VALUE CHAIN ANALYSIS OF TURMERIC- A STUDY WITH SPECIAL REFERENCE TO PAZHAYANNUR BLOCK

By

Rahana P Ibrahim

(2010- 45- 131)

PROJECT REPORT

Submitted in partial fulfillment of the requirement for the degree of

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DECLARATION

I hereby declare that this project report entitled**"VALUE CHAIN ANALYSIS OF TURMERIC- A STUDY WITH SPECIAL REFERENCE TO PAZHAYANNUR BLOCK"** is a bonafide record of research work done by me during the course of project work and that it has not previously formed the basis for the award to me for any degree/diploma, associate ship, fellowship or other similar title of any other university or society.

Vellanikkara
18-07-2014

RAHANA P IBRAHIM
(2010- 45- 131)

CERTIFICATES

CERTIFICATE

Certified that this report entitled **"VALUE CHAIN ANALYSIS OF TURMERIC- A STUDY WITH SPECIAL REFERENCE TO PAZHAYANNUR BLOCK"** is a record of work done by **Miss. RAHANA P IBRAHIM (2010-45-131)** 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 her.

Vellanikkara
18-07-2014

Sri. Jacob Thomas M
Associate Professor
College of Co-operation, Banking and Management,
Kerala Agricultural University

CERTIFICATE

We, the undersigned member of the Viva-Voce Board of Miss. **RAHANA P IBRAHIM (2010-45-131)** candidate for the degree B.Sc. (Hons) Co-operation and Banking agree that the project report entitled **"VALUE CHAIN ANALYSIS OF TURMERIC- A STUDY WITH SPECIAL REFERENCE TO PAZHAYANNUR BLOCK"** may be submitted in partial fulfillment of the requirement for the degree.

Sri. M. Mohanan

Associate Professor

Dept. of Rural Marketing Management

College of Co-operation, Banking and Management,

Kerala Agricultural University

Vellanikkara.

(Chairman)

College of Co-operation Banking and Management
Vellanikkara
KAU P.O.
Thrissur - 680 656
Date.....
Kerala Agricultural University

Sri. Jacob Thomas M

Associate Professor

College of Co-operation, Banking and Management,

Kerala Agricultural University

Vellanikkara.

(Guide)

Dr. K. A. Suresh

Associate Professor

Dept. of Development Economics

College of Co-operation, Banking and Management,

Kerala Agricultural University

Vellanikkara.

(Examiner)

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Rahana P Ibrahim

(2010- 45- 131)

Dedicated to my dear father.....

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DESIGN OF THE STUDY

1.1 INTRODUCTION

The value chain is defined as the full range of activities which are required to bring a product or service from conception, through the different phases of production (involving a combination of physical transformation and the input of various producer services), delivery to final consumers, and final disposal after use.

The present study, value chain analysis of turmeric was conducted in Pazhayannur block of Thrissur district. Turmeric is the ancient and sacred spice of India which known as 'Indian saffron'. It is a rhizomatous herbaceous plant botanically known as *Curcuma longa*. Turmeric is a native of Tropical south Asia (India). The plant is propagated from rhizomes. The leaves are long, broad, and bright green. The flowers are pale yellow and borne on dense spikes. The pseudostems are shorter than leaves. The rhizomes are ready for harvesting in about 7 to 9 months after planting. The important varieties in Kerala are Sugantham, Kodur, Armoor, Alleppey, Suvarna, Suguna, Sudarshana, Prabha, Prathibha, Kanthi, Sobha, Sona and Varna.

Processing of turmeric includes curing, drying, polishing, and colouring. Value added products from turmeric include Curcuminoids, dehydrated turmeric powder, oils, and oleoresin.

1.1.1 Production of Turmeric

a) World Scenario

India is the largest producer of turmeric and apparently accounts for more than 80% of the world's production. There are no authentic sources of precise production numbers on turmeric production in the world. However, as per the report published by the APEDA, apart from India, China contributes for about 8% of world's turmeric production followed by Myanmar with 4%, Nigeria and Bangladesh with 3% each share in total turmeric production in the world. (Source: APEDA)

b) Domestic Scenario

India is apparently he largest producer, consumer and exporter of turmeric in the world. Turmeric is the third largest spice produced in the country and it accounts for about 14% of total spices produced in India. Turmeric production has been rising steadily but slowly during the past decade particularly due to rise per hectare yields despite near stagnation in area under cultivation.

Table 1.1 Area, production and productivity of turmeric in India, 2004-05 to 2012-13

Year	Area ('000 ha)	Production ('000 tons)	Productivity (tons/ha)
2003-04	150.7 (100)	567.2 (100)	3.7 (100)
2004-05	158.4 (105.10)	718.1 (126.60)	4.5 (121.62)
2005-06	177.5 (117.78)	846.7 (149.27)	4.7 (135.13)
2006-07	185.0 (122.76)	836.0 (147.39)	4.5 (143.24)
2007-08	180.0 (119.44)	830.0 (146.33)	4.6 (137.83)
2008-09	181.0 (120.10)	821.1 (144.76)	4.5 (118.91)
2009-10	180.9 (120.03)	792.9 (139.79)	4.4 (121.62)
2010-11	195.1 (129.46)	992.9 (175.05)	5.1 (124.32)
2011-12	219.0 (145.32)	1167.0 (205.74)	5.3 (121.62)
2012-13	194.0 (128.73)	971.0 (171.19)	5.0 (127.02)

(Source: National Horticulture Board)

Note: Figures in parenthesis represents growth indices.

From the table, it is clear that highest area under turmeric cultivation was marked in 2011-12, which turned down afterwards. It is mainly due to adverse climatic conditions in major turmeric producing states. Turmeric production in India touched its peak level in 2011-12; it was declined in next year. Also, productivity of turmeric was high in 2011-12 due to increase in area and production.

State-wise production

Turmeric production is largely concentrated in southern states Andhra Pradesh and Tamil Nadu accounting for nearly 80% of total output in the country. Andhra Pradesh is the single largest producer of turmeric accounting for more than 60% of total turmeric produced in the country. Tamil Nadu is the second largest producer contributing for about

17% of output in the country followed by Odisha, West Bengal and Karnataka.(Source: Ministry of Agriculture, GOI).

Share of Kerala in production and area of turmeric in is 0.72% and 1.4% respectively. The agro-climatic conditions in Kerala state are favorable for successful turmeric cultivation. Thus Kerala can play a predominant role in turmeric production by improving productivity through balanced fertilizer use. However, area expansion as an individual crop is limited due to scarcity of cultivable land in Kerala.

Table 1.2 Area, production and productivity of turmeric in Kerala, 2004-05 to 2012-13

Year	Area (ha)	Production (tons)	Productivity (Kg./ha)
2003-04	2774 (100)	5652 (100)	2037 (100)
2004-05	2881 (103.85)	6244 (110.47)	2167 (106.38)
2005-06	3384 (121.98)	8237 (145.73)	2434 (119.48)
2006-07	3917 (94.73)	9980 (122.15)	2548 (125.08)
2007-08	3155 (113.73)	7434 (131.52)	2356 (129.11)
2008-09	2782 (100.28)	6364 (112.59)	2288 (112.32)
2009-10	2438 (87.88)	6066 (107.32)	2488 (122.14)
2010-11	2391 (86.19)	6198 (109.66)	2592 (127.24)
2011-12	2970 (107.06)	7946 (140.58)	2675 (131.32)
2012-13	2628 (141.20)	6904 (176.57)	2630 (115.66)

(Source: www.keralaagriculture.gov.in)

Note: Figures in parenthesis represents growth indices.

1.1.2 Benefits of Turmeric

Turmeric has so many uses in daily life. Its uses are as follows:

1.1.2. A. Medicinal Uses

From many years awareness of turmeric and its use as medicine is continuously increasing. A flowering plant, Turmeric, in the ginger family, is commonly used as a food coloring and is one of the basic ingredients in curry powder. To heal many health disorders like liver problems, digestive disorders, treatment for skin diseases and wound healing

turmeric has long been used in Medicinal as an anti-inflammatory. Curcumin is the active ingredient in turmeric which has been shown to have a wide range of therapeutic effects.

- *Digestive Disorders:* Turmeric is considered as a digestive bitter and a carminative. It can be added into foods including rice and bean dishes to improve digestion, reduce gas and bloating. It is a cholagogue, stimulating bile production in the liver and encouraging excretion of bile via the gallbladder. This improves the body's ability to digest fats. For chronic digestive weakness and/or congestion turmeric is recommended. It can be taken as a single extract or in the form of digestive bitters, which combine turmeric with other bitter and carminative herbs. Turmeric is beneficial for people who feel tired after consuming meals or who experience gas and bloating. Whatever way turmeric is consumed it is beneficial to both the digestive system and the liver.
- *Liver Diseases:* Turmeric is beneficial for its influence on the liver. In spring more consumption of herbs and foods can strengthen the liver. Turmeric shares similar liver protectant compounds that milk thistle and artichoke leaves contain. It is said to shrink engorged hepatic ducts, so it can be useful to treat liver conditions such as hepatitis, cirrhosis, and jaundice.
- *Cancer:* Recent scientific research confirms that turmeric can cure host of diseases, also they found that turmeric restrain the growth of various types of cancer. Turmeric is used for the treatment of skin cancer or pre cancerous skin conditions. Both topical and internal uses are beneficial.
- *Atherosclerosis:* Turmeric may helpful in preventing the blockage of arteries that can gradually cause a heart attack or stroke in one of two ways. Turmeric makes cholesterol levels low and inhibited the oxidation of LDL (bad cholesterol). Oxidized LDL deposits in the walls of blood vessels and contributes to the formation of atherosclerotic plaque. Turmeric may also prevent platelet build up along the walls of an injured blood vessel. Platelets collecting at the site of a damaged blood vessel cause blood clots to form and blockage of the artery as well.
- *Osteoarthritis*: Turmeric may help relieve the symptoms of osteoarthritis because of its ability to reduce pain and disability.
- *Bacterial Infection / Wounds*: Turmeric is useful as an external antibiotic in preventing bacterial infection in wounds.

- *Other Health Disorders:* Turmeric decreases congestion and inflammation from stagnant mucous membranes. Turmeric is anti-inflammatory to the mucous membranes, which coat the throat, lungs, stomach and intestines. Regular use of turmeric can benefit from Colitis, Crohn's disease, diarrhea, and post-giardia or post salmonella conditions. The itching and inflammation that accompanies hemorrhoids and anal fissures can reduce by use of turmeric. Turmeric can also benefit skin conditions including: eczema, psoriasis and acne, for those it is potent detoxifier.

1.1.2. B. Food Use

Turmeric is widely cultivated for its rhizomes which are used as a bright yellow-orange culinary spice. It has been known as poor man's saffron because it offers a less expensive alternative yellow colouring. In turmeric, curcumin is the primary pigment and is generally used in various food industries as a food color. It is mainly used in dairy products, beverages, cereal, confectionary, ice cream, bakery, and savory products. Turmeric is mostly used in flavored milk drinks, cultured milk and desserts to obtain lemon and banana colors in dairy. Turmeric is added at higher levels to sausages, pickles, relishes, sauces, dry mixes, and fish due to its original usage as a spice.

1.1.2. C. Cosmetic Use

Since time immemorial, turmeric is very popular in cosmetic use especially for woman. In the East, Turmeric is precious as the therapeutic goldmine inhabits significant position in the psyche of Hindu. It forms an important part of various sanctified Hindu rituals focus its importance for mankind. In the late 1970s a scientific study on turmeric was taken up and in the beginning was restricted mostly to its anti-inflammatory characteristics. Eventually, turmeric has globally attracted for its cosmetic and therapeutic use.

- *Skin care and colouring:* The skin is the main portion of the body and provides a shielding barrier against harmful chemicals, microbes, and ultraviolet radiation. Natural plant products like turmeric have been formulated to heal and prevent dry skin, treat skin conditions such as eczema and acne, and retard the aging process. Washing in turmeric improves skin complexion and also reduces hair growth on body. Nowadays there are lots of herbal products in the market in which main herb used is turmeric as natural ingredient. These constitute home remedies for skin and hair problems. Natural cleansers like milk with turmeric powder are effective natural

cosmetics in themselves; it brings a healthy glow to the skin and makes them beautiful. They also help to restore or maintain youth by controlling wrinkle and crease formation on the surface of the skin. Turmeric can also benefit skin conditions including: eczema, psoriasis and acne. Effectual healing properties of turmeric have made it accepted after ingredient in cosmetics and drugs, as the leaf oil of turmeric and extract can also be used as bio-pesticides and sunscreens. Turmeric is also very effective tonic and a blood purifier. It is also skin-friendly and constitutes an important ingredient of many creams and lotions.

- *Hair care:* For the treatment of dandruff, and as hair colorants and dyes, plant extracts are used as hair growth stimulators, the mechanism of action appears to be an acceleration of blood circulation or increased nutrition to the hair follicles. Natural dyes derived from plant extracts are being used in hair colorant products; curcumin from turmeric also used in natural dye produces a range of color from yellow to deep orange.
- *Skin disease:* A fresh Juice from rhizome or a paste prepared from turmeric or decoction is often used as a local application as well as internally in the treatment of leprosy skin disease. In case of smallpox and chickenpox, turmeric is applied as a powder or as a paste to facilitate the process of scabbing.

1.2 STATEMENT OF PROBLEM

Turmeric is a spice used extensively by all classes of people in India and is one of India's most ancient and traditional export commodities. The world production of turmeric stands at around 11 lakh tones in which India hold a share of approximately 75-80%. Also India consumes around 80% of its own production. But share of Kerala to national production of turmeric is very limited. Except in a few regions, turmeric is cultivated as a homestead crop in Kerala. Turmeric cultivation in Kerala is restricted to limited areas of majority districts, and which is cultivated as intercrop with coffee, rubber and coconut plantations for first 2-3 years and also with ginger, cassava and other vegetables based on rotation system. It is a unique feature of Kerala's agriculture to shift in favour of plantation crops. There is wide scope for value added products of turmeric in domestic as well as international market.

