta

#### 4.9 RELATIONSHIPS AND LINKAGES BETWEEN VALUE CHAIN ACTORS

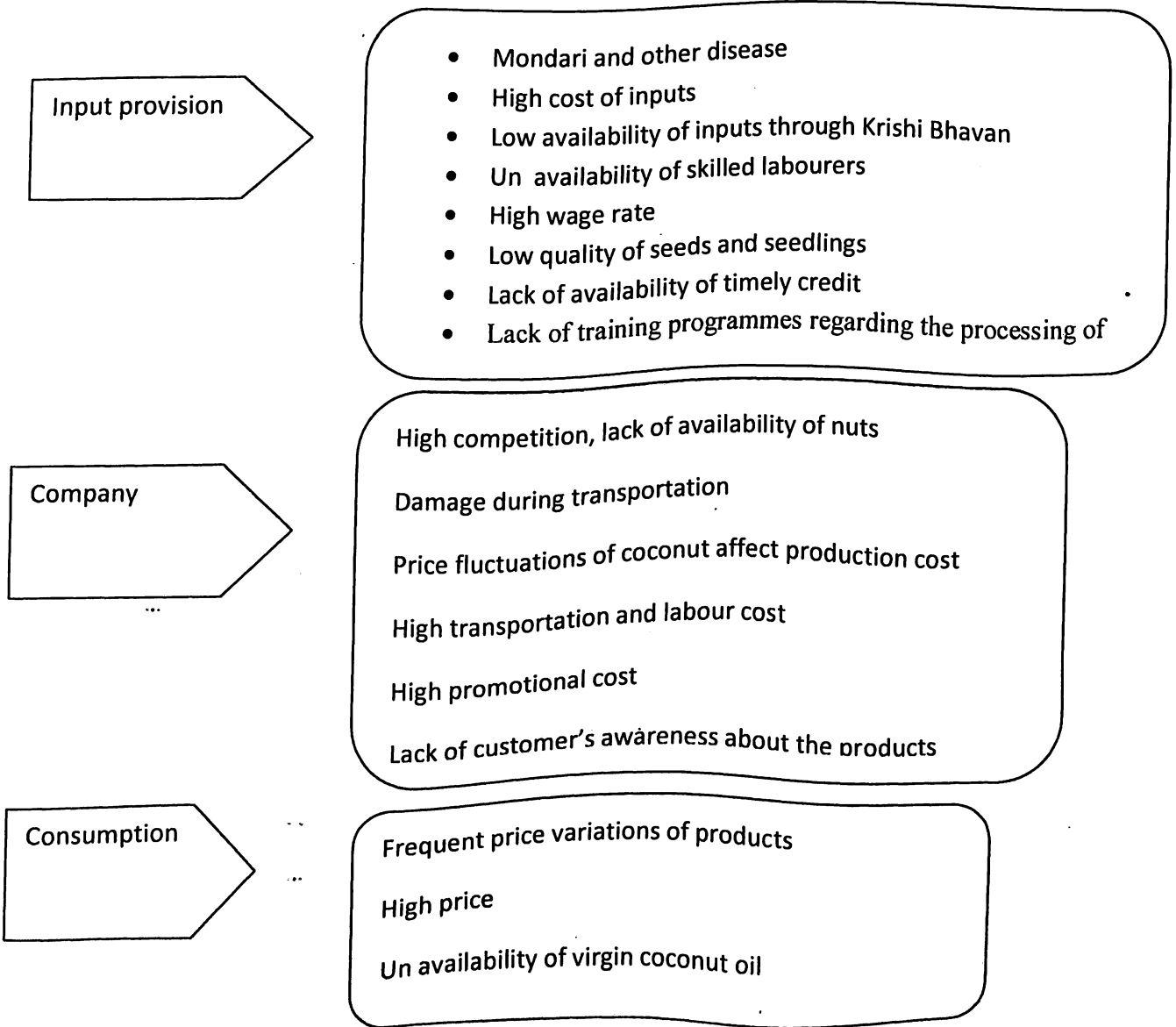
The below mentioned map clearly indicates the relationship between different actors in the value chain. The major limitation of this map is that it used only one type of arrows rather than different types to indicate different typology of relationship. Further research is going on to clearly bring out the legal and contractual relationships among the actors. The relationship between the nursery owners and the farmers are in a way perpetual in nature and they are continuously engaging the farmers.

Fig 4.7 Relationships and linkages between different actors



Majority of the linkages of the farmers are persistent network relations. Institutional linkage of the farmers with Commercial/cooperative Banks, krishibhavan is shown in dual headed arrows which show the persistent network relations. But private traders is having spot relations with farmers, beause they purchase inputs which is not available through Krishi Bhavan. Processing unit is maintaining persistent relations with wholesalers and retailers. Farmers are having both persistent and spot relations with processing unit. Some farmers regularly supply nuts to processing unit but someone's supply nuts only when the price offered by Krishibhavan is not affordable to farmers. Processing unit is having persistent relations with coconut development board and small farmer's agri consortium because they are the part of contributors of the share capital of company.

#### 4.10 CONSTRAINTS AT DIFFERENT LEVELS OF VALUE CHAIN



## CHAPTER 5

### SOCIO ECONOMIC CHARECTERSTICS OF FARMERS AND CONSUMERS

In this chapter, the details collected through the survey were tabulated and analysed in terms of specific objectives of the study. Sample sizes of 30 coconut growers, processing unit and, 5 retailers and 30 consumers were selected. The analysis includes socio economic status of the farmers, cultivation details, input details, production details, post harvest operations, and marketing details.

#### 5.1 Socio economic characteristics of farmers

##### 5.1 a) age of farmers

##### a) Age of Farmers

Table5.1 age wise classification of farmers

Age class	Frequency	Percent(%)
<30	01	06.7
30-40	01	06.7
40-50	02	13.3
50-60	06	40.0
>60	05	33.3
Total	15	100.0

Source: Compiled from survey

From table it is able to understand that the majority of farmers cultivating coconut have age above 50-60. Farmers above age 60 are also engaged in coconut but farmer below age 30 is only one person among the sample indicates lack of interest of youth in coconut cultivation. Farmers between 40-50 years age is having 20 % among the sample. It is easy to understand the fact that old and middle aged people are interested in farming.

### 5.1 b) Gender wise classification of farmers

Table 5. 2 Gender wise classification of farmers

Sl. No	Sex	No of respondents	Percentage to total
1	Male	15	100
2	Female	0	0
Total		15	100

Source: Compiled from survey

The above table reveals that majority of the farmers that surveyed is male. female person is not engaged in coconut cultivation which indicates the reluctance of females in farming

### 5.1 c) Educational qualification of farmers

Table 5.3 Educational wise classification of farmers

Sl. No	Education Level	No of farmers	Percentage to total
1	Illiterate	02	13.3
2	Lower primary	01	06.6
3	Upper primary	02	13.3
4	High school	05	33.3
5	Higher secondary	03	20.0
6	Graduation	02	13.3
7	Post graduation	00	00.0
Total		15	100

Source: Compiled from survey

From the table 33.3% of the people is having only high school education and also 2 persons among the sample is illiterate.20 % of the farmers are graduates which indicate interest of qualified persons in agricultural activities and 13.7 % is having only lower primary education.



## 5.1 d) Occupation pattern of farmers

Table 5.4 occupational pattern of farmers

Sl. No	Occupation	No of farmers	Percentage to total
1	Agriculture	08	53.3
2	Agricultural labourer	02	13.3
3	Business	02	13.3
4	Salaried employment	01	06.6
5	*Others	02	13.3
Total		15	100

Source: Compiled from survey \*Retired NRI



It is obvious that 53.3 % of the farmers were engaged in agriculture. 13 % of the people are those who have returned from gulf countries are now engaged in farming. Only one person is salaried employ 13% of farmers are agricultural labourer.

## 5.1 e) Family income of farmers

Table 5.5 Family income of farmers

Sl. No	Family income (in ₹)	No of respondents	Percentage to total
1	Below ₹ 25000	10	66.6
2	₹ 25000- ₹ 50000	05	33.3
3	Above ₹ 50000	0	0
Total		15	100

Source: Compiled from survey

It is evident from the table that majority of farmers (66%) had a monthly income of below ₹ 25000. out of the 30 farmers surveyed 5 people is having monthly income between ₹ 25000 and ₹ 50000 this is because there are persons having business, salaried employees and NRI and they do farming as subsidiary. From the table we get a clear picture majority is engaged in farming but they don't get enough income from farming.