Kerala shows negative growth rate in area of turmeric. This negative growth rate is due to production of turmeric in small patches, where the plantation crops such as rubber, coconut, etc. are dominating and they are more profitable than turmeric. The other main

problem is the labour requirement, wherein around 50 per cent of the cost of cultivation was spent on labour in turmeric production. But the labour is scarce and wages are very high. Hence, the farmers opting plantation crops, where there is no need of more labour throughout the year. Year after year area under turmeric is reducing because of this reason.

Production of turmeric in study area is undertaken mainly due to the scheme 'Area Expansion of Turmeric'. Main objectives of the scheme are increase area of turmeric using high yielding and improved varieties, productivity improvement of organic turmeric, and assist farmers in technology adoption for higher production.

It is necessary to identify and map the value chain of turmeric, since Pazhayannur block is the place with considerable number of farmers in Thrissur district. It helps to identify the core processes, main actors involved in the processes and activities undertaken by actors etc. Therefore, a study needs to undertake to map the value chain of turmeric in Pazhayannur block.

1.3 OBJECTIVES

1. To identify and map the value chain of turmeric in Pazhayannur block of Thrissur district.
2. To identify different processes and major players in the value chain of turmeric in Pazhayannur block of Thrissur district.

1.4 METHODOLOGY OF THE STUDY

1.4.1 Location of the study

Pazhayannur block of Thrissur district.

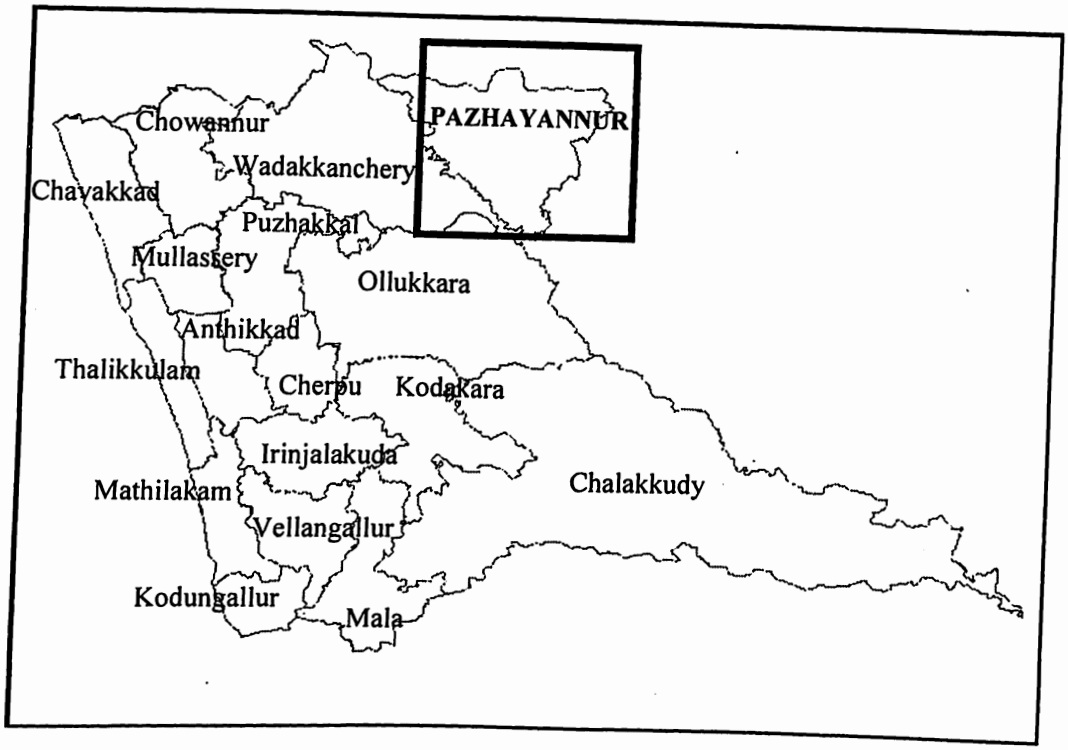


Figure 1.1 Pazhayannur block in Thrissur district

1.4.2 Period of the study

The study was conducted between May to July.

1.4.3 Sample design

Stakeholders selected for study consists of 30 farmers, 5 village traders, 3 wholesalers and 10 consumers.

1.4.4 Data source

The study was based on both primary and secondary data. The primary data was collected through a sample survey of selected stakeholders by using structured schedule and secondary data was collected from articles and relevant websites.

1.4.5 Data analysis

The data collected was analyzed by value chain mapping tool, percentage analysis and rank order analysis.

1.5 OBSERVATIONS TO BE MADE

- Socio- economic profile of farmers
- Existing value chain in study area
- Input supply system
- Production aspects of Turmeric
- Marketing channels

- Benefits to different actors of the chain
- Pre and post harvest activities
- Return at each stage
- Marketing problems and constraints

1.6 SCOPE OF THE STUDY

The scope of the study is limited to the mapping of value chain of turmeric and analysis of distribution of benefits to the players. The study also looks into the major marketing constraints faced by various players in the value chain in pazhayannur block. The study also identified areas of deficiency and also focused on strengthening the weak links in the chain. This involves analyzing prices, activities or operations at each point on the value chain and return obtained by the farmers on produce.

1.7 LIMITATIONS OF THE STUDY

Limitation of time and other resources will restrict an elaborate and wider analysis. The study was completely based on the opinion of the respondents; it may not be free from their personal bias and prejudices. Findings cannot be generalized since this study will be confined to a particular area ie; Pazhayannur block. The study was not explored all the links because value chain goes to beyond district.

1.8 SCHEME OF THE STUDY

Study is presented in following scheme:

Chapter1: Design of the study.

Chapter2: Profile of Pazhayannur block.

Chapter3: Analysis.

Chapter4: Value chain mapping of turmeric in Pazhayannur block.

Chapter5: Summary, findings and conclusions.

1.9 REVIEW OF LITERATURE

Beamon (1998) study entitled Supply Chain Design and Analysis: Models and Methods provided a focused review of literature in multi-stage supply chain modeling and define a research agenda for future research in this area. More specifically, this paper reviewed the available supply chain models and methods, and identified topics for future research consideration that will facilitate the advancement of knowledge and practice in the area of supply chain design and analysis.

Kaplinsky and Morris (2000) in their book named "Handbook for Value Chain Research" reviews importance of value chain analysis, determinants of income distribution, and methodology for adopting value chain research

Raphael (2000) in his study Spreading the Gains from Globalization: What Can Be Learned From Value Chain Analysis, proposed that unequal character of recent processes of globalization, summarizes the key theoretical concepts which characterize the concept of value chains and illustrates the contribution of value chain analysis through summaries of four chain case- studies (fresh fruit and vegetables, canned deciduous fruit, foot wear and automobile components). It concludes with a discussion of practical ways of how value chain analysis can inform policy.

Rajesh (2001) conducted a study on the topic Export Performance of Major Spices in India to address some of the export issues in Indian spices based on performance during two time periods viz., pre liberalization and post liberalization.

Barnes (2002) study on The Mobile Commerce Value Chain: Analysis and Future Developments analysed the key players and technologies that form part of the mobile (m) - commerce value chain, providing a foundation for future strategic analysis of the industry. Drawing on some of the key factors that may influence the take-up of m-commerce including technological and other issues- the paper also provides predictions regarding the future of m-commerce.

Kumawat and Meena (2005) in their study named Growth and Instability in Area, Production, and Yield of Major Spice Crops in Rajasthan Visa-à-Vis India indicated that almost all the spices registered significant growth rate in their production. Different statistical tools like variance, co- variance and percentage analysis were used for the analysis of study.

Sujatha (2006) thesis entitled Export Competitiveness of Spices in India was undertaken to analyze the export performance of major spices with reference to two time periods viz., pre- WTO and post- WTO with respect to their growth and direction of trade. Study also includes the nature and extent of integration between domestic and international markets, export competitiveness of Indian spices, constraints faced by Indian spice exporters.

Fafchamps *et.al* (2007) paper entitled Quality Control and the Marketing of Non-Staple Crops in India was conducted to assess how the market for non-staple crops currently functions in India and how existing agricultural marketing institutions can be improved. They conducted a combined survey of growers, traders and processors of

five selected non-staple crops in four states. Data were also collected at the market and village levels. Information was collected on the production and marketing practices of 400 growers and on the trading practices of 400 traders in each state. Interviews were conducted with 300 processors across all four states.

Madan (2008) conducted a study on Changing Scenario of Turmeric Production and Marketing. This paper examines the possible changes in turmeric production and marketing in India during the last two decades and ascertains the prospects in the light of free trade and spice trade under the WTO regime. Published times series data on production, export and prices were analyses using seasonal, trend and Fourier analysis. The revised series of the commodity wholesale price index for turmeric with base year 1993-94 was used to get the real value of the commodity marketed. Productivity of turmeric has increased over the years from 2.1 t/ha in 1980-81 to 3.63 t/ha in 2002-03. Analysis of time series data indicated that the coefficient of variation for farm price was higher than that of production.

Murukananthi *et.al* (2008) study entitled A Study on the Direction of Trade in the Indian Turmeric Exports: Markov Chain Approach reviewed that even though India plays a major role in turmeric export, its export quantity and value varied over the years. In order to retain India's leadership, there is a need to study the export performance due to the increasing domestic demand and a threat from the competing countries. Hence, the present study is undertaken with a view to analyze the export performance of turmeric from India. The export performance is measured in terms of growth rate, instability index and Markov chain analysis. The data on export quantity and export value from 1996-2006 was taken for the purpose of this study.

Roy and Hore (2009) studied on topic Bio-organic Inputs for Production of Organic Turmeric Grown as Intercrop in Arecanut Plantation conducted to find out suitable bio-organic inputs for production of organic turmeric. Plants grown under bio-organic inputs exhibited maximum values in most of the growth and yield parameters as compared to inorganic inputs.

Deepa (2010) prepared an article on Turmeric: The Golden Spice. Her study included global and Indian scenario of turmeric.

Ganeshprasad *et.al* (2010) study conducted on the topic Economic Production and Marketing Channels Used by Turmeric Growers in Chamarajanagar district of Karnataka to estimate the economic turmeric production and marketing channels used by turmeric growers. A pre- tested schedule was used to interview 120 turmeric

growers. Majority of the respondents marketed the produce in the regulated market at Erode, Tamilnadu. About 63% of turmeric growers opinioned that price fluctuation was the major marketing constraint.

Timsina *et.al* (2010) a study on value chain analysis of turmeric (*Curcuma longa*) was conducted in December, 2010. Forty turmeric producing farmers were selected randomly from the list of District Agriculture Development Office, Sunsari. Similarly, 25 traders, wholesalers and retailers from Sunsari and Biratnagar were selected purposively. The study revealed that more than 38 percent of the cost goes to the labor as all the operation was labor intensive. There were no formal institutions involved in the promotion of turmeric in the study area and hence local seeds were used since time immemorial.

Chaterjee *et.al* (2012) in their study on Spices Scenario in the North Eastern States of India with Special Reference to Production and Marketing pointed that North Eastern region harbours, a rich flora on account of its varied topography, climate and altitudes and has great potential for the development of horticulture crops like spices. In this region, a huge quantity of good quality spices are produced, but most of the growers during peak season sell their produce at throw away prices in the local market or to the commission agent. The need of the hour is to promote public-private partnership so that the production technology of important spices is taken to every nook and corner of this region. There is need to improve infrastructure extension network, focused research in order to harness the potentiality of this region for quality spice production. It is suggested to form Co-operatives or farmers' organizations or both at local level and regional level for better marketing of the produce.

Devdas and Shaheena (2012) conducted study on supply chain management of ginger in wayanad district and studied supply chain of ginger from the level of input providers to market at Kochi. Core processes in ginger value chain are input provision, cultivation, procurement and marketing.

Ferichani and Prasetya (2012) study named Satisfaction Measurement on Agribusiness Product Marketing aimed at implementation of satisfaction technique to develop a qualitative and marketable new product as an alternative method to develop agri-business product marketing.

Veerakumaran (2012) prepared an article on Mapping The Value Chain Of Paddy- A Case Study Of Palakkad District Procurement, Processing And Marketing Co-Operative Society Limited (Paddico Ltd). His study evolved maps of value chain for

paddy. Inputs are mainly supplied by the Primary Agricultural Credit Cooperatives. Paddico Ltd procures and process paddy in their modern rice mill. Produced paddy is marketed through Kerala state civil supplies corporation and their own retail outlets. Paddico Ltd tries to ensure better price for the farmers and sale of quality Palakkadan Matta rice at a fair price to consumers.

Kiruthika (2013) in her study The Economics of Production of Turmeric in India: A Case Study of Erode District of Tamilnadu noted that India has monopoly in turmeric trade at world level. Although India is the largest producer of turmeric in the world but it export only 6% of the total production. The study was taken up with the specific objective to study the economics and input use efficiency in production of turmeric in Erode district of Tamilnadu.

Babu *et.al* (2013) studied on Status of Transgenics in Indian Spices reviews that a consolidated account of contemporary information on biotechnological advances made in spice crops and future perspective in this direction.

Prabhavathi *et.al* (2013) their study named Analysis of Supply Chain of Spices in India: A Case Study of Red Chillies identified two major supply chains, Which reveals that supply chain II is more efficient than the supply chain I because more value goods are delivered to consumer from producer at low marketing costs. Delay in payment after sale, problems in fare price evolution process, collection of excess commission and availability of loan through bank on produce important problems that farmers are facing in this market.

Shincy and Karthika (2013) conducted study on value chain in agricultural commodities (pepper) in Trikkur panchayat. The study was conducted with the objective of to map the different components and stakeholders in the value chain of pepper and to analyze the distribution of benefits at each level of value chain of pepper. The study was based upon both primary and secondary sources of data.