#### 451 d) Land ownership

Table 5.6 Property ownership of land

Sl. No	Ancestral property	No of respondents	Percentage to total
1	Yes	15	100
2	No	0	0
Total		15	100

Source: Compiled from survey

From the table above it is clear that 100 % of the lands of the farmers are ancestral property. Farmers are continuing farming in the land where their ancestors do farming.

#### 5.1 e) Land holdings of farmers

Table 5.7 land holding details of farmers

Sl. No	Size of land holding	No of respondents	Percentage to total
1	Below 1 ha	04	26.6
2	1 ha -2 ha	08	53.3
3	Above 2ha	03	20.0
Total		15	100

Source: Compiled from survey

It is observed that 53 percent of the people were small farmers; 26 % of farmers were marginal farmers and remaining 20% were large farmers. It is clear that majority of farmers are small and marginal farmers .

## 5.2 Details of coconut cultivation

### 4.2 a) Years of experience of farmers active in coconut cultivation

Table 5.8 experience of farmers active in coconut cultivation

Sl. No	No of years active in coconut cultivation	No of respondents	Percentage to total
1	10-20	02	13.3
2	20-30	04	26.6
3	Above 30	09	60.0
Total		15	100.

Source: Compiled from survey

From the table it is clear that majority farmers (60%) are engaged in coconut cultivation more than 30 years. Only 26 % of farmers in the sample is engaged in coconut cultivation up to 30 years and remaining 13% of sample engaged in coconut cultivation recently.

## 5.2 b) Size of land holding of farmers in coconut cultivation

Table 5.9 Area under coconut cultivation (owned)

Sl. No	Area	No of farmers	Percentage to total
1	Below 1 acre	01	06.7
2	1-2 acre	02	13.3
3	2-3 acre	01	06.7
4	3-4 acre	04	26.7
5	4-5 acre	05	33.3
6	Above 5 acre	02	13.3
Total		15	100

Source: Compiled from survey

All the farmers have their own land for cultivation. Most of the farmers engaged in coconut cultivation have land size between 4-5 acre. Least is for land below 1 .

## 5.2 c) Total number of coconut palm

Table 5.10 No of coconut palm cultivated by farmers

Sl. No	No of coconut palm	No of respondents	Percentage to total
1	Below 100	04	26.7
2	100-150	02	13.3
3	150-200	06	40.0
4	Above 200	03	20.0
Total		15	100

Source: Compiled from survey

From the table it is clear that majority (40%) of the farmers had coconut palm in between 150-200. 26 % of farmers had palms below 100 and the share of palms more than 200 is only 20 percent.

## 5.2 d) Number of yielding palm of farmers

Table 5.11 No of coconut palm yielding

Sl. No	No of coconut palm yielding	No of respondents	Percentage to total
1	Below 100	03	20.0
2	100-150	04	26.7
3	150-200	06	40.0
4	Above 200	02	13.3
Total		15	100

Source: Compiled from survey

From the table we can observe that majority of farmers (40%) got an yield in between 150-200 coconut trees. The share of farmers who got a yield in the range of 100-150 is 26 percent. The farmers who got a yield above 200 are only 13 %.it is clearly understood that majority of the palms of farmers are good yielding.

## .2 e) Source of irrigation of farmers

Table 5.12 Sources of irrigation for cultivation

Sl. No	Source of irrigation	No of respondents	Percentage to total
1	Owned well	07	46.7
2	Canal	03	20.0
3	Rain water	00	00.0
4	Bore well	05	33.3
5	Pond	00	00.0
Total		15	100

Source: Compiled from survey

According to the table majority of farmer 46 % is having well for irrigation.33 % is having bore well and 3 farmers depend on canal (Kannoli canal) for irrigation.

## 5.2 f) Cost of cultivation of coconut .

Table 5.13 Average cost of cultivation of coconut per year

Sl. No	Cost of cultivation (in ₹ )	No of respondents	Percentage to total
1	Below 10000	04	26.7
2	10000-20000	06	40.0
3	20000-30000	02	13.3
4	Above 30000	03	20.0
Total		15	100

Source: Compiled from survey

From the table majority of farmers (40 %) have average cost of cultivation between 10000-20000 and 26 % have cost of about 10000.the share of cost above 30000 is 20 %.from the table it is clear that majority of farmers have high cost for cultivation.

## 5.2 g) Volume of production of farmers

Table 5.14 Coconut production (nuts/tree/year)

Sl. No	Number of nuts	No of respondents	Percentage to total
1	Below 50	03	20.0
2	50-100	09	60.0
3	100-150	02	13.3
4	Above 150	01	06.7
Total		15	100

Source: Compiled from survey

From the table we can observe that majority of the palms (60%) have nuts between 50-100.20 percent of farmers got an yield of below 50 nuts per tree. the share of farmers who get a yield of 100-150 is 13 percent and those who got more than 150 nuts is 6 percent.

### 5.3 Input details

#### 5.3 a) Source of inputs

Table 5.15 Details of sources of inputs for cultivation (%)

Input source	No of respondents			
	Fertilizer	Pesticides	Seedlings	Agricultural implements
Private shops	05(33.3)	06(40.0)	02(13.3)	11(73.3)
Krishi Bhavan	06(40.0)	05(33.0)	06(40.0)	04(26.7)
Local farmers/farmers	03(20.0)	00(0.0)	04(26.7)	00(00.0)
Private nurseries	01(06.7)	04(26.7)	03(20.0)	00(00.0)
Total	15(100)	15(100)	15(100)	15(100)

Source: Compiled from survey

Note: Figure in bracket indicate percentage to total

From the table it is clearly defined the source of inputs. Majority (40%) of the inputs like fertilizer and pesticide is obtained from Krishi Bhavan. local farmers also provide organic fertilizer whose share is 10 percent in the sample. Pesticides and agricultural implements are obtained from the private shops.

### 5.3 b) Details of loan taken by farmers

Table 5.16 details of loan taken by farmers (%)

Sl. No	Details of loan	No of respondents
1	Loanee farmers	06(40)
	Non loanee farmers	09(60)
	Total	15(100)
2	Source of credit	
	PNB	01(16.7)
	SBT	01(16.7)
	Canara bank	02(33.3)
	Co-operative society	02(33.3)
	Total	06(100)

Source: Compiled from survey

Note: Figure in bracket indicate percentage to total

From the table 60 % of farmers are non loanee farmers and 40 % are loanee farmers. The major source of credit is co-operative society (33%) and farmers equally depend on canara bank and SBT have 16 percent each.



### 5.3 c) Reason for taking loan

Table 5.17 Reason for taking loan

Sl. No	Reasons	No of respondents	Percentage to total
1	Farming	01	16.7
2	Consumption	03	50.0
3	Marriage	00	00.0
4	Repaying old debts	01	16.7
5	House maintenance	01	16.7
Total		06	100

Source: Compiled from survey

According to the above table majority farmers (50%) had taken loan for consumption only 1 farmers taken loan for farming. This indicates farmers are taking loan for non productive purposes. 16 percent of farmers taken loan for repaying old debts and 16 percent for house maintenance.

### d) Amount of credit taken by farmers

Table 5.18 Amount of credit taken by farmers

Sl. No	Amount of credit(₹)	No of respondents	Percentage to total
1	Below ₹ 2 lakhs	02	33.3
2	₹ 2- ₹ 4 lakhs	02	33.3
3	₹ 4- ₹ 6 lakhs	01	16.7
4	Above ₹ 6 lakhs	01	16.7
Total		6	100

Source: Compiled from survey

In the above table 33 % of farmers took loan amount up to ₹ 4 lakhs. Out of 6 loanee farmers farmers had taken loan amount below ₹ 2 lakh.

## 5.4 Marketing Details

### 5.4 a) Self consumption and marketable surplus

Table 5.19 Details of self consumption and marketable surplus(%)

No of nuts per year	Self consumption	Marketable surplus
Below 4000	15(100)	02(13.3)
4000-5000	0	02(13.3)
5000-6000	0	03(20.0)
Above 6000	0	08(53.3)
Total	15(100)	15(100)

Source: Compiled from survey

Note: Figure in bracket indicate percentage to total

It is observed from the table that 15 farmers consumed below 4000 nuts in a year. Majority of farmers (53%) are having marketable surplus of 6000 and above, 20 % of farmers are having surplus of 5000-6000 nuts. Only 13 % is having marketable surplus up to 4000 nuts.