PROFILE OF PAZHAYANNUR BLOCK

CHAPTER 2

PROFILE OF PAZHAYANNUR BLOCK

2.1 HISTORY

Pazhayannur block is located on north eastern frontier of Thrissur district. The place is located such that it blenches with the cultural heritage of dravida, Kochi and Valluvanadu. The origin of the name has different trivia associated with it. The story goes that they got its name from an old wine vendor who got the land from Tanjavoor dynasty. The wine vender is called 'pazhayan' in Tamil. It is home to many famous personalities belongs to diverse who have made their own mark in respective fields. Kalamandalam present helps in upholding the traditional art forms like Bharathanatyam, Kuchipudi, etc. The villages of this block live with these traditional forms. The art forms performed at time of festivals and melas at temples, churches unlike peoples irrespective of caste, religion and creede. But of late the traditional art forms of the state like Thaiyam, Pulluvanpattu, etc are declining from the village though at a slow pace. The block had its centre for study of astronomy thousands of years ago. For years, the people of lower caste were being dominated by the minority upper caste in the name of social evils like untouchability etc. The lower caste was not even being allowed to have own homes or land or even had good clothes. They were also not allowed to enter temple or walk along the upper castes. The block constituted peoples from all religion and making a mini south India.

There is a village called Kuthampully, located on the banks of legendary Bharathappuzha, in Thiruvallamala Panchayat. It is a village of traditional weavers. There are about 2000 weaver families living in the village. The weavers belong to the Devanga community of Karnataka. It is said that this community is traditional weavers were brought by Kochi Royal family some 500 years back to make dress exclusively for the palace. The handlooms which are being produced here is mostly with half fine jeri. However the modern community of weavers has also been producing embroidered and hand painted designs on the woven fabric.

2.2 GENERAL DETAILS

Pazhayannur Block is one of the 17 blocks of Thrissur district and is situated in the Thalapilly Taluk. This block was formed in 1 July 1956. It is the major contributor in the agricultural sector of Thrissur district. Pazhayannur block spreads over 226.95sq.km. There are 13 divisions and 21 villages in this block. Population of the block is 155421, consisting of 73833 males and 81588 females. Pazhayannur Block includes 6 panchayaths

namely Chelakkara, Vallatholnagar, Kondazhy, Panjal, Pazhayannur and Thiruvilwamala. Pazhayannur block is bounded on the South by Machad Reserve forest, on the East by Plazhy River, on the North by Bharathapuzha and on the West by Machad and Akamala Hills. Geographically this block is having forest area, hills and plains. It is having areas lying 30-225 meters above the sea level. Sandy soil, red soil, black soil, clay soil, laterite soil are the main soil types seen here.

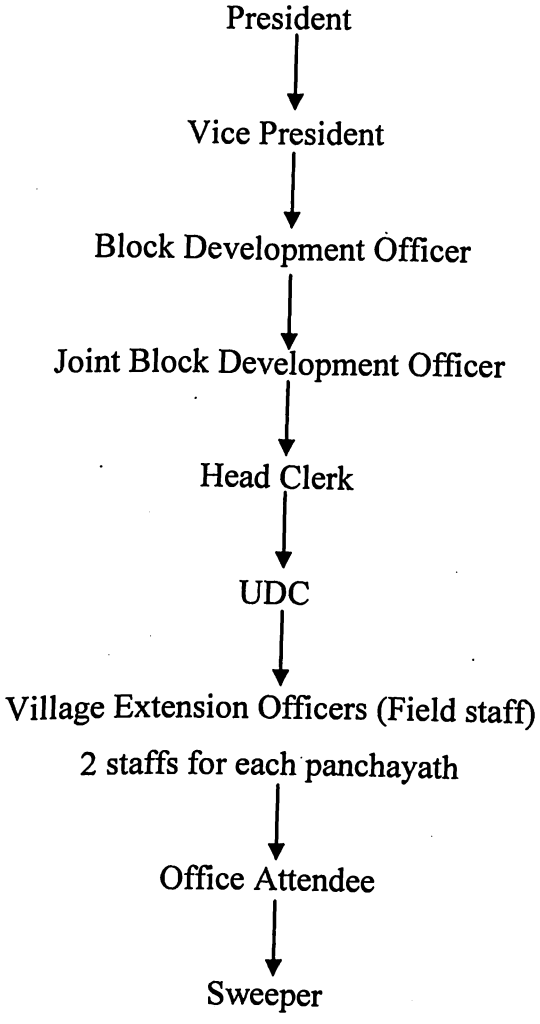
Table 2.1 Block wise area and production of turmeric in Thrissur district, 2012-13

Name of block	Area (in Ha)	Production (in tones)
Chavakkad	0.26	0.39
Mullassery	0.45	0.91
Thalikkulam	0.91	1.54
Chalakkudy	4.79	15.47
Irinjalakuda	2.87	8.78
Kodakara	9.49	27.42
Mala	7.41	16.37
Vellangallur	2.94	7.49
Chowannur	2.33	3.56
Pazhayannur	**21.69**	**55.31**
Wadakkanchery	11.11	18.88
Anthikkad	1.72	2.04
Cherpu	0.67	0.68
Ollukkara	4.58	7.00
Puzhakkal	4.23	7.19
Mathilakam	1.31	1.33
Kodungallur	0.76	1.02

Source: www.ecostat.kerala.gov.in

From the table it is clear that Pazhayannur block is having 21. 69 ha area under turmeric cultivation and production is 55.31 tonnes during 2012 – 2013. It is the largest production area of turmeric in Thrissur district.

2.3 ORGANISATIONAL STRUCTURE OF PAZHAYANNUR BLOCK



2.3 PANCHAYATHS AND KRISHIBHAVANS

Pazhayannur Block is the major contributor of agricultural commodities in Thrissur district and majority of the population depends on agriculture for their daily bread. There are 6 krishibhavans in this block which is situated in Pazhayannur, Kondazhy, Chelakkara, Panjal, Thiruvilwamala, and Vallatholnagar. The major crops produced here are paddy, coconut, pepper, banana, arecanut, rubber, cashew, vegetables, tapioca, ginger and turmeric.

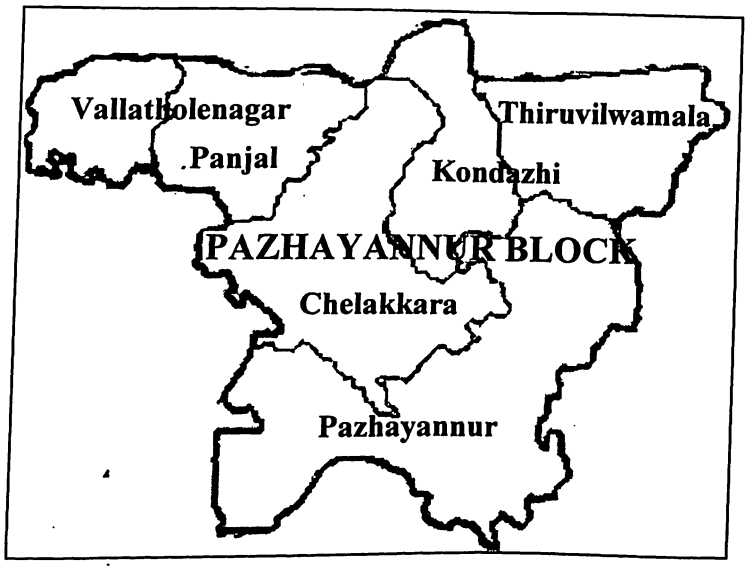


Fig 2.1 Panchayaths in Pazhayannur Block

2.3.1 Pazhayannur Panchayath

Pazhayannur Krishibhavan, Pazhayannur, having area of operation 59.91 ha. The major crops cultivated in this area are Paddy, coconut, Arecanut, vegetables, rubber etc. Most of the farmers are either small or Marginal. Two Swasraya Karshaka Samithi (SKS) are situated in Pazhayannur which helps the farmers to market their produce easily. Elanad Swasraya Karshaka Samithi (SKS) is a well known SKS all over Kerala due to its performance and efficiency.

2.3.2 Chelakkara Panchayath

Chelakkara Krishibhavan, Chelakkara, having area of operation 31.94 ha. The major crops cultivated in this area are Paddy, Rubber, Coconut, Banana, Ginger etc. Most of the farmers are either small or Marginal. Chelakkara SKS is functioning here to help the farmers in marketing their produce and availing subsidies.

2.3.3 Vallatholnagar Panchayath

Vallatholnagar Krishibhavan, Cheruthuruthy, having area of operation 17.14sq.km. The major crops under cultivation in this area are Paddy, banana and Vegetables.

2.3.4 Panjal Panchayath

Panjal Krishibhavan, Panjal, having area of operation 40 sq.km. Major crops cultivated are Coconut, Paddy and Vegetable. Most of the farmers are small and Marginal.

2.3.5 Kondazhy Panchayath

Kondazhy Krishibhavan, Kondazhy, having area of operation 15.82sq.km. The major crops cultivated are Paddy, Coconut, Banana and turmeric. Most of the farmers are small and Marginal.

2.3.6 Thiruvilwamala Panchayath

Thiruvilwamala Krishibhavan, Nellikkuzhy, having area of operation 25.30ha. Major crops are Paddy, vegetables, banana etc. Most of the farmers are Small and, Marginal farmers.

2.4 CONCLUSION

Value chain analysis of turmeric was conducted in Pazhayannur block of Thrissur district. Block consists of six krishibhavans for agricultural development of each panchayath in block. There is proper control and supervision from Assistant Director of Agriculture in Pazhayannur block. Marketing of produce is the major problem faced by farmers in the block.

ANALYSIS

CHAPTER 3

ANALYSIS

3.1 INTRODUCTION

Value chain analysis of turmeric in Pazhayannur Block of Thrissur district was an attempt to study the various players involved in the value chain of turmeric, their functions and roles. The study was conducted based on primary data collected from 30 farmers, 5village traders, 3 wholesalers and 10 consumers of Pazhayannur Block by using structured interview schedule. The results of the study are also presented and discussed in this chapter.

3.2 PRODUCER FARMER

30 farmers were selected from Chelakkara panchayath and Vallatholenagar panchayath for the study. That is, 15 farmers from each panchayath

3.2.1 Socio- economic profile

The demographic characteristics of the respondents such as age, gender, occupation, educational qualification, annual income and area of land owned were studied. These factors show the standard of living of the farmers.

Table 3.1 depicts the socio- economic profile of farmers from which it is clear that out of 30 farmers 50 percent belongs to the age group of 45- 55 years. Among the 30farmers 77 percent constitute male and remaining 27 percentages were females. It shows the domination of male in the agriculture operations. Out of 30 farmers 57 percent were below SSLC. 93 percent of respondents were depends on agriculture for their livelihood. From the table it is clear that annual income of 57 percent of farmers was below one lakh and 13 percent had an income of 1 – 2 lakhs.

Table 3.1 Socio- economic profile of farmer

Criteria	No of respondents	Percentage
Age:		
Below 35	1	3
35 – 45	12	40
45 – 55	15	50
Above 55	2	7
Total	30	100
Sex:		
Male	23	77
Female	7	23
Total	30	100
Educational qualification:		
Below SSLC	17	57
SSLC	13	43
Total	30	100
Primary occupation:		
Agriculture	28	93
Wage earner	2	7
Total	30	100
Annual income:		
Below 1 lakh	17	57
1 – 2 lakh	13	43
Total	30	100

Source: compiled from survey

3.2.2 Land holdings pattern

Land is most important in agricultural operations. Below table shows the details of types of land holdings, irrigation method used in the land and type of cultivation practice followed by turmeric farmers in Pazhayannur block.

Table 3.2 Land holding pattern

Parameter	No of respondents	Percentage
Type of ownership:		
Owned	26	87
Owned and leased	4	13
Total	30	100
Irrigation method:		
Bore well	23	77
Well	7	23
Total	30	100
Cultivation practice:		
Traditional	30	100
Total	30	100

Source: compiled from survey

Table 3.2 depicts the land holdings pattern .From the table it is clear that out of 30farmers 87 percentages were having own land and 13 percentage farmers were having both owned and leased land. 77 percent of farmers mainly depends bore well for irrigation. The entire 30farmers were following traditional method of cultivation.

3.2.3 Inputs for cultivation of turmeric.

Rhizome is the part which used as planting material for cultivating turmeric. In the study area, farmers were producing planting material in their own farm. They were not giving importance to any specific variety for cultivating. They were cultivating local varieties. They were getting subsidy in the form of money as part of programme 'Area Expansion of Turmeric' of Government of Kerala. Subsidy will be transferred from krishibhavan to bank account of farmers during different stages of cultivation.

3.2.4 Details regarding use of fertilizer and pesticides.

Turmeric cultivation does not require any specific fertilizers. It only needs organic fertilizers like cattle manure, compost, etc. No major incidence of pest or disease is noticed in the crop. Table below shows use of fertilizers and pesticides.

Table 3.3 Details regarding use of fertilizers and pesticides.

Parameter	No of respondents	Percentage
Type of fertilizer :		
Organic	30	100
Total	30	100
Do you use pesticides:		
Yes	0	0
No	30	100
Total	30	100

Source: compiled from survey

Table 3.4 depicts the details regarding the use of fertilizer and pesticides. All farmers were using fertilizer which is organic in nature. Out of 30 farmers no one was using pesticides for turmeric cultivation.

3.2.5 Borrowings by farmers.

Banks are the institution mainly providing financial assistance to farmers. The table below shows the loan details of farmer

Table 3.4 Borrowings by farmers.

Criteria	No. of respondents	Percentage
Do you borrow money for carrying cultivation: No	30	100
Total	30	100
Reason for not availing loan: Subsidy	30	100
Total	30	100

Source: Compiled from survey

Table 3.5 depicts the details regarding the borrowing of money. Out of 30 farmers no farmers had availed loan for cultivation. The reason was adequacy of funds due to subsidy from krishibhavan. All the farmers are getting subsidy as part of Area Expansion Programme of government of kerala. 40 percent of cost of cultivation is given as subsidy through bank account of farmers.

3.2.6 Details regarding experience of farmers.

The table below shows the period the farmers were engaged in cultivation.