### 5.4 b) Marketing channels of farmers

Table 5.20 marketing channels of farmers

Sl. No	Marketing channel	No of respondents
1	Krishi Bhavan	15
2	Processing unit	10
3	Local market	12
4	Private traders	14

Source: Compiled from survey

Table shows the marketing channels of farmers. Framers depend on more than one channel for marketing

#### 5.4 c) Fixing pricing of coconut

Table 5. 21 Mode of price fixing by farmer .

Sl. No	Mode of pricing	No of respondents
1	Fixed by Krishi Bhavan	12
2	Fixed by Processing unit	13
3	Local market	08
4	Depending on newspaper	09

Source: Compiled from survey

Based on the marketing channel the product is priced differently. Majority of farmers depended on more than one source for price fixation.

#### 5.4 d) Source of information regarding the price of coconut

Table 5.22 Source of information

Sl. No	Source of information	No of respondents
1	Krishi Bhavan	14
2	News paper	18
3	Television	10
4	Magazine	06
5	Local market	20

Source: Compiled from survey

Majority of farmers depend on more than one source for information.

#### 5.4 e) Member of any co-operatives

Table 5.23 Membership in co-operatives by farmers

Sl. No	Membership in co-operatives	No of respondents	Percentage to total
1	Yes	12	80
2	No	03	20
Total		15	100

Source: Compiled from survey

From the table majority of farmers (80%) were having membership in societies and remaining 20% were not having membership.

From the table majority of consumers (50%) comes under the category of age 40-50 and least comes under 50-60 category of age.

## Socio economic characteristics of consumer

### 5.5 a) Gender wise classification of consumers

Table 5.24 Gender wise classification of consumers

Sl. No	Sex	No of respondents	Percentage to total
1	Male	04	40
2	Female	06	60
Total		10	100

Source: Compiled from survey

Majority of the buyers 40% of coconut products is male and 60 % is female

### 5.5 b) Educational qualification

Table 5.25 Educational qualification wise classification of consumers

Sl. No	Education Level	No of respondents	Percentage to total
1	Illiterate	00	00
2	Secondary	02	20
3	Graduation	06	60
4	Post graduation	02	20
Total		10	100

Source: Compiled from survey

Majority of consumers is having graduation 60% and 20 % each secondary and post graduation.

### 5.5 c) Income of consumers

Table 5.26 Income wise classification of consumers

Sl. No	Family income (in ₹ )	No of respondents	Percentage to total
1	Below ₹ 25000	02	20
2	₹ 25000-50000	06	60
3	Above ₹ 50000	02	20
Total		10	100

Source: Compiled from survey

The users of products are high class customers. From the table majority of the consumers are having income between ₹ 25000 and ₹ 50000. 20 % consumers are having income below ₹ 25000 and above ₹ 50000

### 5.5 d) Frequency of purchase

Table 5.27 frequency of purchase of products by consumers (%)

Sl. No	Product	Frequency of purchase		Total
		Regular	Occasionally	
1	Virgin coconut oil	04(40)	06(60)	10(100)

Source: Compiled from survey

Note: Figure in bracket indicate percentage to total

From the above table 40 % of consumers are regular buyers and 60% of consumer are occasionally buyers of virgin coconut oil. They mainly use the product as hair oil and for baby oil .

### 5.5 e) Reasonability of price

Table 5.28 Reasonability of price classification(%)

Category	No. of respondents for virgin oil
Reasonable	03(30)
Not reasonable	07(70)
Total	10(100)

Source: Compiled from survey

Note: Figure in bracket indicate percentage to total

It is clear from the table that the price of virgin oil and is not reasonable.

### 5.5 d) Source of information regarding products

Table 5.29 Source of information about products

Media	No. of respondents
Direct	10
Newspaper	02
Friends	03
Relatives	03

Source: Compiled from survey

Majority of consumer depend on more than one source. Major source is through companies direct selling with consumers.

## 5.5 e)\* Market awareness about the products

Table 5.30 Market awareness of 30 consumers about the products

Product	Awareness				
	Completely aware	Mostly aware	Moderately aware	Slightly aware	Not aware
Virgin coconut oil	2	2	3	2	1

Source: compiled from survey

\*note: all the 10 consumers surveyed for market awareness of all products prepared by the company

From the above table most of the consumers are moderately aware about the virgin coconut oil.

### 5.5 Conclusion

Majority of the farmers depend on Krishi bhavan for marketing of their products. The inputs that they received from the Krishi bhavan are limited but the cost of inputs in private shops is very high. Lack of consumer's awareness regarding the value added products of coconut reduces the sales of processing unit. To create awareness the company have to spend a lot on promotion. The fluctuations in prices of coconut procured will affect the production.



## CHAPTER 6

### SUMMARY OF FINDINGS AND SUGGESTION

This study was initiated to analyze “Value Chain Analysis of Virgin Coconut Oil” particularly in Thrissur district. The focus of the study was to, identify various components in value chain of coconut, linkages among different actors in coconut production and benefit distribution to them, the procurement, processing and marketing operation of virgin coconut oil in Thrissur district and understand the different cost and returns involved in the each step of the value chain of virgin coconut oil. The sampling frame taken for the analysis is 15 Farmers, 1 Processing units, 1 private agent and 10 Consumers. The data were generated by individual interview using structured questionnaires. This was supplemented by secondary data collected from different published and unpublished sources. The main market participants for virgin coconut oil value chain in the District during the survey period were farmers, processors, agents and consumers. Besides, a significant amount of virgin coconut oil produced is channeled directly to consumers from processors. The virgin coconut oil marketing performance was also measured using marketing margins complemented with analysis of costs and gross profits generated by different value chain actors.

From the study help to know about different actors in the value chain of virgin coconut oil and also various costs involved in it. Processing unit procuring coconut from farmers and agent at rate of ₹ 35/kg. They incur a cost at ₹ 162/l for processing, after processing institution have sell virgin coconut oil at ₹ 555/l to the consumers and export to foreign countries at ₹ 644/l.

From the study it was revealed that there was a high export potential of virgin coconut oil in foreign market. The problem like less advertisement, high price and lack of awareness about the product it leads to the reduction in local sale.

A value chain is a chain of activities. Product pass through all activities of the chain in order and each activity products gain some value. The chain of activities gives the products more added values of all activities.

Mapping is the process of making a pictorial representation of the value chain analysis. Mapping the value help us to map, analyze and study the core process of coconut value chain. The study

entitled “value chain analysis of coconut – a study on Golden Vintage Farmers Industry“was carried out with the objectives of identifying and map the value chain of coconut through the company and understands the constraints and opportunities of different actors in the value chain.

The major findings and emanating conclusions are summarized below

### **6.1 Findings of the study**

The major findings of the study include mapping the value chain of coconut and constraints faced by various actors

Mapping the value chain of coconut – a study on Golden Vintage Farmers Industry

It includes 6 steps. Such as

- Map the Core processes in the value chain of coconut

Input provision, cultivation, procurement, processing and marketing and consumption are the core process in the value chain.

- Mapping the main actors involved in the process

Farmers, Krishi Bhavan, processing unit, private nurseries, and private agent are the main actors involved in the value chain.

- Mapping the specific activities undertaken by actors in the value chain

The specific activities undertaken by the actors are supply of inputs, grow, harvest, transport, collection, grading, conversion of coconut into value added products, sale of products and consumption.

- Mapping flows of product, information and knowledge in the value chain

The flow of information and knowledge in the coconut value chain are mutual information sharing between farmers, input providers and other actors of value chain. The farmers are getting information and knowledge about the inputs mainly from Krishi bhavan and from local market .Krishi bhavan is providing technical assistance to the farmers. The information about price is available to the farmers mainly from local market and other agents of different market in

Thrissur. Krishibhavan is also providing technical assistance to farmers. Mutual sharing of information among all the actors of value chain is depicted in the figure. Information regarding the demand and supply of the products is obtained through the market survey. Based on the demand Golden vintage farmers industry produce products.