Table 3.5 Details regarding experience of farmers.

Criteria	No of respondents	Percentage
Experience in turmeric cultivation:		
< 5 years	5	17
5 – 10 years	11	37
10 – 15 years	10	33
>15 years	4	13
Total	30	100

Source: Compiled from survey

From the table it is clear that 37 percent of farmers were engaged in turmeric cultivation for 5–10 years, 33 percent of farmers were having the experience of 10 – 15 years and 17 percent of farmers were in this field for less than 5 years. Only 13 percent had more than 15 years experience in turmeric cultivation.

3.2.7 Details about harvesting of turmeric.

Turmeric is an 8 – 9 months crop. The main harvest season begins from end of January and extends up to March. Turmeric is harvested when leaves turn yellow and drying up.

Table 3.6 Details about harvesting of turmeric

Harvesting techniques used	No. of respondents	Percentage
Manual	30	100
Total	30	100

Source: Compiled from survey

From the survey, it was found that harvesting technique used by farmers is manual in nature.

3.2.8 Details regarding post harvesting

After harvesting, farmers are concentrating on drying of turmeric. Dried turmeric is selling to the village traders by farmers. No farmers selling turmeric directly to consumers, retailers and processors. Only drying of turmeric is undertaking at farmer level. No further value addition is taking place at this level.

3.2.9 Linkages with institution

Krishibhavanis playing important role in turmeric cultivation of Pazhayannur block. It provides subsidy in the form of money as part of programme 'Area Expansion of Turmeric' of Government of Kerala. Subsidy will be transferred from krishibhavan to bank account of farmers during different stages of cultivation. There lack of training in the field of cultivation of turmeric.

3.2.10 Marketing of turmeric

Selling of the produce is a function of different factors like its demand, price and the availability of post harvest infrastructure. If the produce is in demand and farmer is getting a remunerative price he will immediately go for selling of the produce, but if the conditions are otherwise the farmers will wait for some time before the price picks up. However this is not a universal phenomenon. Things also vary with the holding size and financial condition of the farmer. Opinion about the price received by farmers from village traders was also undertaken and the same is represented in Table 3.8.

Table 3.7 Opinion of farmers about price received

Opinion	No of respondents	Percentage
Unfair	2	7
Relatively fair	2	7
Fair	7	23
Good	19	63
Total	30	100

Source: Compiled from survey

From the above table it is clear that majority of the farmers were in the opinion that price received for turmeric from intermediaries is good.

3.2.11 Problems faced by farmers

Major problems faced by farmers during production of turmeric are variability in production, whether problems, non availability of labour, and non availability of good inputs. Economic problems faced by farmers are high labour charge, price fluctuation of produce, and poor marketing facilities.

Table 3.8 Details regarding constraints

Constraints	Total score	Index	Rank based on index
Production constraints:			
Pest and disease attack	61	34	4
Non availability of labour	157	87	1
Non availability of input	60	33	5
Whether problems	90	50	3
Variability in production	145	81	2
Lack of plant protection measures	45	25	6
Economic constraints:			
High cost of inputs	65	36	5
High labour charges	127	71	3
Price fluctuation of produce	150	83	1
Inadequate credit facilities	50	28	6
High transportation cost	133	74	2
Inadequate marketing facilities	125	69	4

Source: Compiled from survey

Table 3.8 shows problems faced by farmers in production of turmeric. Based on indices various problems can be ranked in the following order.1. Non availability of labour, 2. Variability in production, 3. Whether problems, 4. Pest and disease attack, 5. Non availability of input, and 6. Lack of plant protection measures. Economic constrains can be ranked in following order based on indices. 1. Price fluctuation of produce, 2. High transportation cost, 3. High labour charges, 4. Inadequate marketing facilities, 5. High cost of inputs and 6. Inadequate credit facilities. Non availability of labour, variability in production, price fluctuation of produce and high transportation cost are the serious problems faced by farmers during production and marketing of turmeric.

3.3 VILLAGE TRADERS

Village traders are the traders who are procuring turmeric from the farmers in the village and sold it to the wholesalers. A sample of five village traders were surveyed and analyzed. The socio-economic characteristics of the village traders in Pazhayannur block are analyzed on the basis of the attributes such as age, education, annual income and experience in trading.

It can be seen from Table 3.11 that out of the total respondents 80 percent of the village traders fell in the age group of 30-50 and 20 percent in the age group of 50-70. There are no respondents below the age of 30 years and above the age of 70 years. This is signaling the lack of interest of younger generation in agriculture trading. 60 percent traders have education of SSLC. All the village traders have the annual income in between 1 lakh- 2 lakh rupees. 40 percent of traders have experience of 2 – 4 years and 20 percent have 4 – 6 years. 40 percent of traders having more than 6 years experience.

Table 3.9 Socio- economic characteristics of village traders

Criteria	No. of respondents	Percentage
Age :		
<30 years	0	0
30-50 years	4	80
50-70 years	1	20
>70 years	0	0
Total	5	100
Education :		
Below SSLC	1	20
SSLC	3	60
Plus two	1	20
Graduation	0	0
Total	5	100
Annual income:		
< 50000	0	0
50000 – 100000	0	0
100000 – 200000	5	100
>200000	0	0
Total	5	100
Experience in turmeric trading:		
< 2 years	0	0
2 – 4 years	2	40
4 – 6 years	1	20
>6 years	2	40
Total	5	100

Source: Compiled from survey

3.3.1 Procurement of turmeric

Selected village traders were from two different panchayath (Chelakkara and Vallatholenagar). Out of five traders, 3 persons are procuring turmeric from Chelakkara village and 2 are from Vallatholenagar. Farmers are carrying their produce directly to village traders. All traders are making spot transaction with farmers.

Table 3.10 Form of turmeric traded by village traders

Form	No. of traders	Percentage
Cured turmeric	2	40
Fresh and cured turmeric	3	60
Total	5	100

Source: Compiled from survey

Table shows that 60 percent of the traders are trading both fresh and cured turmeric and 40 percent of the traders trading only cured turmeric. They are procuring fresh turmeric at ₹ 15 per kilogram. Along with turmeric they are also trade other products like nutmeg, areca nut, and pepper. The traders who are purchasing fresh turmeric will sell it after drying.

3.3.2 Marketing of turmeric

All the respondents are selling their product to wholesalers in the Thrissur district. They are fixing the price based on the price of newspaper. Majority of the traders hire vehicles for transporting the product to the place of wholesalers. None of the village traders had storage facilities. Major problem faced by them is fluctuation of price of turmeric. Presently the traders does not getting any assistance from Government or Spices Board. All traders are keeping good relation with the other actors (farmers and wholesalers) in the turmeric value chain.

Table 3.11 Problems faced by village traders

Constraints	Total score	Index	Rank based on index
Inadequate supply	12	48	4
Low profit	13	52	3
Unavailability of labour	6	24	5
Price fluctuation	25	100	1
Lack of storage facility	18	72	2

Source: Compiled from survey

Table 3.11 shows problems faced by village traders. Rank based on index indicates that serious problems faced by village traders are price fluctuation and lack of storage facility. Low profit and inadequate supply are moderate problems of village traders. Labour is not a serious problem to village traders.

3.4 WHOLESALERS

Wholesalers are the trader who procures turmeric from village traders and farmers within the district and sell it through different actors in channel. Wholesalers improve efficiency

in turmeric distribution by encouraging competition. Their role promotes stable markets for local produce and encourages increased output and productivity. Since there were no wholesalers identified in study area, Wholesalers from Thrissur town (near to municipal bus stand) were selected for the purpose of the study. A sample of three wholesalers was surveyed and analysis of socio-economic characteristics of respondents and various activities were presented in the following sections.

It can be seen from Table 3.10 that out of the total respondents 67 percent of the wholesalers fell in the age group of 50-70 years and 33 percent in the age group of 30-50. There are no respondent below the age of 30 years. All respondents were literate and 67 per cent traders have SSLC and 33 percent have plus two. All the traders have the annual income above 2 lakh Rupees. All the shops were having experience of 50 – 75 year

Table 3.12 Socio – economic characteristics of wholesalers

Criteria	No. of respondents	Percentage
Age :		
<30 years	0	0
30-50 years	1	33
50-70 years	2	67
>70 years	0	0
Total	3	100
Education :		
Below SSLC	0	0
SSLC	2	67
Plus two	1	33
Graduation	0	0
Total	3	100
Annual income:		
< 50000	0	0
50000 – 100000	0	0
100000 – 200000	0	0
>200000	3	100
Total	3	100
Experience in turmeric trading:		
< 25 years	0	0
25 – 50 years	0	0
50 – 75 years	3	100
>75 years	0	0
Total	3	100

Source: Compiled from survey

3.4.1 Procurement of turmeric

The wholesalers procure turmeric both from farmers and village traders from the different parts of the Thrissur district. Farmers and village traders are carrying their product to the place of wholesalers. All are making spot transaction with the wholesalers. Along with the cured turmeric they also trade other spices like pepper, chilli, tamarind, nutmeg, cashew, areca nut, etc.

3.4.2 Marketing of turmeric

From the wholesalers cured turmeric is sold to export agencies. These export agencies are exporting the turmeric to north Indian states which reaches in the hands of retailers or processing units. Wholesalers fix the price based on the price of newspaper and online. All of them have storage facilities with average capacity of around 200 sacks of cured turmeric. However, turmeric is immediately sold to different channels without storing because of the existence of high demand. They opinioned that sometimes supply cannot meet demand in the market. They were also pointed out that sometimes turmeric trading make losses due to fluctuations in the prices. The wholesalers does not getting any assistance from government or Spices Board. All the wholesalers are keeping good relation with the other actors (farmers and village traders) in the turmeric value chain. All of them are satisfied with the turmeric trading.

Table 3.13 Problems faced by wholesalers

Constraints	Total score	Index	Rank based on index
Inadequate supply	6	50	3
Price fluctuation	12	100	1
Export agencies take away a large part of profit	8	67	2
Unavailability of labour	4	33	4

Source: Compiled from survey

Table 3.13 depicts constraints faced by wholesalers. According to wholesalers, major problems based on rank are price fluctuation and large share of profit of export agencies. Inadequate supply of turmeric is a moderate problem to wholesalers. Labour is not a serious problem to wholesalers.

VALUE CHAIN MAPPING OF TURMERIC

CHAPTER 4
VALUE CHAIN MAPPING OF TURMERIC

4.1 THEORETICAL FRAME WORK

Value chain analysis has become a key approach in both research and policy fields, with an increasing number of bilateral and multilateral aid organisations adopting it to guide their development interventions. At the heart of value chain analysis lies the idea of actors connected along a chain producing and bringing goods and services to end consumers through a complex and sequenced set of activities. Poor producers often struggle to gain market access because they lack knowledge of market requirements or the skills to meet them. Furthermore, poor information flow and other obstacles in value chains prevent them from entering into new markets, or reduce the benefits they obtained from entry. 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.

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.

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)

4.1.1Filiere Approach

The 'Filiere' approach (filiere means thread or chain) includes various schools of thought and research traditions. Initially, the approach was used to analyses 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 floe 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.

4.1.2 Porter's Framework

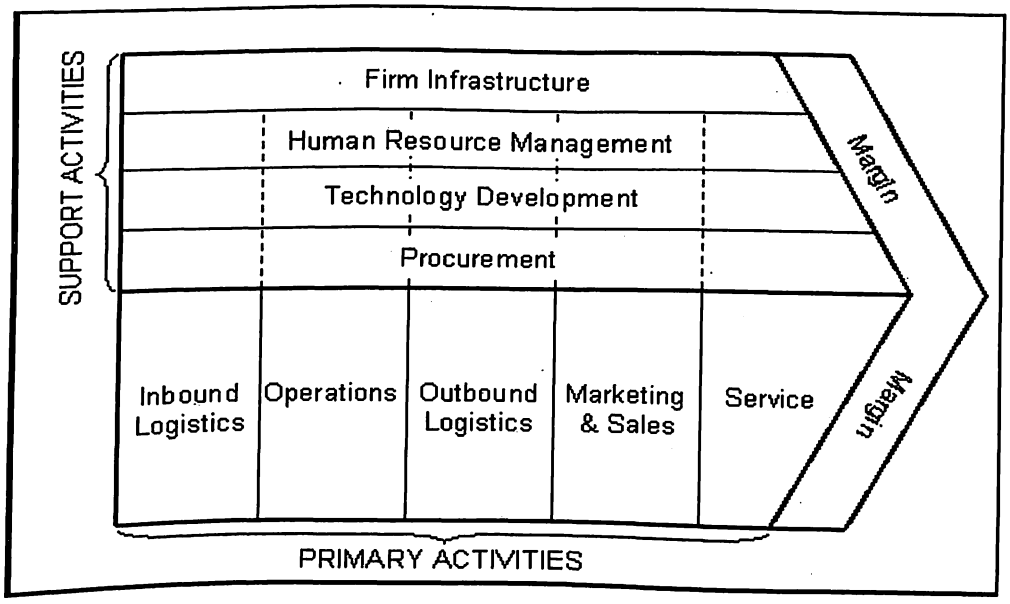
The second research stream refers to the work of Porter (1985) on competitive advantages. Porter has used the frame work of value chains to assess how a firm should position itself in the market and in the relationship with suppliers, buyers and competitors. The idea of competitive advantage of an enterprise 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 4.1.1 Porter's value chain



4.1.2.1Primary 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.

4.1.2.2 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 pplication. Consequently, value chain analysis mainly aims at supporting management ecision and executive strategies. For example, a value chain analysis of a supermarket in urope may point out that the competitive advantage of such a supermarket over ompetitors is the availability of exotic vegetables. Detecting the source of competitive dvantage 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.

4.1.3 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 frame work 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 frame work 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.

4.1.4 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.

4.2 VALUE CHAIN ANALYSIS OF TURMERIC IN PAZHAYANNUR BLOCK

After identifying the key value chain players and examining their functions, in Pazhayannur block, next step is to outline the value chain. Hence an attempt is made here to map the various activities involved in, from the cultivation 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 stakeholders involved in the value chain of turmeric. For this purpose, main players in the value chain of turmeric were identified and a primary survey was conducted among the different players. Mapping of value chain is done through following steps:

Step 1: Mapping the core processes in the value chain

Step 2: Mapping the main actors involved in the processes

Step 3: Mapping specific activities undertaken by actors in the value chain

Step 4: Mapping flows of product, information and knowledge in the value chain

Step 5: Mapping the geographical flow of the product

Step 6: Mapping the value at different levels of the value chain

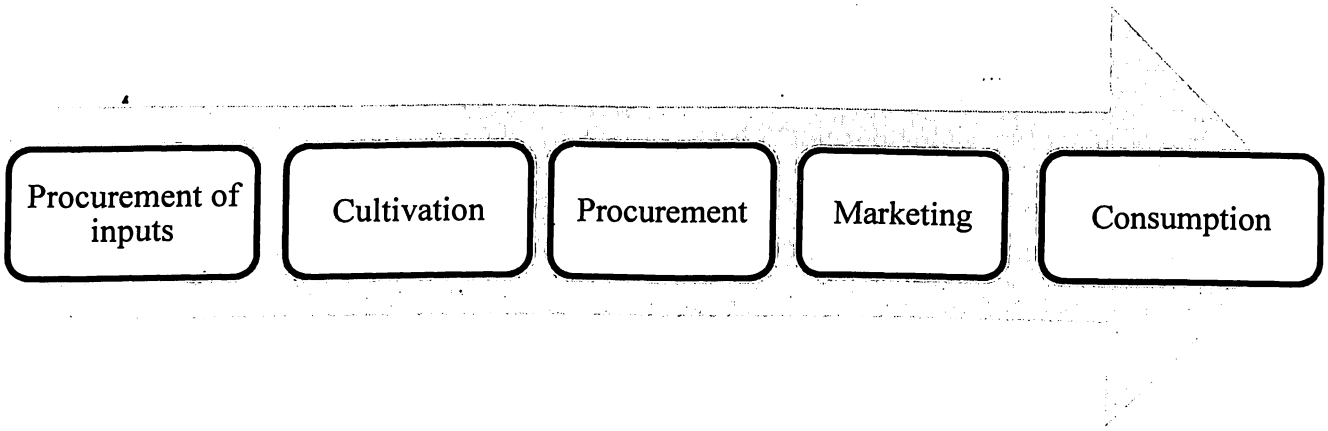
Step 7: Mapping relationships and linkages between value chain actors

Step 8: Mapping constraints at different levels of value chain

4.2.1 Core processes in turmeric value chain

Core process of value chain includes the major processes, starts from input provisions and the raw material goes through before it reaches the final consumption stage. The core processes in the value chain of turmeric is shown below:

Fig 4.1 Core processes in turmeric value chain



The study starts with mapping the core processes in the value chain of turmeric in Pazhayannur block of Thrissur district. Procurement of inputs, cultivation, procurement, marketing and consumption were the core processes identified in the turmeric value chain.

Procurement of input: The first process in the value chain of turmeric in Pazhayannur block is provision of inputs. Inputs needed for turmeric cultivation are mother rhizomes, organic fertilizers, irrigation, land and labour. The results of survey indicated that all the turmeric farmers were collecting the planting material from their own farm through traditional method. Krishibhavan is providing subsidy as part of "Area Expansion of Turmeric".

Cultivation: Farmers in the study area is not concentrating turmeric as main crop. They are doing turmeric cultivation as intercrop in rubber, arecanut and coconut plantation. It was revealed from the primary survey that organic farming is prevalent in the block. Because they think that use of chemical fertilizers and pesticides may make a negative impact of in the production of crop. The commonly used biofertilisers includes cow dung, compost and neem cake. Turmeric is an 8 – 9 months crop. The main harvest season begins from end of January and extends up to March. Turmeric is harvested when leaves turn yellow and drying up.

Procurement: Procurement can be defined as the collection and storing of turmeric. Procurement is done by the village traders. Farmers in Pazhayannur block will bring their turmeric from farm to the village traders and the village trader sells the same to the

wholesalers. Since the cured turmeric is not perishable, and easy to transport, most of the farmers and village traders prefer to trade turmeric as cured in nature. The village traders in Pazhayannur block have the dominant role in initial handling of the produce. Because the results of the survey shows that 100 percent of the cured turmeric in the block is sold to the village traders.

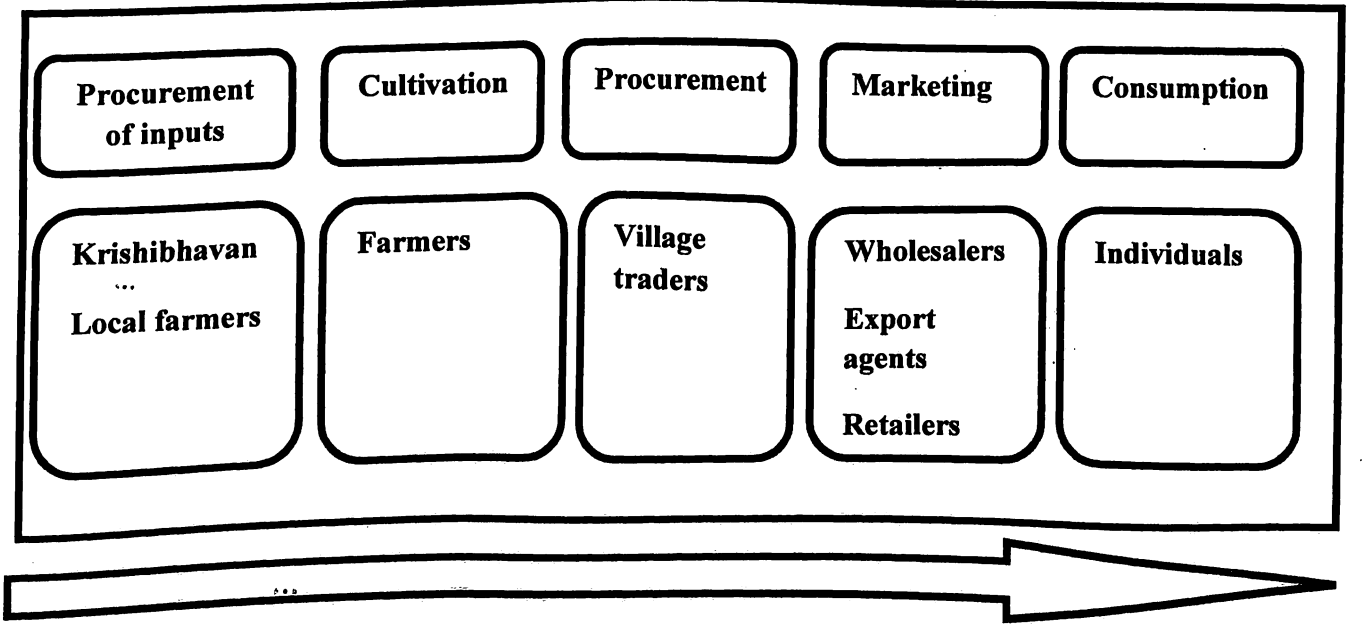
Marketing: Wholesaling and exporting are the major marketing ways of turmeric produced in Pazhayannur block. The agents collect the turmeric from wholesalers and also directly from large farmers and transported by means of rail, road to the north Indian locations like Mumbai, Delhi, Pune etc. From where it is transported to various processing units and retailers and finally reaches to the consumers.

Consumption: Consumption is the final stage in the chain in which end use of the product can be taken place.

4.2.2 Actors involved in the turmeric value chain

After mapping the core processes it is possible to move on to the actors- the people who are involved in the value chain. Value chain actors are those individuals or institutions that conduct transactions in a particular product as it moves through the value chain. These may include seed suppliers, farmers, traders, processors, transporters, wholesalers, retailers, and final consumers.

Fig 4.2 Actors involved in the turmeric value chain



Main actors involved core processes of turmeric value chain are krishibhavan, local farmers, farmers, village traders, wholesalers, export agents, and retailers.

Krishibhavan: krishibhavan provide subsidy at each stage of cultivation. Krishibhavan will identify the beneficiaries for the implementation of various schemes. They are also conducting extension programmes to the farmers including field verification and helps in the marketing of agriculture commodities.

Local farmers: Local farmers constitute another source of seed rhizomes 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, goat manure etc.

Farmers: farmers raise the crop and harvest it. Harvested turmeric will be dried by farmers and sell to village traders.

Village traders and wholesalers: The village trader sells the collected turmeric to the wholesalers. Usually they transport the product by hiring/ owned vehicles. They also trade other products like nutmeg, areca nut, pepper, and rubber. From the wholesalers turmeric is transported to various export agencies .These export agencies are exporting the turmeric to north Indian states. They are fixing the price based on the price of newspaper and online.

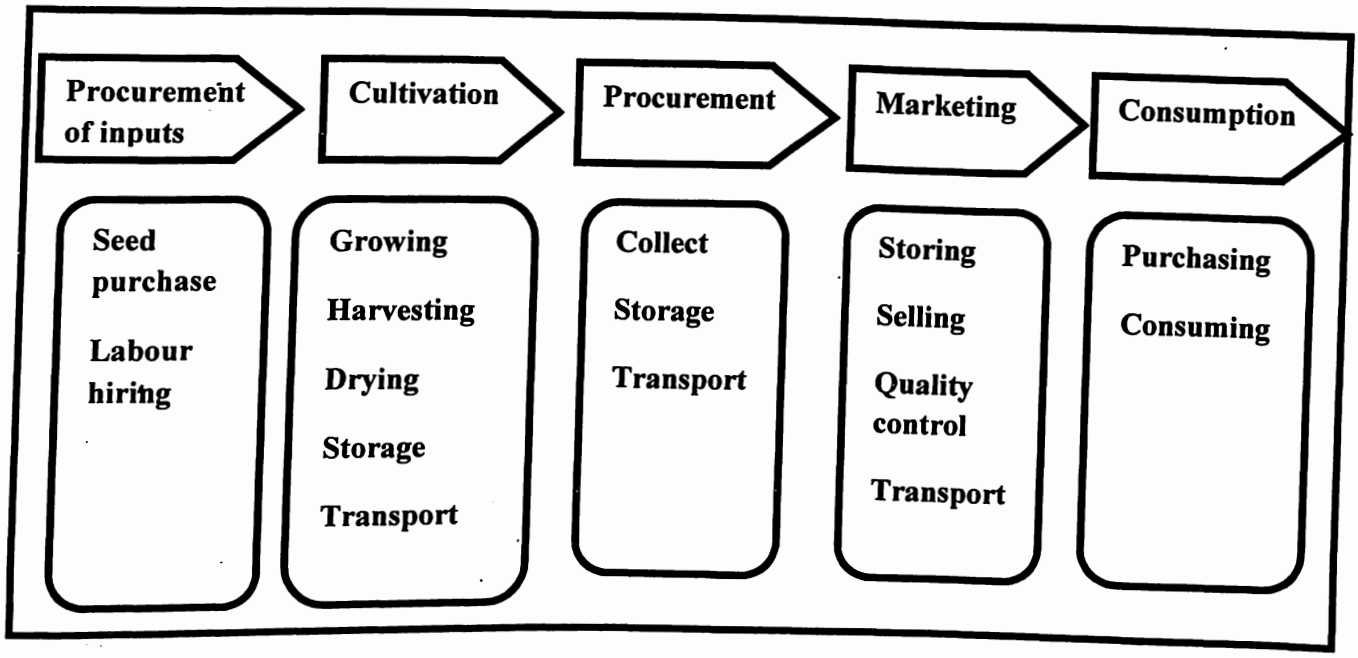
Export agencies: The duties of export agencies are collect the turmeric from the wholesalers and transport them to the importing place like north Indian states. The import agencies will take the duty of selling them into the various retailers or processing units.

Retailers: They sell different products of turmeric to end consumer of value chain.

4.2.3 Specific activities undertaken in turmeric value chain

The turmeric value chain comprises of various activities at its different stages. These activities includes supply of inputs to the farmers by the input suppliers, cultivation of turmeric by the farmers, trading of turmeric by the village traders and wholesalers, transport of turmeric to the national market by the export agencies and consumption by the consumers.

Fig 4.3 Specific activities undertaken in turmeric value chain

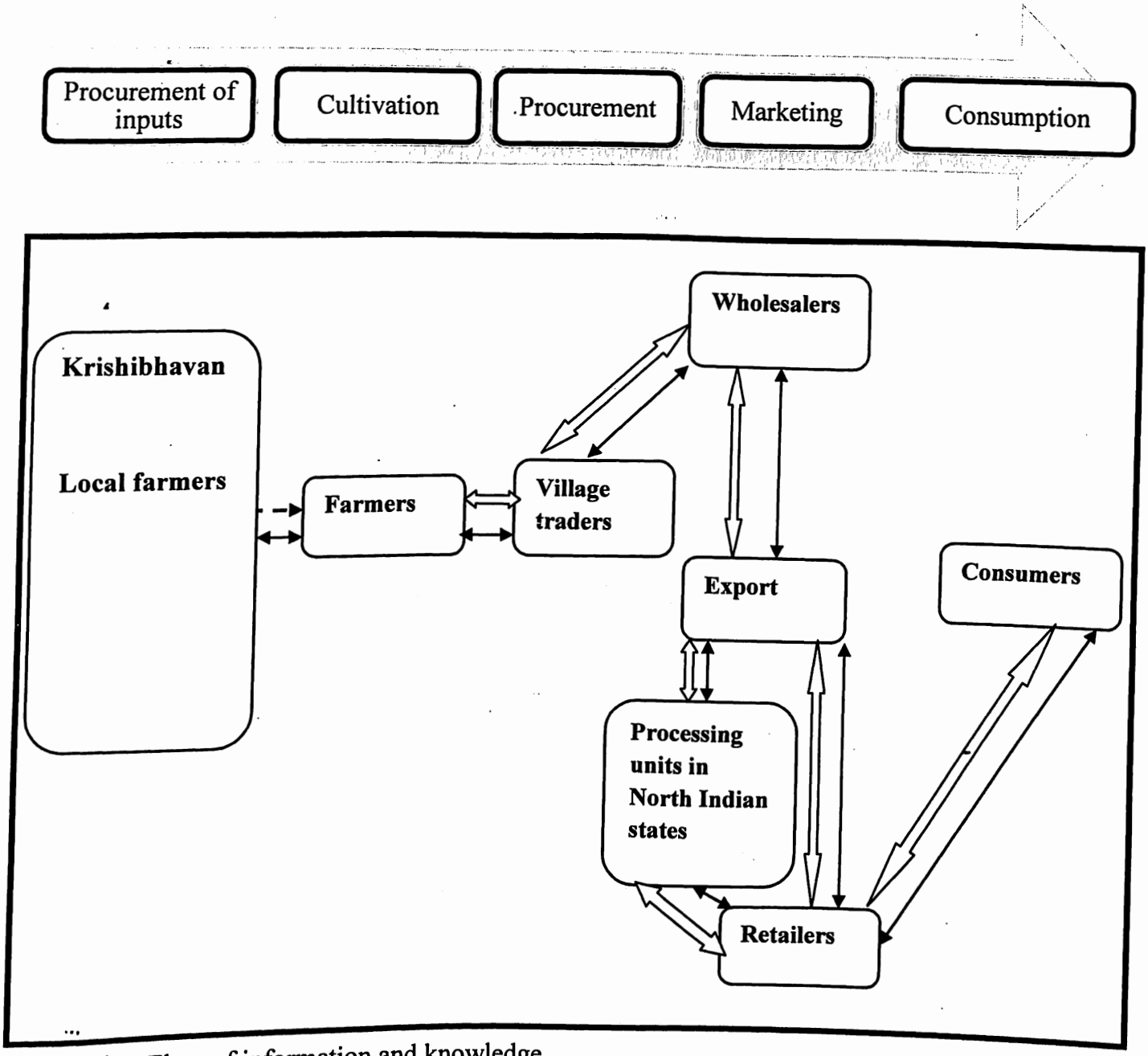


Agricultural inputs such as rhizomes, organic fertilizers, etc are developing in their own farm or procuring from local farmers. The farmers raise the crop and after harvest they sell the cured turmeric to the village traders. Village traders sell the produce to wholesalers and export agents collect the same from wholesalers and transport it to the north Indian states. Import agencies collect it from export agents and distribute it through various retailing or processing units and thus finally it reaches to the consumers.

4.2.4 Flows of product, information and knowledge in turmeric value chain

The fourth step is to map the flow of product, information and knowledge through value chain process. This involves identifying the products at each stage of the process as inputs are transformed to raw materials, then to intermediate materials and finally to end products. Mapping these flows creates a clear picture about the kind of products handled, transformed and transported at each stage of the value chain. Kinds of flows go through every value chain. These flows can be both tangible and intangible: tangible flows include flow of turmeric, money and recent developments in the turmeric cultivation. Other - intangible - flows, like information and knowledge, might be more complicated to capture in a visual map.

Fig 4.4 Flows of product, information and knowledge in turmeric value chain



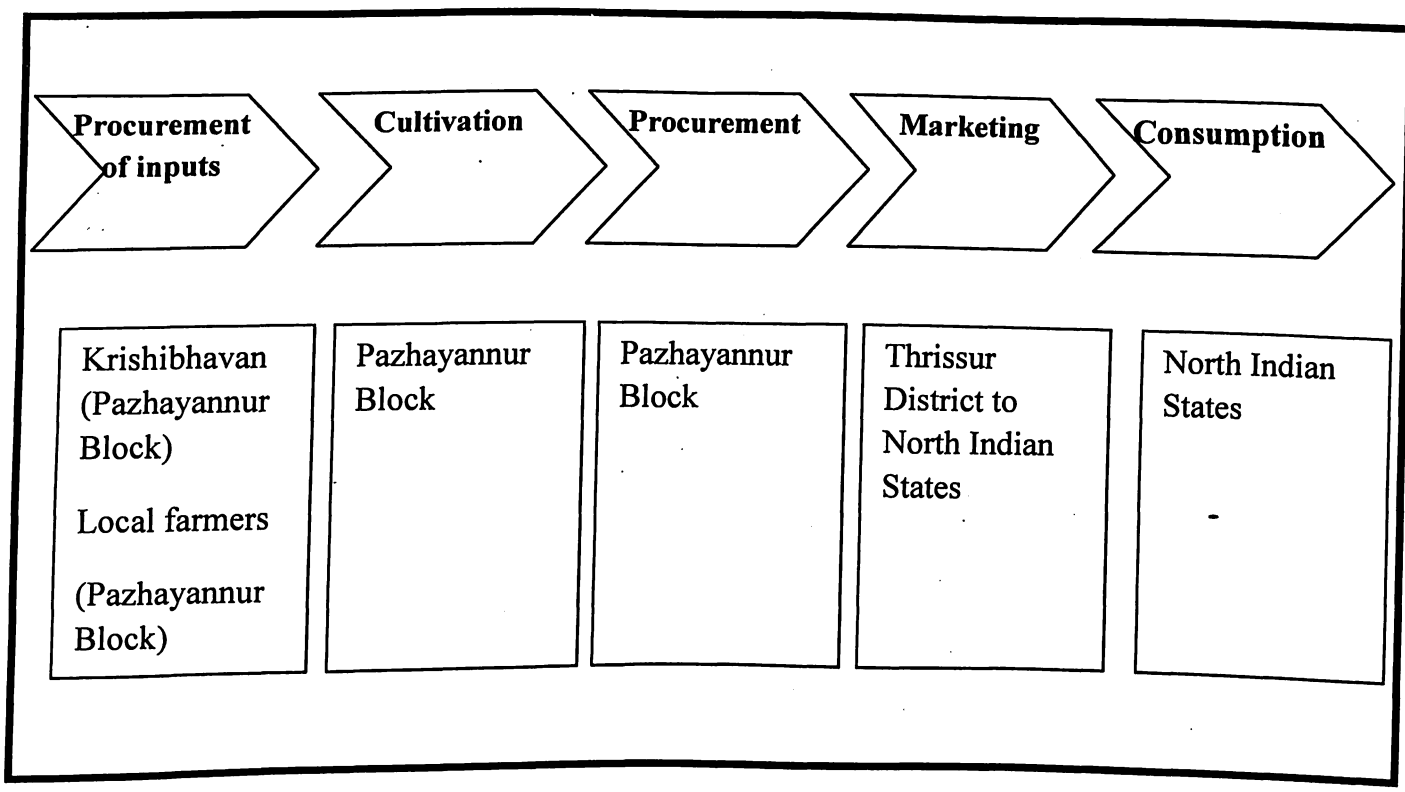
Input suppliers provide information on cultivation and prices of inputs to the farmers. They also supplies inputs to the farmers. Thus between the input suppliers and farmers there are flows of inputs and information and knowledge. From the farmers turmeric is transported to village traders and thereby occurs a flow of product and a flow of information about prices of turmeric and quality of turmeric are passed throughout the chain. From the traders the product is transported to the processors (in north Indian states) and consumers and results into a flow of product and information. In addition to the actors,

other channels like newspaper, television and internet are also providing information about the prices and quality specifications of the turmeric to the each stage of value chain.

4.2.5 Geographical flow of turmeric

The first step in the mapping of geographical flow of the product is to identify where each of the processes in the value chain are physically located. This mapping starts at the place of origin and tries to trace how the product travels from farmer to wholesaler, retailer and final consumer.

Fig 4.5 Geographical Flow of turmeric



Farmers get inputs from the Pazhayannur block itself and cultivation of turmeric is done in the Block. The process of procurement of produce is taken place in Pazhayannur block and marketing is done in Thrissur district and North Indian states. Major consumers of turmeric in Pazhayannur block are located in North Indian states.

4.2.6 Value at different levels of value chain

A core element of value chain mapping of turmeric lies in mapping the monetary value throughout the chain. The most straight forward depiction of a monetary flow would be look at the value that is added at every step throughout the chain, providing an overview of the earning at the different stages.

4.2.6 A Production cost- Farmer (for 1 kg)

Cost of production, revenue and margin of turmeric for the different actors calculated below,

Table 4.1 Production cost and margin of farmer

Production details	Cost (In ₹)	
Land preparation	10	
Seed	5	
Transportation	15	
Labour	20	
Drying & storage	8	
Organic fertilizers	7	
	Without subsidy	With subsidy (40%)
Total cost 1 Kg	65	26 (subsidy)
Selling price	72	39 (65 – 26)
Margin	7	72
		33

Table 4.1 reveals that subsidy of ₹ 26 per Kg reduces the cost of production of farmers and increases margin also. Cost of production with and without subsidy is ₹ 39 and ₹ 65 respectively.

4.2.6 B Cost at village traders level (for 1 kg)

Table 4.2 Cost and margin of village trader

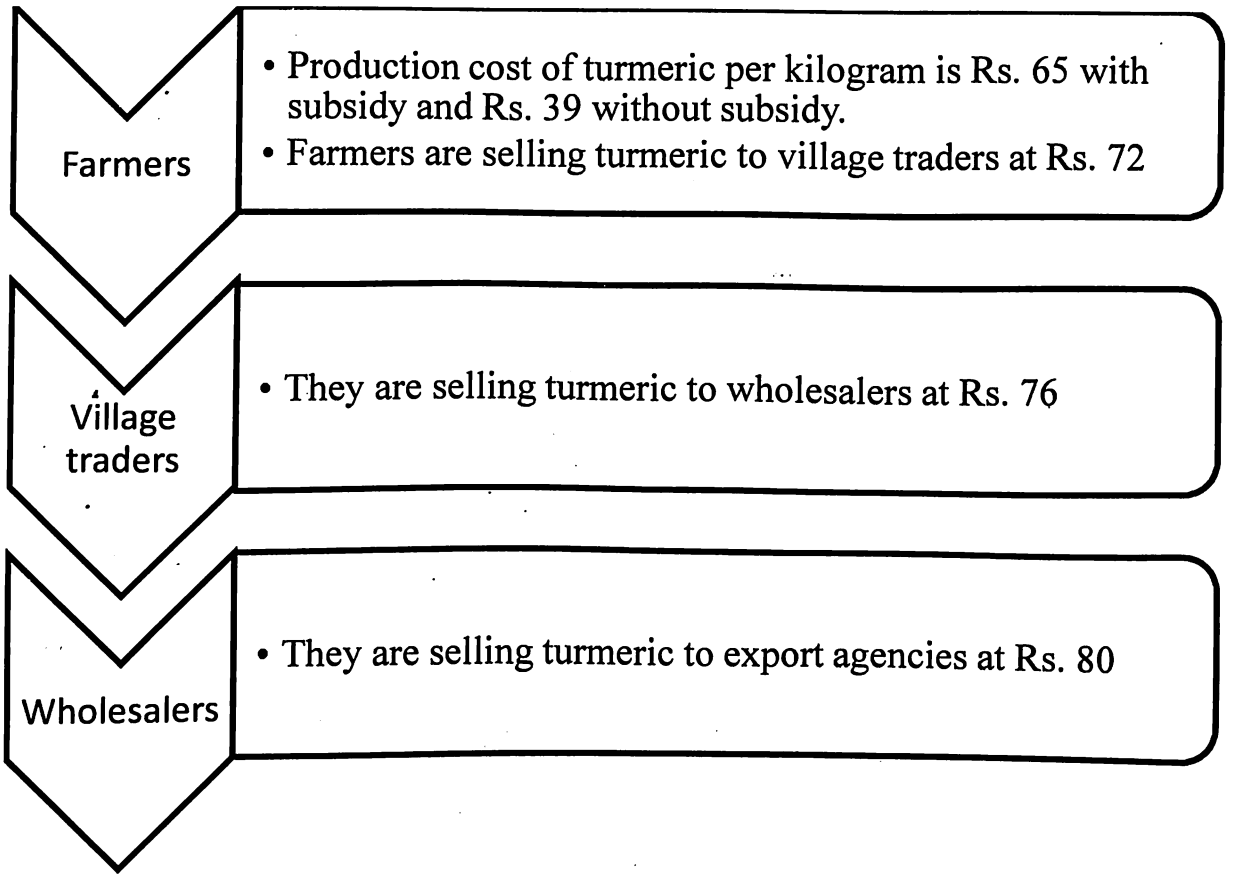
Details	Cost (In ₹)
Purchasing price	72
Transportation	1
Margin	73
Selling price	76
Total cost	3

4.2.6 C Cost at wholesalers level (for 1 kg)

Table 4.3 Cost and margin of wholesalers

Details	Cost (In ₹)
Purchasing price	76.00
Storage and maintenance	1.50
Total cost	77.50
Selling price	80.00
Margin	2.50

Fig 4.6 Value at different levels of value chain

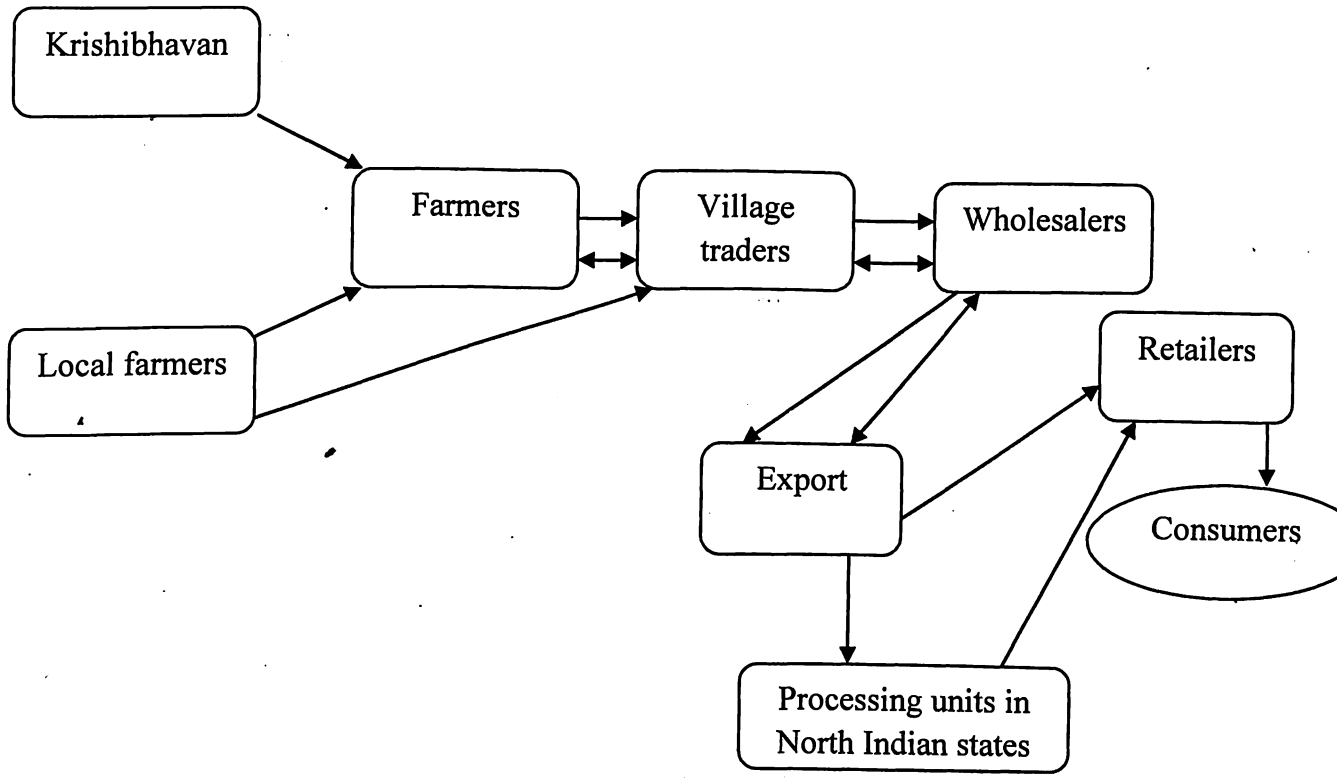


Farmers are selling their cured turmeric at ₹.72 /Kg. The village traders sell it at ₹.76/ Kg. And the wholesalers sell it to export agencies at ₹. 80 /Kg.

4.2.7 Relationships and linkages between value chain actors.

Mapping linkages between value chain actors starts with making an overview of the actors. The next step is to analyze what kind of relationship actors have. The sustainability of the value chain of turmeric depends largely on the relationships and linkages between the various actors of the value chain.

Fig 4.7 Relationships and linkages between value chain actors.



⟶ Spot market relations

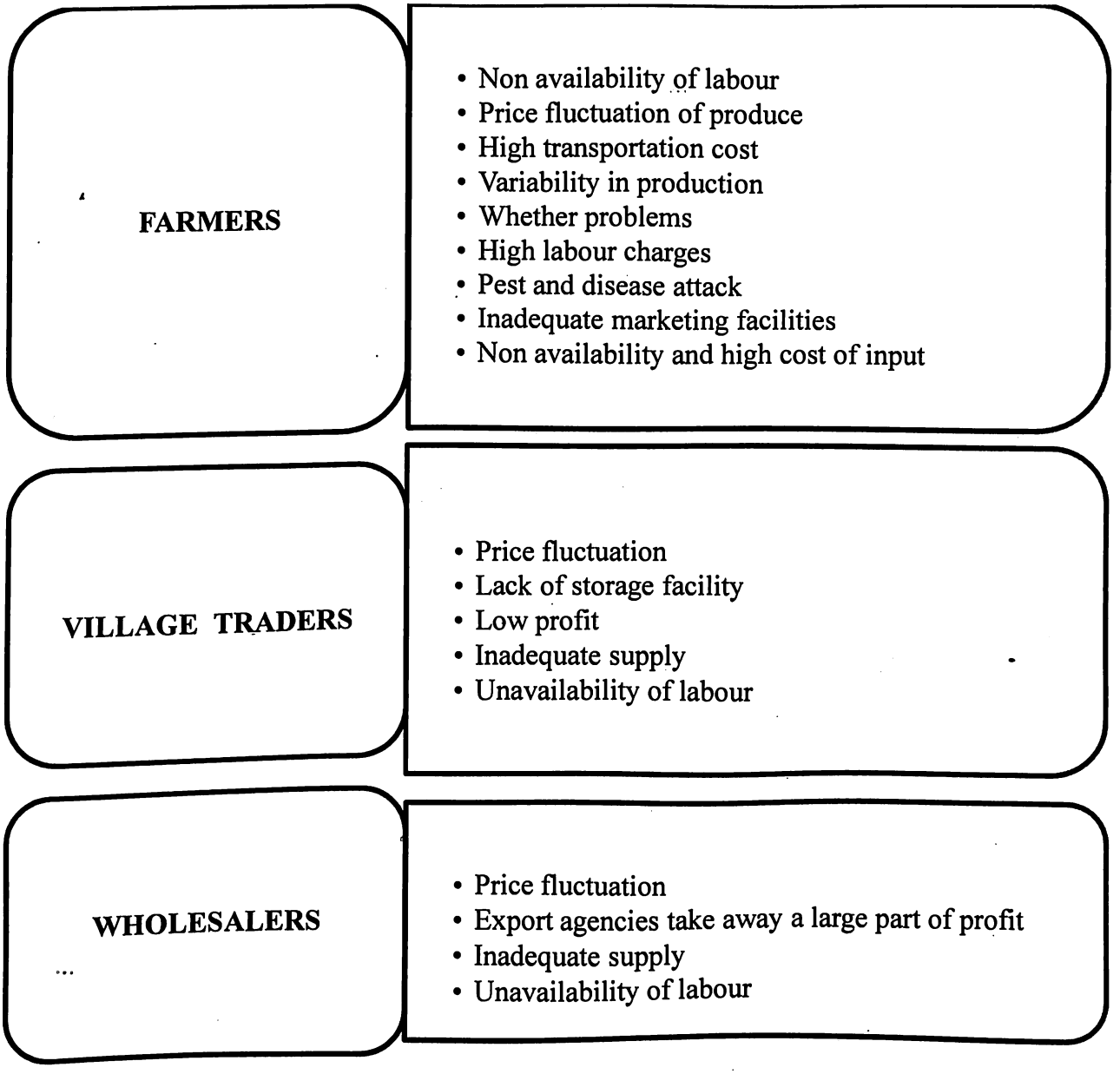
⟷ Persistent market relations

Krishibhavan plays important role in providing inputs to the farmers and there is a good relationship between farmers. So that, they provide seed and organic fertilizers to other farmers. There is persistent market relationship between farmers, village traders, wholesalers and export agents.

4.2.8 Constraints at different levels of value chain

Constraints exist in different levels of value chain is given below:

Fig 4.8 Constraints at different levels of value chain



The study was conducted with the objective of mapping the different components and stakeholders in the value chain of turmeric and to analyse the distribution of benefits at each level of value chain of turmeric. Procurement of inputs, cultivation, procurement, marketing and consumption are the core processes in the value chain. Farmers, village traders, wholesalers, export agents, retailers and consumers are the main actors involved in value chain. Specific activities undertaken by the actors are land preparation, planting, manuaring, irrigation, growing and harvesting, drying of turmeric, transport, storage,

export, processing , sale and consumption. Farmers bring the produce to the village traders for sale to wholesalers. The village traders have to pay prevailing market prices of turmeric. The major problems faced in input supply stage are the unavailability of good seed and high cost and low availability of labourers. Farmers face a lot of problems in production stage which include erratic climatic conditions, low productivity and yield, small size of land holdings and lack of scientific technology. The major problem faced by the traders is the inadequate availability of turmeric, price fluctuations, lack of market intelligence and non availability of required quality & quantity of produce.

SUMMARY OF FINDINGS AND CONCLUSIONS

CHAPTER 5

SUMMARY OF FINDINGS, CONCLUSIONS AND SUGGESTIONS

This chapter deals with summary of findings and conclusions of the study entitled "Value Chain Analysis of Turmeric – A Study with Special Reference to Pazhayannur Block". The study was undertaken with an objective of mapping of value chain of turmeric. To analyze the objective mentioned, a survey was conducted among 30 farmers, 5 village traders, 3 wholesalers and 10 consumers. Farmers were selected from Chelakkara and Vallathholenagar panchayath. Because these two panchayaths having considerable number of farmers. The list of farmers for survey was obtained from krishibhavans of these two panchayaths. The following are the major findings, conclusions and suggestions from the study.

5.1 MAJOR FINDINGS

- 50 percent of farmers were belonging to the age category of 45 – 55 years. It shows lack of interest of younger generation in agriculture.
- It could be found out that among the 30 farmers, 77 percent were males (23). It is clear that domination of male is high in agricultural operations.
- All the farmer respondents were literate and 57 percent of the farmers have education of below SSLC.
- At present agriculture is the main source of income for 93 per cent of the respondents.
- 57 percent of farmers having an annual income of below 1 lakh.
- 37 percent of farmers having experience of 5 – 10 years in turmeric cultivation.
- Out of 30 farmers, 87 percent have own land for turmeric cultivation. 13 percent of farmers having both owned and leased land for cultivation.
- All the farmers were cultivating turmeric as intercrop with rubber, coconut and arecanut.
- No farmers were concentrating on high yielding varieties of turmeric. They are not availing seed rhizomes of such varieties.
- 80 percent of village traders coming under the age group of 30 – 50 years. 60 percent of them having SSLC as educational qualification. Primary occupation of all village traders was business.
- 67 percent of wholesalers were in the age group of 50 – 70 years and majority of them were literate. All the wholesale shops having experience of 50 – 70 years.

- The core processes in the value chain of turmeric include procurement of input, cultivation, procurement, marketing and consumption.
- Once the core processes are mapped the next step is to identify the various actors involved in the value chain. Krishibhavan, local farmers, village traders, wholesalers, export agents, retailers and consumers are the major actors in the value chain.
- Third step is for identifying specific activities undertaken in the value chain of turmeric. Land preparation, planting, manuaring, irrigation, growing and harvesting, drying of turmeric, transport, storage, export, processing, sale and consumption are specific activities.
- Next step is to map the flow of product, information and knowledge in the value chain. Farmers getting information from Krishibhavan, local farmers, village traders, etc.
- Fifth step is to map geographical flow of product. Seed rhizomes are preparing in their own farm or from local farmers in Pazhayannur block. Other inputs are available in block itself. Procurement of produce done by village traders in Pazhayannur block. After procurement, turmeric goes to Thrissur and then North Indian states for marketing.
- Map the value at different levels of value chain is the sixth step. Total cost incurred by the farmers for producing 1 Kg. of cured turmeric is ₹. 65 and he get a margin of ₹. 7 from the village trader per Kg. Village traders get margin of ₹ 3/ Kg and wholesalers get margin of ₹. 2.50/ Kg.
- Next step is to map the relationship and linkages between the actors of value chain. There is existence of both spot market relations and persistent market relations.
- Then comes the mapping of constraints at different levels of value chain. The major problems faced in input supply stage are the unavailability of good seed and high cost and low availability of labourers. Farmers face a lot of problems in production stage which include erratic climatic conditions, low productivity and yield, small size of land holdings and lack of scientific technology. The major problem faced by the traders is the inadequate availability of turmeric, price fluctuations, lack of market intelligence and non availability of required quality & quantity of produce.
- 80 percent of the village traders fell in the age group of 30-50. 40 percent of traders having more than 6 years experience.60 percent traders have education of SSLC. All thevillage traders have the annual income in between 1 lakh- 2 lakh rupees.

- Farmers are carrying their produce directly to village traders. All traders are making spot transaction with farmers.
- All the village traders are selling their product to wholesalers in the Thrissur district. They are fixing the price based on the price of newspaper. Majority of the traders hire vehicles for transporting the product to the place of wholesalers.
- 67 percent of the wholesalers fell in the age group of 50-70 years. All respondents were literate and 67 per cent traders have SSLC and 33 percent have plus two. All the traders have the annual income above 2 lakh Rupees. All the shops were having experience of 50 – 75 years.
- The wholesalers procure turmeric both from farmers and village traders from the different parts of the Thrissur district. Farmers and village traders are carrying their product to the place of wholesalers. All are making spot transaction with the wholesalers.
- From the wholesalers turmeric is sold to export agencies. These export agencies are exporting the turmeric to north Indian states. Wholesalers fix the price based on the price of newspaper and online. All of them have storage facilities with average capacity of around 200 sacks of cured turmeric. However, turmeric is immediately sold to different channels without storing because of the existence of high demand.
- Wholesalers opinioned that sometimes turmeric trading make losses due to fluctuations in the prices. The wholesalers have not been received any assistance from government or Spices Board.
- Major consumers of turmeric of Pazhayannur block are located at North Indian states.
- Majority of the consumers surveyed in Pazhayannur block was having homestead cultivation for their own use.

5.2 SUGGESTIONS

The major factors identified as a problem in value chain analysis of turmeric were related to both production and marketing. Thus, proper interventions are required to alleviate these problems. Suggestions for recovering from such problems are following:

a) The study indicates that increase in production has an important effect to inputs supplied. Thus, it is very important to access modern inputs at the right time and the required amount at reasonable price to increase production. Farmers should be

provided with high yielding varieties of turmeric and required fertilizers at subsidized rate.

b) To solve the low prices received by producers, co-operatives like institutions have to be involved in marketing of turmeric significantly because cooperatives are service rendering organizations that do not strive for profit so that they will relatively purchase at a fair price from producers. These type of institutions can make arrangements for farmers to sell their produce directly to exporting agencies near to them. It helps farmers to improve their income.

c) The Scientific methods of turmeric production has a significant effect to increase production. Hence, continuous education and training that would change the production skill of producers is very important to change the attitude of them. Hence, concerned stakeholders need to provide continuous education and training in production and marketing of turmeric.

d) Turmeric processing facilities are poor in both rural and urban areas. To solve these problems storage and processing facilities should be there. Government should give necessary assistance for set up such facilities. It will help the farmers to get more margins from their produce.

e) The farmers are not aware about the crop insurance scheme. So government should take necessary steps to make aware them and assist the farmers from the loss due to the natural calamities.

f) Organic farm products have more demand in both domestic and international market. So, it should be promoted.

5.3 CONCLUSION

The study area Pazhayannur block is first in production of turmeric in Thrissur district. The actors involved in the value chain of turmeric are farmers, village traders, wholesalers, exporting agent, retailer and consumers. Farmers are facing lot of problems like unavailability of good seed, high cost and low availability of labourers, erratic climatic conditions, low productivity and yield, small size of land holdings and lack of scientific technology. Concerned stakeholders should consider such problems and it should be solved through above suggestions. There are no processing facilities in study area for turmeric. Potential of turmeric value added product should be explored. Hence, farmers can earn better earnings through marketing of turmeric

BIBLIOGRAPHY

BIBLIOGRAPHY

Babu, K.N., Suraby, E.J., Cissin, J., Minoo, D., Pradeepkumar, T., Parthasarathy, V.A., and Peter, K.V. 2013. Status of transgenics in Indian spices. *Journal of Tropical Agriculture.* **51**(2): 1-14.

Barnes, S.J. 2002. The mobile commerce value chain: analysis and future developments. *International Journal of Information Management.* **22**: 91-108.

Beamon, B.M. 1998. Supply chain design and analysis: models and methods. *International Journal of Production Economics.* **55**(3): 281-294.

Chaterjee, R., Hnamte, V., Chattopadhyay, P.K., and Pariari, A. 2012. Spices scenario in the north eastern states of india with special reference to production and marketing. *Journal of Crop and Weed.* **8**(2): 109-112.

Deepa, K.M. 2010. Turmeric: the golden spice. *Facts for You.* **30**(12): 19-20.

Devdas, J.M. and Shaheena, P. 2012. Supply chain management of ginger- a case study Wayanad district. Unpublished major project- MBA in Agribusiness Management, Kerala Agricultural University, Thrissur, 55p.

Fafchamps, M., Hill, R.V., and Minten, B. 2007.Quality control and the marketing of non- staple crops in India. *Proceedings of global supply chains, standards and the poor, CAB International.* 122-132.

Ferichani, M. and Prasetya, D.A. 2012. Satisfaction measurement on agribusiness product marketing. *Journal of Crop and Weed.* **8**(1): 7-11.

Ganeshprasad, T.S., Manjunatha, B.N., and Nataraju, M.S. 2010. Economics of production and marketing channels used by turmeric growers. *Mysore Journal of Agriculture and Science.* **44**(1): 144-147.

Kaplinsky, R. and Morris, M. 2000. *A Handbook for Value Chain Research.* International Development Research Center, Canada, 105p.

Kiruthika, N. 2013. The economics of production of turmeric in India: a case study of erode district of Tamilnadu. *Journal of Innovative Research and Solutions.* **1**(1): 23-30.

Kumawat, R.C. and Meena, P.C. 2005. Growth and instability in area, production, and yield of major spice crops in Rajasthan vis-à-vis India. *Journal of Spices and Aromatic Crops.* **14**(2): 102-111.

Madan, M.S. 2008. Changing scenario of turmeric production and marketing. *Agricultural Situation in India.* **65**(4): 193-210.

Murugananthi, D., Selvam, S., Raveendaran, N., and Meena, S.T. 2008. A study on the direction of trade in the Indian turmeric exports: Markov chain approach. *IUP Journal of Agricultural Economics*. **5**(4): 20-25.

Porter, M. 1985, *Competitive Advantage: Creating and Sustaining Superior Performance*, Free press, NewYork, 560p

Prabhavathi, Y., Kishore, N.T., and Seema, D. 2013. Analysis of supply chain of spices in India: a case study of red chillies. *International Journal of Scientific and Research Publications*. **3**(9): 1-4.

Rajesh, S.R. 2001. Export performance of major spices in India. Unpublished Thesis- Doctor of Philosophy in Agricultural Economics, Tamilnadu Agricultural University, Coimbatore, 70p.

Raphael, K. 2000. Spreading the gains from globalization: what can be learned from value chain analysis. *Institute of Development Studies Working Paper*. **110**:1-37.

Roy, S.S. and Hore, J.K. 2009. Bio-organic inputs for production of organic turmeric grown as intercrop in arecanut plantation. *Journal of Crop and Weed*. **5**(2): 39-42.

Shincy, S. and Karthika, V. 2013. Value chain in agriculture commodities: a case study of black pepper in Thrikkur Grama Panchayath. Unpublished B.Sc. (Hons) C & B project, Kerala Agricultural University, Thrissur, 99p.

Sujatha, R.V. 2006. Export competitiveness of spices in India. Unpublished Thesis - Doctor of Philosophy in Agricultural Economics. Acharya N G Ranga Agricultural University. Hyderabad. 75p.

Timsina, K.P., Shrestha, K.P., Chapagain T.R., and Sunita, P. 2011. Value chain analysis of turmeric (*Curcuma longa*) in Eastern Nepal. *Nepal Agricultural Research Journal*. **11**: 70-79.

Veerakumaran, G. (2012) Mapping the value chain of paddy- A case study of Palakkad District Procurement, Processing and Marketing Co-operative Society Limited (Paddico Ltd), Proceedings of supply chain – Issues and opportunities in a volatile global environment, *Lal Bahadur Shastri Journal of Research and Management*, 17-18 August 2012, 25-31.

www. nhb.gov.in
www.indianspices.com
www.apeda.gov.in
www.turmeric.co.in
www.turmericworld.com
www.ecostat.kerala.gov.in

ABSTRACT

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Value chain refers to the full range of activities that are required to bring a product (or a service) from conception, through the different phases of production, to delivery to final consumers and disposal after use. Mapping is the process of making a pictorial representation of the VCA (value chain analysis). The study was conducted with the objective of to map the different components and stakeholders in the value chain of turmeric to analyse the distribution of benefits at each level of value chain of turmeric. The study was based upon both primary and secondary sources of data. Primary data was collected through the survey of farmers, village traders, wholesalers, and input suppliers. Secondary data were collected from the published works of various authors, several journals and magazines. The collected data were analyzed by using the tools like Value chain mapping, Percentage Analysis and rank order scale.

Value chain mapping was made by analyzing the various dimensions like core processes in the value chain, actors involved in the turmeric value chain, specific activities of core processes, flow of product, information and knowledge, volume of product, geographical flow of product, value at different levels of value chain, type of relationship and linkages exists and mapping the constraints and potential solutions. The study attempted to analyze the value chain of turmeric in Pazhayannur block of Thrissur district. At each level, actors are adding values to the product. Turmeric cultivation in the study area gives a good return to the farmers because of the subsidy from Krishibhavan. Farmers face a lot of problems in production stage which include erratic climatic conditions, low productivity and yield, small size of land holdings and lack of scientific technology. Institutional support to farmers in input provision and marketing of turmeric is the major solution for the problems.

APPENDIX

COLLEGE OF CO-OPERATION, BANKING AND MANAGEMENT

KERALA AGRICULTURAL UNIVERSITY

VELLANIKKARA

VALUE CHAIN ANALYSIS OF TURMERIC-INTERVIEW SCHEDULE FOR SURVEY OF FARMERS

1. Name of the respondent:
2. Address :
3. Age : Below 35 years ☐
   Between 35-45 years ☐
   Between 45-55 years ☐
   Above 55 years ☐
4. Sex : Male ☐ Female ☐
5. Education : Illiterate ☐ Below SSLC ☐ SSLC ☐ Pre- degree ☐
   Graduation ☐
   Post Graduation ☐
6. Primary occupation : Agriculture ☐ Govt. employee ☐ Business ☐ Wage earner/Laborers/worker ☐ Private Job ☐ Others ☐
7. Annual income : Below 1 lakh ☐
   Between 1-2 lakh ☐
   Between 3-5 lakh ☐
   Above 5 lakh ☐
8. Farmers classification: Marginal farmers (0-1 ha) ☐
   Small farmers (1-2 ha) ☐
   Semi medium farmers (2-4ha) ☐
   Medium farmers (4-10 ha) ☐
   Large farmers (10 ha & above) ☐
9. Types of Land holdings : Owned ☐ Lease ☐ Both ☐

10. Details of land holding:

(In cents)

Total land holding		Area under cultivation	
Owned	Leased	Owned	Leased

11. Type of irrigation method adopted : Well ☐ Bore well ☐ Dam ☐ Pipe line ☐ River ☐

Other (specify)

12. Type of cultivation practice : Traditional type ☐ Modern type ☐ Both ☐

13. Cropping pattern :

Crops	Area (in acres)

14. Total area under turmeric cultivation: Less than 0.5 Acres ☐

0.5 - 2 Acres ☐

2-5 Acres ☐

More than 5 Acres ☐

15. Where do you get planting materials from: Own production ☐

Panchayat ☐

Krishibhavan ☐

Agri-department ☐

Private organization ☐ others (specify)

16. Which variety of turmeric are you cultivating?

17. Do you use fertilizers for cultivation: Yes ☐ No ☐

18. If yes, what type of fertilizers are you using? Organic Fertilisers ☐ Chemical Fertilizers ☐ Both ☐

19. Sources of procurement of fertilizers : Panchayat ☐

Krishibhavan ☐

Agri-department ☐

Private organization ☐ others (specify)

20. Do you use pesticides for cultivation: Yes ☐ No ☐

21. If yes, where do you get pesticides: Panchayat ☐

Krishibhavan ☐

Agri-department ☐

Private organization ☐ Others (specify)

22. Do you borrow money for carrying cultivation practices: Yes ☐ No ☐

23. If yes, sources of it: Co-operative banks ☐ Local moneylenders ☐ Commercial bank ☐ Others (specify)

24. Do you get subsidy of kind: Yes ☐ No ☐

If yes, what are they?

25. Transportation cost for input supply?

26. Input prices and provisions:

Inputs	Source	Quantity	Price / unit or interest rate	Subsidy
Seed Fertilizers Pesticides Finance				

27. Years of experience : < 5 years ☐

5-10 years ☐

10-15 years ☐

>15 years ☐

28. Problems during cultivation?

29. Type of labour you are using: Hired ☐ Family ☐

30. How long have you been harvesting turmeric?

31. To whom you directly sell turmeric?

Consumers ☐ Village traders ☐ Wholesaler ☐ Retailer ☐ Processors ☐

Others ☐

32. How do you fix price for turmeric? Market price ☐ Supply ☐ Demand ☐ Others ☐

33. Income for the produce last year?

34. How do you obtain information about price of turmeric?

35. In what form are selling your produce?

36. What is the institutional support are you getting for cultivation?

37. Are you getting training for cultivation?

38. What are the major problems during cultivation and after cultivation?

Constraints	Rank
Production constraints:	
Pest and disease attack	
Non availability of labour	
Non availability of input	
Whether problems	
Variability in production	
Lack of plant protection measures	
Economic constraints:	
High cost of inputs	
High labour charges	
Price fluctuation of produce	
Inadequate credit facilities	
High transportation cost	
Inadequate marketing facilities	

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KERALA AGRICULTURAL UNIVERSITY

VELLANIKKARA

VALUE CHAIN ANALYSIS OF TURMERIC-INTERVIEW SCHEDULE FOR SURVEY OF VILLAGE TRADERS/ WHOLESALERS.

1. Name of the respondent:
2. Address :
3. Age : <30 years ☐
   30-50 years ☐
   50-70 years ☐
   >70 years ☐
4. Education : Below SSLC ☐
   SSLC ☐
   Plus two ☐
   Graduation ☐
5. Annual income: < 50000 ☐
   50000 – 100000 ☐
   100000 – 200000 ☐
   >200000 ☐
6. Experience : < 2 years ☐
   2 – 4 years ☐
   4 – 6 years ☐
   >6 years ☐
7. From where you procured the turmeric?
   Farmers ☐ Other village trader ☐ Retailer ☐ Others ☐

8. Where did you sell the procured product?

   Wholesaler ☐ Retailer ☐ Processing unit ☐ Consumers ☐ Others ☐

9. Mode of fixing price for turmeric?

10. Mode of transporting the turmeric to the targeted markets?

    Owned vehicles ☐ Hiring vehicles ☐

11. Type of transaction you make?

    Spot ☐ Monthly ☐ No specific time ☐

12. In what form you are purchasing of turmeric?

13. Did you get any assistance from government or other agencies such as Krishibhavan?

    Yes ☐ No ☐

    Specify.....

14. Can you sell the procured product immediately or are you selling after sometime?

15. Do you have storage facilities? Capacity?

16. How many days will you store the turmeric?

17. Reasons for storage?

    Expecting future increase in price ☐ Low demand ☐ Inadequate quantity ☐

    Unavailability of marketing facilities ☐ Others (specify) ☐

18. Do you know final markets of the produce?

    Yes ☐ No ☐

19. If yes which are they?

20. From where did you get the market information?

    News paper ☐

    Television ☐

    Internet ☐

    Radio ☐

    Word of mouth ☐

    Others (specify) ☐

21. What are the other products that you trade?

22. Whether the supply of turmeric is adequate to meet the demand in the market? Yes ☐

    No ☐

23. If it is under supply, can the suppliers meet the demand individually? Yes ☐ No ☐

24. Are you satisfied with the turmeric trading?

25. Is it profitable business? Why?

26. Do you maintain good relationship with other actors in the value chain?

27. Linkages with other institutions?

Yes ☐ No ☐

28. If linkages exist, what are the benefits of these linkages?

29. How long been these linkages exist?

30. Constraints that you faced in trading?

31. Suggestions for improvement?

32. Constraints

Constraints	Rank
Inadequate supply	
Low profit	
Unavailability of labour	
Price fluctuation	
Lack of storage facility	