- Mapping the geographical flow of the products

Cultivation takes place in Koratty panchayat. But inputs are getting from Krishibhavan and private nurseries in and around Koratty and Thrissur town. Processing is done by Golden vintage farmers industry situated in Koratty. Marketing is done directly to the company. The company will transport the products to the distributors in different areas. Then the distributors will supply to the company. The company undertakes direct exporting to concern parties- According to their demand, by opening letter of credit in favour of the company. Directly Exporting to the company outlets in UK, Australia, Sweden, New Delhi, Calcutta

Mapping the value at different levels of the value chain

Value chain of the processing unit includes farmers, private agent and exporters. The products gain some additional value throughout the chain.

- Mapping the relationships and linkages between value chain actors.

Farmers are having both persistent and spot relations with processing unit. Some farmers regularly supply nuts to processing unit but someone's supply nuts only when the price offered by Krishibhavan is not affordable to farmers. And processing unit directly relation with private agent their supply coconut to the processing unit. Processing unit is having persistent relations with coconut development board because they are the part of contributors of the share capital of company.

- Mapping the constraints at different levels of value chain

The major problems of farmers are higher price of inputs, unavailability of skilled labour etc. major constraints of processing unit includes High competition, lack of availability of nuts, damage during transportation, Price fluctuations of coconut affect production cost, High transportation and labour cost, High promotional cost, Lack of customer's awareness about the products, Political intervention, unavailability of good packing material

From the mapping and survey farmers are not getting support from co-operatives and government institutions. Even the farmers are producers they don't know about value addition of coconut so that proper trainings on value additions will support them.

Lack of consumer's awareness regarding the value added products of coconut reduces the sales of processing unit. To create awareness the company have to spend a lot on promotion. The fluctuations in prices of coconut procured will affect the production, this leads to different price for different stocks.

## **6.2 Suggestions**

From the analysis of collected data and the findings figured out some suggestions are also drawn out to strengthen the system

### **To farmers**

- Integrate coconut farming with high value crops will help the farmers to get more income.
- Strengthen the activities of coconut producer society.
- Strengthen the support of govt institutions like Krishi Bhavan ,KVK in input provision
- Form VFPCCK in Koratty panchayat to market the products of farmers
- Providing training to the farmers for value addition of coconut.

### **To processing unit**

- Form coconut clusters, coconut growers hub to get adequate supply of coconut
- Make linkages with Krishi bhavan for supply of nuts.
- Produce more value added products of coconut. So that the wastage of nut can be reduced.
- Supply of inputs to farmers will encourage the farmer to cultivation and also regular supply to the unit.
- Provide more awareness about the value added products among the consumers.
- Start company outlets in major cities.

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# APPENDIX



KERALA AGRICULTURAL UNIVERSITY

COLLEGE OF CO-OPERATION, BANKING AND MANAGEMENT, VELLANIKKARA

VALUE CHAIN ANALYSIS OF VIRGIN COCONUT OIL

## INTERVIEW SCHEDULE FOR FARMERS

Socio-economic characteristics.

1. Name:
2. Age:
3. Sex: Male  Female
4. Annual income:

Source	Income
Agriculture	
Business	
Self employment	
Wages	

Below Rs. 25000  Rs. 25000-Rs.50000  Rs.50000-Rs. 1 lakh  Rs.1 lakh & above

5. Educational qualification:

Below SSLC  Graduation   
SSLC  PG   
Plus Two  Illiterate

6. Primary occupation:

Agriculture  Business  Govt. employee  Other

7. Details of total land holding:

Type of asset	Area(in Acres)
Owned	
Leased	
Both	

8. Area under coconut cultivation:

Type of asset	Area(in Acres)
Owned	
Leased	
Both	

9. How long have you been engaged in Coconut cultivation?

10. Nature of cultivation: Traditional  Modern

11. Input suppliers:

Name of institution	Type of support
Krishibhavan	
Bank	

12. Source of seedling: Self  Farmers  Krishibhava

13. Fertilizers:

- Type : Organic  Inorganic
- Name of the fertilizer:

14. Machineries used?

15. Details of Labour:

Type of labour	Number	Amount
Family labour		
Hired labour		
Both		



Details of production:

16. Number of Coconut trees?  
 17. Number of trees yielding?  
 18. Number of nuts per year?  
 19. Price of one nut?  
 20. Self consumption (nuts/year)?  
 21. Marketable surplus (nuts/year)?  
 22. Whether the nuts are marketed after value addition? Yes  No   
 If yes, in what form?  
 23. Before removing husk  Whole nut  Broken nut  Copra   
 24. What are the other products marketed?  
 25. Whether you are getting reasonable price: yes  No   
 26. Whom you are selling your product

Sl.No.	Mode of sale	Coconut		Copra		Mode of pricing
		Quantity	Price	Quantity	Price	
1.	Krishibhavan					...
2.	Wholesalers					
3.	Retails					
4.	Local sale					
5.	VFPCCK					
6.	Processing unit					
7.	FPO					
8.	Co-operatives					

27. Whether you are entering into distress sale? Yes  No   
 28. What is the method of fixing the Coconut price?  
 29. From where you get the information regarding the price of Coconut?  
 Kissan call centre  Krishi Bhavar  KV  Friends and relative   
 News paper  Television  Magazines

30. Are you a member of farm organization/Co-operatives/Farmers club ? Yes  No   
 If yes, specify the benefits you have from such organizations?

31. Are you Aware about the schemes of Krishibhavan and CDB? Ye  N

32. Have you ever attended any training programmes regarding value addition Coconut?

33. Are you aware about the agro processing centers in your area ? Yes  No

34. Are you aware about the different value added products of Coconut? Yes  No

35. Are you aware about agro machinery/service centers?

36. Do you have any irrigation facility? Yes  No

If yes, specify the type of irrigation facility?

37. Details of inputs:

Particulars	Cost
Seedlings	
Fertilizers	
Machinery	
Financial	
Irrigation charges	
Labour	

38. Transportation cost for the input supply

Particulars	Mode of transportation	People involved in transportation	Time needed for transportation	Cost of transportation
Fertilizer				
Seed				
Pesticide				
Machineries				

39. Do you have any drying facility? Yes  N

If yes, specify.....

40. Do you have any storage facility?

Yes		Capacity	No
Owned	Others		

41. Credit details

Source of credit	Amount	Rate of interest	Repayment	Outstanding	Overdue



KERALA AGRICULTURAL UNIVERSITY

COLLEGE OF CO-OPERATION, BANKING AND MANAGEMENT, VELLANIKKARA

VALUE CHAIN ANALYSIS OF VIRGIN COCONUT OIL- INTERVIEW SCHEDULE FOR CONSUMERS

1. Name of the respondent:
2. Address :
3. Age : <20  20 - 40  40-60  >60
4. Sex : Male  Female
5. Educational Qualification: Below SSLC  Plus Two  UG  PG  Others
6. Primary Occupation : Agriculture  Non agriculture
7. Family income (in Rs.) : <10000  10000-20000  20000- 50000   
>50000
8. Place of residence : Urban  Semi Urban  Rural
9. Who takes purchase decision: Father  Mother  Both
10. From where you purchased Virgin coconut oil ?

Directly from processing unit  Retail shop  Supermarket  Others

11. Are you aware of the value of the Virgin coconut oil : Yes  No

12. How would you describe Virgin coconut oil:

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Don't know
Healthy.						
High nutritional value.						
Product is growing in harmony with nature.						

13. Source of awareness : Television  Radio  News Paper

Word of mouth  Friends  Magazine

14. Virgin coconut oil users at the family: Father  Mother  Children  All

15. What are the reason for using Virgin coconut oil: Out of habit  Medicinal purpose

Culinary purpose  Beauty care

16. Frequency of purchase of Virgin coconut oil : Weekly  Fortnightly  Monthly

173671

17. Your preferred market or shop to purchase Virgin coconut oil:

Processing  Supermarket  Retailer

18. Rank according to the preference variable towards Virgin coconut oil:

FACTORS	RANK
1.Price	
2.Quality	
3.Attractive packaging	
4.Convenience	
5.Availability	
6.Helth benefit	



19. Do you think that Virgin coconut oil still require more promotion among the consumers:

Yes  No

20. Do you expect any change in the packing of Virgin coconut oil: Yes  No

If yes specify.....

21. How would you rate your overall satisfaction with Virgin coconut oil you purchased:

Very satisfied  Somewhat satisfied  neutral  Somewhat dissatisfied   
Very dissatisfied

22. Suggestion for improving the product: