PRODUCTION AND MARKETING MANAGEMENT OF GINGER IN UTTARA KANNADA DISTRICT

Thesis submitted to the
University of Agricultural Sciences, Dharwad
in partial fulfilment of the requirements for the
Degree of

MASTER OF BUSINESS ADMINISTRATION

IN

AGRIBUSINESS

BY

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JUNE, 2011

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1. INTRODUCTION

India is rightly called as “spice bowl of the world” for its production of variety and superior quality of spices. Growing spices for various purposes have been famous since the ancient times. There are records about its various properties in Vedas as early as 6000 BC. India is well known for trade since the exploration of sea routes. All these attracted the foreigners to India and this was the key reason why India invaded by European countries and was imperialized. To such an extent India was famous for the spices. According to the Bureau of Indian Standards (BIS), 63 spices are grown in India. The spices are grown throughout the country from tropical to temperate climate. India has highest number of spice varieties in the world.

As per the definition of International spice groups “spices are any of flavored or aromatic substances of vegetables origin obtained from the tropical or other plate, commonly used as condiments or employed for other purposes on account of their fragrance, prevention or medicinal qualities. Among these, ginger is one of mainstay in Indian spice account, which has been used for flavoring and medicinal purposes. Ginger occupies fourth position among spices produced in India. With regard to export, ginger occupies fifth position in terms of quality and sixth position in export earning among spices. India exported 10500 tonnes of ginger valued at Rs. 64453.75 lakh in 2010-11. India has also imported significant quantities of ginger in various forms, viz. ginger fresh, ginger unbleached, ginger bleached, ginger powder (not elsewhere specified) including dried ginger to the tune of 12,807 tons valued at Rs. 1, 925 lakh in 2009-10. Nepal has been our main source of import.

Ginger is a member of the *Zingiberaceae* family and it originated in South-East Asia. It grows best in tropical areas that have high rainfall and hot and humid weather conditions. Ginger was introduced to Europe by Dutch, Portuguese, Arab and Spanish explorers or traders from about 13th to the 16th century. The name ‘ginger’ is derived from the sanskrit word *‘Srngaveram’* which means ‘horn root’. In South East Asia the most popular form of ginger is raw ginger. It is grated or finely chopped then added to the meal not long before serving. Ginger adds to the flavour of a meal creating afresh, spicy pungent taste which is now becoming a valued commodity all over the world. It is revered as one of the most important and valued spices of the world.

For over 5000 years ginger has been recognized as the “universal medicine” by the ancient orientals of China and India. Today ginger remains a component of more than 50 per cent of the traditional herbal remedies and has been used to treat nausea, indigestion, fever and infection and to promote vitality and longevity.

Ginger can and has been used in many different products. Ginger tea has been used as a carminative and for the treatment of colds at their onset for centuries. It has been used in China as a tonic. The Greeks, after a large meal, used to wrap bread around a piece of ginger and eat it to ease indigestion. In England, ginger was added to beer, forerunner to ginger ale, as a remedy for diarrhea, nausea and vomiting. The Chinese also considered ginger root to be an antidote to shellfish poisoning, explaining why it is found in so many sea food dishes. Ginger is popular because of its pungent flavour. It is a complement to many meals, drinks and desserts. Due to its popularity and diverse scope for product development it would be advantageous for the local communities of Nepal to value add their products. This would assist in gaining a higher profit margin for the local producers and product variety for consumers in local markets and in Kathmandu. It would lessen the gap between products produced in Nepal and those imported from overseas and be an import replacing Nepal made product. With an appeal for ginger-based preparations, ginger oil etc, have been encouraged. It is very useful for cold induced diseases, like nausea, asthama, cough, heart palpitation, syperia and home remedy in the country as it was 2000 years ago. These added medicinal values besides taste-maker need to be popularized, supported with clinical tests having scientific evidences. Ginger contains 2-3 per cent protein, 0.9 per cent fat, 1.2 per cent minerals, 2.4 percent fiber, 12.3 per cent carbohydrate and a good source of calcium, phosphorous, iron and vitamins. The pungency of ginger has all the constituents, which are needed for good health and improving the quality of food.

Ginger is one of the earliest known oriental spices and is being cultivated in India both as a fresh vegetable and as a dried spice since time immemorial. It is used in different forms such as raw ginger, dry ginger, bleached dry ginger, ginger powder, sliced ginger, ginger oil, ginger oleoresin, ginger ale, ginger candy, ginger beer, brined ginger, ginger wine, ginger squash, ginger flakes etc. It has usage in foods, beverages, preservatives, medicines and perfumery industries. Ginger is also an important foreign exchange earning crop. The processed products of ginger have high export value in the Middle East and some European countries.

India stands first in the production (273333 tonnes) of ginger and second in the area (80,000 hectares,) under ginger cultivation in the world (2003). Though the productivity of ginger in India is higher i.e. 3,417 kg/ha than the world's average productivity (2,546 kg/ha), it is very less than that of USA which is the highest (51,925 kg/ha) in the world. The crop exhibited an annual growth rate of 4.6 per cent in area, 7.4 per cent in production and 2.7 per cent in productivity in India in 2009-10. During 2009-10 ginger covered 104070 ha with an area and production of 382570 tonnes in the volume. Though grown all over India, the finest quality ginger comes from Kerala endowed as it is with a congenial climate and a rich earthy soil. Total area under ginger in Kerala is 81000 ha and production is 31700 tonnes. Indian dry ginger is known in the world market as 'Cochin Ginger' (NUGC) & 'Calicut Ginger' (NUGK). Indian ginger especially Cochin ginger is considered one of the best in the world. In India major ginger growing states are Kerala, Karnataka, Orissa, Meghalaya, West Bengal, Sikkim and Mizoram. In Karnataka with respect to area under ginger crop stands second (15000 ha) followed by Orissa (16100 ha). Ginger production in Karnataka is 19400 tonnes in 2009-10.

Demand for fresh ginger has increased in the domestic markets substantially in the recent past. India's 2009-10 ginger production was estimated to be 25-30 per cent more largely due to high price for ginger in the past few years. With ginger prices touching record levels last year due to shortage of the commodity, some farmers have again started growing ginger. In Uttara Kannada district total area under spice crops are about 1939 ha with production of 7519.07 tons in 2009-10. Among spice crops ginger is one of the major crop covering area of 277 ha and 6846 tons of production.

Uttara Kannada district is considered as the spice bowl of Karnataka. The hot humid climate with heavy rainfall and slopy land in the mountain ranges of malnad region possess to be the most suited land for successful growing of spices. In 2009-10 spices were grown in an area of 1939 hectares with a production of 7519.07 tonnes in the district. Ginger being the major spice in the district in terms of volume, though not in terms of value, was cultivated in the district in an area of 277 hectares with a production of 6486 tonnes (2009-10).

Need for study

In recent years ginger growers are facing several production and marketing problems. The problem in production includes non-availability of genuine plant material, high incidences of disease especially viral diseases, etc., which have threatened the cultivation of ginger. Enough farm business data on cost of production and marketing of ginger in Uttar Kannada district are not available. The information on establishment cost, operating cost and input requirement of ginger would be of immense help to ginger growers of Uttar Kannada region. It enables the farmers in making decision in farm planning and enterprise selection. The result will be of immense use to the financial institution in fixing the scale of financial and schedule of repayment for the crop.

The present study covers the production and marketing management of ginger and identifies the problems faced by the ginger cultivator in its cultivation and marketing. It envisages suggesting possible corrective measures to bring about the desired improvement in production and marketing of ginger. Hence, the present study was undertaken in Uttar Kannada district with the following specific objectives.

SPECIFIC OBJECTIVES OF THE STUDY

1. To analyze the cost and returns in production of ginger in study area.
2. To study the pattern of sales (management) and quantity sold by the producer.
3. To assess the price spread and marketing efficiency in the marketing of ginger through different marketing channels. .
4. To identify the production and marketing problems of ginger and to suggest appropriate policy guidelines.

LIMITATIONS OF THE STUDY

The present study mainly relied on the data collected through interview using pre-tested schedule. Therefore, some amount of recall bias is bound to be associated with the collected data since the farmers did not have any record about the cultivation expenses, application of inputs and returns. However, efforts were made to minimize them through cross checks at the time of data collection.

PRESENTATION OF THE STUDY

The study has been presented in six chapters as indicated below. Chapter-I deals with the nature, importance and specific objectives of the study: Chapter-II describes comprehensive review of the relevant research work done in the past related to the present study; Chapter-III outlines the features of the study area, sampling design followed, collection of relevant data and analytical tools used in the study; Chapter-IV is devoted to present the main findings of the study through tables; Chapter-V discusses the results of the study; Chapter-VI provides summary of the whole study and also suggests the policy implication based on the finding of the study. At the end, important references have been listed relating to the present study.

2. REVIEW OF LITERATURE

This chapter is intended to report the theoretical views and empirical evidence to the present study from the past findings and documentation. A review of the past research in the field has been done to enable a better understanding of the subject and the concepts.

Comparatively very few research studies have been carried out in the field of production and marketing of spices in India. In view of the limited literature on the production and marketing of ginger, some of the studies on the related crops were reviewed and included in this chapter under the following headings.

2.1 Costs and Returns

2.2 Pattern of sales (management) and quantity sold by the producer

2.3 Marketing channels, marketing costs and price spread

2.4 Problems faced in production and marketing

2.1 Cost and Returns

Satihal (1993) studied the cost and returns of Ber in Bijapur district, Karnataka. The results revealed that investment for establishing one hectare of ber orchard was Rs.97,415 and Rs.99,875 in large and small orchards, respectively. The share of material costs in the total investment was Rs.48, 218 in small orchards and Rs. 47,232 in large orchards. Recurring and maintenance cost during gestation period was Rs.50, 187 in large orchards while it was Rs.49, 659 in small orchards. Per hectare cost of cultivation during bearing period was relatively more in large orchards (Rs.28, 224) than in small orchard (Rs.27, 816). The net returns realized were high in large orchards (Rs.66, 991/ per ha).

Patil (1995) evaluated the "Techno-economic feasibility of mango plantation project in Konkan region of Maharashtra" using discounted cash flow measures such as payback period (PBP), net present value (NPV), internal rate of returns (IRR) and benefit cost ratio (BCR). The expected economic productive life of the mango orchard was assumed to be 58 years. The discount rate of 10 per cent was assumed to be the opportunity cost of capital. The results indicated that net present worth of Rs. 9074, Rs.35,144, Rs.27,840 and Rs.24,020 per ha for small , medium and large orchards and overall in that order and corresponding benefit cost ratio were 1.20, 1.51, 1.42 and 1.38, internal rate of returns were 13.9, 21.78, 18.48 and 18.10 per cent and payback period were 13, 8, 10 and 10 years in small, medium, large and overall mango orchards respectively.

Hiremath (1994) analysed the cost and returns of dry chillies in Dharwad district. The total cost of cultivation of chili per acre was Rs. 5942.64, while cost A was Rs. 3865.90 and cost B was Rs. 5110.39. The value of gross output was Rs. 5531.72. The farm business income was Rs. 1466.08 per acre and family labour income was Rs. 221.33 per acre.

Ravindrakumar (1996) studied the cost of production of gladiolus in Karnataka. He estimated per ha cost of cultivation of gladiolus to be Rs.2, 84,356.78. The total marketing cost incurred by the farmers was Rs.31.83 per 100 spikes of gladiolus. The major component of marketing cost was appropriated by transportation cost. The net returns realized per ha of gladiolus was Rs.1, 40,544.70.

Venkataraman and Gowda (1996) while studying the economics of tomato production in Kolar district of Karnataka computed the cost and returns of tomato production. The results revealed that the total cost of production was Rs. 36,611.51 per ha of which variable cost was Rs. 15,648.26, fixed cost was Rs. 2556.48 and marketing cost was Rs. 18,406.77. Though, the net return obtained was high compared to many other costs, the high cost of production along with some other factors discouraged farmers from increasing tomato production.

Chinnappa and Ramanna (1997) in their study on economic analysis of guava production revealed that per ha cost of establishment for the three year gestation period was Rs. 10592.08. The per ha cost of cultivation (4^{th} to 25^{th} year) was Rs.14, 239.50. The main items of costs were labour costs (5%), fencing and Plant Protection chemical (8%). The net return worked out to be Rs.6185.2 per year per ha.

Kerur *et al.* (1997), while studying the economics of sunflower production in North Karnataka viewed that the per hectare cost of production of sunflower was Rs. 5652.55, Rs. 5693.11 and Rs. 5587.73 for small, medium and large farmers, respectively. The average yield obtained for the overall sample was 8.99 quintal per hectare. The benefit: cost ratio was found to be 1.88 indicating sunflower production was a profitable enterprise.

A study on the cost and returns of garlic production was conducted by Shiyani and Kakadia (1998) in 1997-98 in Junagarh, Jamnagar and Rajkot districts, the three major garlic growing districts in Gujarat state, India. Total cost of garlic cultivation was Rs 56,588/ha of which, the operational cost was Rs 38,511 per ha. Seed accounted for the highest share of total cost (23%) followed by hired human labour, irrigation and chemicals. Average yield was 68.51 quintal per hectare. Gross return was Rs 26 185 per ha. Average marketing cost of garlic was Rs 40.37 per quintal and about 87 per cent of the total garlic production was marketed.

Mishra *et al.* (1999) studied the production and marketing cost of chillies and found that the total cost incurred by the marginal farmers was Rs. 22,782.63 per ha, while it was Rs. 18488.90 in the case of medium farmers. Of the total cost, expenditure on manure, fertilizer and human labour accounted for 28.19 per cent and 16.56 per cent, respectively. However, there were no substantial differences in the yield between marginal and medium farmers.

A comparison of per hectare cost and returns from moong, gram, maize, wheat, mustard and cotton on sample farms was carried out. Study revealed that pulse crops were less favorable in terms of net returns. Whereas, wheat followed by cotton have maximum net returns per hectare. Among pulses, moong yielded significantly higher returns than that of gram (Anonymous, 2002).

Purushottam Sharma (2002) studied the economic analysis of chrysanthemum cultivation and marketing in Jaipur district, Rajasthan. Data were collected from a sample of 60 farmers and 14 florists/retailers. Average cost of production was Rs. 580 per quintal while net return was Rs. 60 806 per hectare. Major cost items in chrysanthemum marketing were damage to the flowers, labour and transportation charges. The loss in the quantity of flowers was high (28.12% of total marketing cost). Producers received only 24.93 per cent from the price paid by consumers while florists earned a margin of 58.42 per cent.

Anil Kumar (2007) studied the economics of production and marketing of ginger in Nainital district of Uttarakhand. He worked out the cost and returns from ginger cultivation. Out of 68 villages in the block, six villages were selected on the basis of highest acreage under ginger. A random sample of 36 cultivators was drawn from the selected villages. The study revealed that the cost of cultivation of ginger was Rs.84,849.06 per hectare. The cost A1, which included all actual expenses incurred by the farmer, was worked out to be 40994.93 per hectare, other costs, viz, cost B2, cost C1, cost C2 and cost C3 worked out to be 40994.93, 69635.52, 77135.51 and 84849.06 respectively. The net returns over cost A1 were estimated to be Rs. 88637.64 per hectare and Rs. 1017.42 per quintal on sample farms.

Annesh (2007) studied on Production and marketing of under-utilized millets in Karnataka –an economic analysis. He worked out the cost and returns and resource use efficiency in under-utilized millets. Multistage sampling technique was employed in the selection of farmers for the study based on the production of little millets and foxtail millet in the state during kharif season. Dharwad and Haveri districts were selected. The per hectare total cost of cultivation of savi worked out to be Rs.7236.92, while the per quintal cost of production worked out to be Rs.603.08. Gross return realized from one hectare of savi grown by the sample farmers was Rs.8442.96.

Hatai and Baig (2007) studied the Economics of production and marketing strategies of potato in Orissa. Stratified random sampling techniques were employed to select the sample. Total 90 potato growers were selected. On the basis of different cost concept the cost of cultivation has been estimated. The net returns over different cost concepts have been estimated. The study revealed that was scope for further increase in the human labour for potato cultivation.

Naphade and Tingre (2008) studied the economics of production and marketing of guava in Buldhana district of Maharashra. The study was based on primary data of sixty farmers collected from five tahsils of Buldhana district. The selected guava growers were

classified into three groups on the basis of age of guava orchards. Simple tabular analysis and standard cost concepts were used to work out the cost of establishment and cost of cultivation of guava per hectare was Rs.34, 333 and Rs.22,522 respectively. It was found that profit was increasing with the age of orchards.

Awdesh *et al*. (2009) studied the economics of production of soybean in Block Sonkutch of district Dewas of Madhya Pradesh. Income obtained from soybean cultivation per hectare showed the increasing trend with the increasing in size of farms. The average yield of Soyabean was 16.87 quintal per hectare. The average cost of production per quintal was Rs. 851.39 and the average value of output was Rs. 21751.00 per hectare.

2.2 Sales Management and Quantity Sold by the Producer

Chojar (2001) conducted on an overview of marketing of medicinal plant materials in India. The market channels, market concentration of dried herbal materials, processing of raw materials, price trends, consumption and size of the herbal industry, trade trends, problems related to quality and variability in plant composition due to agro climatic conditions and also based on the vegetative stage of the plants were discussed.

Negi *et al*. (2001) studied the status of available marketing channels of tree produce from agro forestry systems supplying the timber market and forest based industries in Yamunanagar, Haryana. Results showed that the tree growers used various channels for selling their tree produce; viz. traders - industries, village level agents/contractors – traders - industries, village level agents/contractors-raw mills-consumers, traders-raw mills-consumers and traders-other markets of the state. It was found that 73 per cent of tree growers prefer to sell through village agents, 23 per cent through traders and only 4 per cent through industries. It was also observed that socio-economic factors such as literacy level, education and family size do not have any significant effect on the choice of market channels.

Negi and Bhalla (2002) studied the collection and marketing pattern of Medicinal Forest products in Himachal Pradesh. The study pertained to Medicinal and Aromatic plants (M&AP) extracted from Kullu Lahaul and Spiti dicstrict of the state. As the marketing of Medicinal and Aromatic plants were not regulated, the collectors were generally exploited and they received very low prices as compared to the market prices of various items sold by them. The net share of the collectors in consumer rupee worked out to about 14 per cent for Dhoop and about 28 per cent to Karu. One of the important channel of marketing of Medicinal and Aromatic plant I in the state was identified as sale through collectors-contractors-broker-wholesaler-consumer. It was concluded that in order to provide remunerative prices to the collectors, the marketing of Medicinal and Aromatic plants should be streamlined and co-operative efforts may be promoted which would help in creating a say in the market for Medicinal and Aromatic plants collectors, who individually are a very small-lot sellers.

Muhammad *et al*. (2003) conducted a study with the objective to find out the cost incurred and revenue obtained from off-season cucumber grown in Nowshera, Pakistan, based on data derived from 75 farmers. Out of total cost estimated for producing cucumber on per acre basis 60 per cent (Rs.55 906) accounted for production cost, 28 per cent for marketing cost and 12 per cent rent of land. The gross income from raising one acre of cucumber was Rs.1 ,82,100, with production of 14,822 kg and net revenue were Rs.79,102, and Rs.72,302, excluding and including rent of land, respectively. The benefit cost ratio showed that investing one rupee in off-season cucumber production would generate Rs.1.29. The study found that purchase of seed, labour charges, fertilizers cost, land rent and marketing charges were the major components of total cost of cucumber production. The estimation of revenue function revealed that revenue was significantly affected by the respective prices and production, with the exception of per unit cost. The exploitation of farmers at the hands of commission agents was the major complaint reported.

Birari *et al*. (2006) studied the farm level production, processing and marketing of turmeric in western Maharashtra. Two stage random sampling techniques adopted for this investigation. The study found that per hectare returns from the cultivation of turmeric was Rs. 27272.25. On account of processing of turmeric the value addition had resulted in more added benefits. The producer share in the price paid by consumer was quite satisfactory and can be increased due to the non-perishable product of processed turmeric.

Hernandez *et al*. (2006) studied the tomato farmer participation in supermarket market channels in Guatemala: determinants of technology and income effects. It showed that farmers selling in supermarkets (working via dedicated wholesalers) trend to be on the upper-end in the 'small farmer' category (whereas the traditional-channel growers are in the lower end), have more capital (particularly, irrigation, which allows them to supply all year and attain greater productivity and consistency), and much more specialized in commercial horticulture, particularly in tomatoes, as compared to traditional farmers. While they have higher yields, they also have higher input use, including use of chemicals and these greater input expenditures (accompanied by more credit and technical assistance from the chemical companies) means that their profit rate is roughly similar to the farmers in the traditional channel. These farmers prefer the more demanding wholesale-supermarket channel because it offers a lower risk and lower transaction cost for the variety of their qualities and grades.

Rama Rao *et al.* (2008) studied the price spread and efficiency of sorghum grains marketing in Mahabub nagar district of Andhra Pradesh. They documented the marketing channels in existence in case of sorghum grain. Total seven channels were identified with reference to sorghum marketing in the study area viz,

Channel I- Producer – Wholesaler - Consumer

Channel II-Producer - Commission agent - Wholesaler-Poultry unit

Channel III-Producer - Middleman/petty traders – Wholesalers - Poultry unit

Channel IV-Producer - Commission agent – Wholesaler – Retailer - Consumer

Channel V-Producer – Commission agent – Wholesaler – Broker - Poultry unit (white rabi sorghum)

Channel VI-Producer – Wholesaler – Broker - Poultry unit (white sorghum)

Channel VII-Producer - Commission agent – Wholesaler – Retailer - Consumer

Out of seven channels two were found to deal with white sorghum grain, remaining five channels were dealing with yellow sorghum grain produced during the rainy season.

Naval Kishore *et al*. (2009) studied the production and marketing of mushroom in Udaipur district of Rajasthan. They studied the marketing practices and channels involved in the marketing of mushroom in the selected area as one of the objectives. The study revealed that woman co-operative society was the most important agency in the marketing of mushroom. Average quantity sold on per farm basis was 6.17 quintal. Half of the producer-seller preferred to sell mushroom in 1 to 2 quintals size lot. Maximum quantity (about 66%) of mushroom was sold within the village by majority of producer-sellers (about 70%).

2.3 Price Spread and Marketing Efficiency in Marketing of Ginger through Different Marketing Channels

Chatha and Kaul (1982) examined the marketing costs and margins of potato in Punjab and found that out of the total cost of marketing incurred by producers (9.83% of retail price), packing cost had the highest share (6.25%) of the retail price followed by commission charges (2.48%) and transportation cost (2.50%). However, the total marketing cost incurred by the market functionaries accounted for 10.72 per cent of the consumer's price of which retailer (6.0%) had higher share followed by primary wholesaler (4.22%) and secondary wholesaler (0.5%). In the case of margins obtained, retailers (19.00%) realized higher share in the total marketing margin (27.28%) followed by primary wholesaler (4.5%) and secondary wholesaler (3.78%). It was concluded that the margins of primary wholesaler was justified since he borne the risk of investing more capital, time and labour to create time, place and possession utilities to the commodities unlike secondary wholesalers who obtained higher share without much risk.

Subramanyam (1982) studied the efficiency of different channels in marketing of vegetables in Madurai district of Tamil Nadu and observed that 77.97 per cent of the producers disposed their cabbage to pre-harvest contractors followed by carrot (50%), as against 22.03 and 30.00 per cent of cabbage and carrot sold through wholesalers at the field. However, majority of the producers (93.10%) sold cauliflower directly to the retailers.

Hugar and Anand (1984) while studying the efficiency of alternative channels in marketing of vegetables in Belgaum city of Karnataka state, found that the price spread in the case of cabbage (48.31%) and brinjal (52.79%) were lower when sold through co-operative society(50.29%) and 24.74 per cent when sold through commission agents. Thus, it was obvious, that the net price received by the producer was observed to be higher from cabbage (57.69%) and brinjal (47.21%) when sold through the co-operative society as compared to 49.72 and 45.26 per cent, respectively when sold through the Commission agents.

Kiresur (1987) in his study on marketing of vegetables in Dharwad and Hubli vegetable markets identified the existence of two channels namely,

Channel-I: Producer-seller - Commission agent - Wholesaler - Retailer – Consumer

Channel II: Producer - Seller - Village merchant - Commission agent cum wholesaler - Retailer - Consumer.

Of these two main channels identified, channel-I was found to be more efficient in terms of the net price received by the producer-seller and the price spread. Channel-I was found to be more popular than the Channel–II in terms of number of farmers and quantity sold.

Sharma and Pant (1988) in their study on marketing of vegetables in south Saurashtra zone of Gujarat found that the total marketing cost incurred by the producer was the highest in highly perishable vegetables, namely tomato (Rs. 108.04/q) followed by chillies (Rs. 101.84/q), brinjal (Rs. 61.75/q.), cabbage (Rs.50.44/q) and bottle gourd (Rs.45.74/q). The commission charge paid to the commission agent formed the major component of total marketing cost. At the retailers level, the total expenditure incurred was also the highest in the case of tomato (Rs.139.76/q) followed by chilies (Rs. 65.98/q), brinjal (Rs. 61.12/q), cabbage (Rs. 45.82/q) and bottle gourd (Rs.33.32/q). Among the different items of expenditure at retail level, the spoilage cost formed major component of total retail cost in all the vegetables. However, producer's share in consumer's rupee was found to be lower in brinjal (56.87%) and tomato (56.89%) compared to cabbage (62.30%), chilies (61.01%) and bottle gourd (59.65%).

Subrahmanyam (1988) identified three channels for marketing of vegetables in Karnataka namely, Producer—Commission agent at the market (channel-I), Producer – Pre-harvest contractor (Channel-II) and Producer—Retailer (Channel-III). The commission charge paid was found to be the major cost constituting 44 to 66 per cents of the total marketing cost incurred in all the vegetables, namely cauliflower (Rs 23.75/q), french beans (Rs.21.46/q), carrot (Rs. 20.36/q), brinjal (Rs. 19.79/q) and bhendi (Rs. 18.16/q). This was followed by cost on transportation, loading and un-loading, packing and marketing fee.

Koujalagi and Kunnal (1992) made an attempt to identify the marketing channels and estimated the marketing costs of pomegranate in Bijapur district. They identified two channels.

Channel-1: Producer - Pre harvest contractor - Commission agent cum wholesaler - Retailer-Consumer.

Channel-2: Producer - Commission agent cum wholesaler – Retailer - Consumer.

The total marketing cost incurred by pomegranate producer-seller was Rs.71.94 per quintal. Four items namely commission, transportation, packing material and harvesting together formed 95.88 per cent of total marketing cost. The other items, namely labour charges and miscellaneous expenditure constitute the remaining part of marketing cost.

Vedani and Gracy (1995) analyzed the marketing cost for Jasmine flowers in the Mysore city for the year 1992-93 and has observed to be more than 15 per cent of the value of the flowers sold by the farmers under this marketing channel. Further they studied the performance of marketing channel which was identified as

Producer – Trader/commission agent – retailers - consumers

They found that producer's net share was as low as 45 per cent. The trader-cum-commission agent and retailer cost and margin were 6.02 and 45.78 per cent respectively.

All the farmers opined that non-availability of adequate financial help for cultivating the crop was a major production problem. About 85 per cent of the farmers felt that commission charges were high.

Singh (1996) studied the price spread of citrus fruit in mid hill of Jammu and Kashmir. An overall view of results revealed that producers share in consumer's rupee was 55.71 per cent in channel I (Producer - Pre-harvest contractor – Retailer - Consumer) and 81.25 per cent in channel II (Producer – Retailer - Consumer).

Saraswat (1997) conducted a study on organization of production and marketing of apple in Himachal Pradesh: A case study of Kirari village. The study found that in the study area on an average the farmer incurred Rs.26.72 on packing. The channel used by the most growers was Producer - Forwarding agent - Commission agent – Wholesaler – Retailer - Consumer. The analysis revealed that the producers share in consumer's rupee was 42.28 per cent. The marketing cost borne by the producer was 31.64 per cent of consumer's rupee.

Chahal *et al.* (1997) in their study on marketing of tomato in Amritsar market of Punjab identified the following two major channels viz,

Channel-I: Producer - Wholesaler – Retailer - Consumer

Channel –II : Producer - Retailer - Consumer

The price received by the producer was found to be higher in channel-II (Rs.145.26/q) over channel –I (Rs.117.91/q) in summer season. Similar trend was observed in winter season also.

Patel *et al.* (1997) in their study on marketing efficiency of vegetables in Anand market, Gujarat found the concentration of market power with 10 big firms in the case of both the cabbage (28%) and potato (20%). About 28 per cent of the marketing firms performed two or three marketing functions indicating their vertical integration. However, 12 firms were having horizontal integration. They concluded that even though market was regulated since long, some malpractices were still existed.

Chauhan *et al.* (1998) reported that for the marketing of vegetables in Azamgarh district of Uttar Pradesh; three channels were patronized by the vegetable growers for disposal of their vegetables. The channel involving commission agent and retailer was found to be the most important and adopted by majority of the farmers. However, the producer's share in consumer's rupee was maximum (90 to 94 %) in direct sale of vegetables to consumers whereas, it ranged between 85 and 89 per cent when sold through commission agent. Further, in the most predominant channel, which included producer, commission agent, retailer and consumer, the net price received by the producer (60.63%) was found to be the lowest. Thus, there is a need of the most popular channel which would be efficient, cost effective and producer-friendly, by regulating the substantial trade margins taken by the traders. viz,

Channel-II: Producer - Retailer - Consumer, and

Channel-III: Producer – Wholesaler – Retailer - Consumer.

The share of the producer's in consumer's rupee was found to be higher in channel-I (89% to 96%) as compared to channel-II (68.50% to 83.60%) and III (62.70% to 73.15%). However, channel-II was found to be popular among the farmers than the other two channels in terms of quantity disposed.

Singh *et al.* (1999) studied the marketing of tomato in Hoshiarpur district of Punjab and observed that the net price received by the farmers was higher (Rs.l72.50) when sold in local market as compared to the processing units. Similarly, per acre net returns obtained by farmers was also higher when the produce was sold through local market (Rs.24, 150 per acre) than those sold to Pepsi foods Rs.20, 808 per acre) and Nijjar Agro Foods, even though the marketing costs were, higher in local markets.

Vasudev and Chowdry (1999) identified two marketing channels which were predominant in marketing of tomato in all the three regions of Andhra Pradesh, viz.,

Channel-I: Producer - Commission Agent - Secondary Wholesaler - Retailer - Consumer,

Channel-II: Producer - Commission Agent - Primary Wholesaler - Retailer - Consumer.

The producer's share in consumer's rupee was found to be substantially higher in channel-I over channel-II in all the regions (coastal Andhra, Rayalseema and Telangana) of Andhra Pradesh, indicating better efficiency of channel-l over channel-II.

Baruah and Barman (2000) studied the economic analysis of production and marketing of tomato in Barpeta district of Assam. The marketing cost, marketing margin, marketing efficiency, benefit-cost ratio and price spread involved in the production and marketing of tomatoes in Barpeta district, Assam, India, were estimated based on data for the period 1997-98 collected from 5 primary wholesalers, 7 secondary wholesalers, and 10 retailers. Net returns over costs showed direct relationship with farm size. Producers' return was found to be highest when the farmers sold their produce through secondary than through primary wholesalers.

Chole *et al.* (2003) studied the price spread in marketing of brinjal in Maharashtra state This study examines the channels, costs, margins and efficiency of marketing brinjal in Maharashtra, India. They were obtained from a sample of 100 growers in Panvel tahsil, Raigad district, as well as from 5 retailers, 5 wholesalers and 5 commission agents. The producer's share in consumer's rupee was highest in channel I (68.28%), followed by channel II (57.94%) and channel III (53.14%). The total marketing cost was highest in channel III and lowest in channel I. Marketing efficiency was highest in channel I, followed by channels II and III.

Shamsher-Singh and Chauhan (2004) studied the marketing of vegetables in Himachal Pradesh. Survey was conducted among 80 vegetable growers in Himachal Pradesh, India, to study the channels, cost, margins, and efficiency of vegetable marketing in the state. Results show that most of the vegetables are marketed through the channel involving wholesalers/commission agents and retailers. This lead to an increase in wastage and marketing cost. Furthermore, due to the perishable nature of vegetables and the huge glut during the peak season, farmers do not get remunerative prices.

Sharma and Pant (2006) studied price spread and problem in marketing of onion in Agro-climatic zone2- A of Rajasthan. Here multistage random sampling technique was used for the selection of sample. Total 60 farmers from four villages, four wholesalers and four retailers were selected randomly. Three marketing channels were observed viz,

Channel 1: Producer - Consumer

Channel 2: Producer - Local traders - Consumer

Channel 3: Producer - Commission agent – Retailer - Consumer

The producers share in consumer rupee was higher in channel 1 followed by channel 2. The study suggested that to remove the entire problem faced by the producers in marketing of onion, proper storage facility and marketing facility should be advised to market through co-operative marketing societies.

Tripathi *et al*. (2006) studied price-spread and marketing efficiency in marketing of ginger through different marketing channels in Meghalaya. They found out a total of four channels.

Channel I: Producer - Village traders/commission agent at village level – Retailer - Consumer

Channel II: Producer - Commission agents at local market - Wholesaler – Retailer - Consumer

Channel III: Producer - Commission agent – Retailer - Consumer

Channel IV: Producer - Small trader - Commission agent – Retailer - Consumer

Anil Kumar (2007) studied the channels, costs, margins and price spread in the marketing of ginger. He selected a random sample of five intermediaries of each category, viz, wholesaler cum commission agents, wholesalers and retailers which was selected from the principal ginger market of the area. In all, three channels were identified in the marketing of ginger in the area. viz,

Channel I: Farmer – Consumer

Channel II: Farmer – Wholesaler cum commission agent – Retailer – Consumer

Channel III: Farmer – Wholesaler cum commission agent – Wholesaler – Retailer – Consumer

It was observed that the producer's share in the consumer's rupee was the highest in channel I (90.12%) followed by channel II (62.66 %) and channel III (58.91%) with reflected its inverse relationship with number of middlemen in the channel. Similarly, the net price realized by producer was the highest in channel I because of absence of any middlemen.

Harshimranjeet and Kumar Singh (2007) studied the price spread and marketing efficiency of kinnow in Srinagar. They studied marketed surplus and disposal pattern, different marketing channels and marketing costs as well price spread in different channels in the distant marketing of kin now. They identified two channels

Channel I: Producer - Pre-harvest Contractor - consumer

Channel II: Producer – Wholesaler – Retailer - Consumer

Price spread was high in Channel II. They found that giving orchard to pre-harvest contractor was practiced by considerably a large number of orchardists. Channel II was the better distant marketing channel for the producer where net return was high (Rs.1517.81/qtl.) as compared to channel I.

Gauraha *et al*. (2007) studied on marketing of soybean in Sehore district of Madhya Pradesh. Data were obtained from 120 soybean farmers as well as from market intermediaries and processors to examine the marketing patterns, costs and margins for soybeans in Sehore district, Madhya Pradesh, India. Three channels for marketing soybeans to processors were identified: (1) through village merchants and wholesale dealers; (2) through cooperative societies; and (3) through wholesale dealers in regulated markets. Total marketing cost was highest on channel 1 (Rs. 202.52) and lowest on channel 2 (Rs. 160.40). The producer's share in the consumer price was almost similar in channel 2 and 3.

Raghuwanshi *et al*. (2007) identified three marketing channels and price spread in different marketing channels for soybean in sehore district of Madhya Pradesh. viz,

Channel I-Producer - Village merchants - Wholesaler dealer in regulated market (grain)- Processors – Refiner - Wholesaler (oil) - Retailer (oil) - Consumer.

Channel II-Producer - Wholesaler dealer in regulated market (grain) – Processors – Refiner - Wholesaler (oil) - Retailer (oil) - Consumer.

Channel III- Producer ITC company – Processors – Refiner - Wholesaler (oil) - Retailer (oil) - Consumer.

The study revealed that increase in the number of market functionaries in the marketing process, there is reduction in producer's share in consumer's rupee. It concluded that through channel III (ITC Company) producer gets maximum share in consumer's rupee than rest of the channels.

Naphade and Tingre (2008) studied the economics of production and marketing of guava in Buldhana district of Maharashtra. They studied one of the objective as price spread and marketing channels. They found total three channels in guava marketing viz,

Channel I: Producer – Wholesaler – Retailer - Consumer

Channel II: Producer – Retailer - Consumer

Channel III: Producer - Consumer

The price spread in channel I was Rs.170, channel II Rs.113 and channel III Rs.70. channel II was most common channel.

Sing (2008) studied the marketing of soybean in block Sonkutch of district Dewas of Madhya Pradesh. A large number of market functionaries viz- traders, retailers, tola, commission agent, village traders, palladers etc were found in the study area. Total three marketing channels were identified.

Channel I: Producer - Wholesaler/Commission agent – Soya processing plant - Retailer-Consumer

Channel II: Producer - Village merchant - Wholesaler/Trader-Soya processing plant – Retailer-Consumer

Channel III: Producer – Soya processing plant – Retailer - Consumer

The marketing charges paid by the producer, wholesaler and oil producer was worked out to Rs.33.75,Rs.17.20 and Rs.10.00 per quintal respectively.

Sanjeev *et al.* (2008) studied the Marketing of vegetables in Vaishali district of Bihar. The marketing efficiency was measured by employing Shepherd's index and the marketing cost function analysis facilitated to evaluate relative contribution of various factors to the marketing cost. Marketing efficiency was higher for cauliflower followed by bhendi, brinjal and tomato crop. Marketing cost emerged as one of the important components of vegetable marketing which ranged from 23.09 per cent in brinjal to 34.04 per cent in tomato.

Kerutagi *et al*.. (2009) studied on marketing of sapota in Northern Karnataka. They selected two districts, Belgum and Dharwad purposively. A multistage purposive sampling procedure was adopted for the selection of representative districts, taluks and villages. Two taluks from each districts and from each taluks two villages were selected. In all 90 sapota cultivators, ten commission agent cum wholesalers and ten retailers were selected randomly, to make total sample size as 110. Their one of the objective was to identify the channels in sapota marketing. They identified two marketing channels, viz,

Channel I: Producer - Commission agent – Retailers - Consumer

Channel II: Producer - Pre-harvest contractor cum Wholesaler – Retailer - Consumer

Producer's share in consumer's rupee in channel I was higher (59.58%) than in channel II (48.14%). Price spread in channel I was less (26.32%) compared to channel II (42.11%).

Singh and Singh (2009) studied on costs, margins and price spread of rapeseed and mustard in Sriganganagar district of Rajasthan. There were four channels identified viz,

Channel I: Producer - Commission agent - Processors - Oil wholesaler – Retailer - Consumers

Channel II: Producer - Wholesaler cum commission agent – Processors - Oil wholesaler I - Wholesaler II- Retailer-Consumer

Channel III: Producer - Commission agent- Wholesaler – Processors - Oil wholesaler I-Wholesaler II - Retailer - Consumer

These were most dominating channels contributing to nearly 97 per cent in total quantities sold in the market. The study concludes that producers are receiving remunerative price for their produce.

2.4 Production and Marketing Problems of Ginger and to Suggest Appropriate Policy Guidelines

Shivalinge Gowda *et al.* (1990) reported that the level of adoption of selected practices in raising cardamom nursery were the lack of awareness, complexity of operations and high cost practices which were the important constrints expressed by 87.77, 43.33 and 38.83 per cent of the cardamom growers respectively.

Ramamoorthy (1995) studied the main production constraints in rainfed cotton in Coimbatore. The production constraints were identified through rank analysis. Accordingly inadequate credit was ranked first, poor quality of inputs stood at second rank, pest menace and marketing ranked third and fourth, respectively.

Bonny (1996) surveyed the constraints on commercial production of vegetable in Pananchery and Duthur, Kerala and reported that increased cost of plant protection chemicals was perceived as the most important factor by the respondents followed by inadequate market facilities, poor storage and other post-harvest facilities, insufficient capital and high labour costs.

Kunnal (1997) while explaining the importance of organic farming to meet twin challenges of producing sufficient food grains for growing population and prevention of environmental degradation, opined that combined use of chemical fertilizers with FYM, vermicompost, green manures and bio fertilizers would help to attain higher yields as well as to improve soil health and to minimize environmental degradation. Research efforts through these angles should be initiated in the country so as to save the country from further disasters.

Narappanavar and Bavur (1998) examined the problems in storage, transportation and dissemination of market information in potato marketing in Dharwad, Karnataka and found that farmers were not facing severe problems in transportation because of large number of tractors in the villages. Similarly, farmers were making suitable arrangements for storage of potato on the farm itself. However, about 35 per cent of the farmers complained on illegal deductions while selling the produce at the market in the form of weighment charges. The other problems noticed were lack of grading facilities, arbitrary hamali charges, low prices and variations in output price and high commission charges. Therefore, it is suggested that there is need for ensuring improved storage at cities and purchase of potato at the local market by the Government at the time of heavy arrivals to assure the remunerative returns to the potato growers.

More (1999) assessed the problems faced by banana growers in Marathawada region of Maharashtra state. The major constraints faced in marketing and finance were price fluctuations (48%), high transportation cost (43%), delayed payment (67.5%), lack of storage and processing unit (13.33%), high commission of market intermediaries (55%), inadequate loan (27.50%), non-availability of loan on time (42.50%) and high rate of interest (20%).

Nagaraja *et al.* (1999) identified the most important constraints in production and marketing of potato in Kolar district of Karnataka by assigning the ranks. In production, high cost of seed material and diseases (Rank-I) were the major constraints followed by frequent power failure (Rank-II), high cost of fertilizers and plant protection chemicals (Rank-III), scarcity and high cost of labourers (Rank-IV) and non-availability of good seed material on time (Rank-V). The frequent fluctuations in price (Rank-I) involvement of too many middlemen (Rank-II), delayed payment (Rank-III), insufficient storage facilities (Rank-IV), low output prices (Rank-V) and high market charges (Rank-VI) were the main constraints in marketing.

Shah (1999) concluded that due to poor storage conditions in terms of ventilation, majority of the onion producers were seem to market produce immediately after harvesting. Various marketing intermediaries had certainly taken advantage of this situation. This had undoubtly led to unremunerative prices offer for most of onion producers.

Vivekananda (1999) made an attempt to study the problems and prospects of agricultural development in Karnataka and opined that agricultural development in the state was hindered by the problems such as weak input research, weak extension network, regional imbalances, stagnation in the area under HYV's *etc*. He suggested several measures for development of agriculture in the state.

Kameswar Rao (2000) studied the problems of production and marketing of banana in Tungabhadra command area. The study revealed that, the major problems faced by the 85 per cent of the farmers was non availability of sufficient irrigation water. 73 per cent of farmers opined that higher prices of fertilizers and 68 per cent of the farmers were facing the problem of non availability of quality rhizome material. The other major problems in production of banana in study area were labour shortage in peak time, hazards of soil salinity, storms of heavy winds. The major financing problems in the study area were available loan was inadequate, high procedural complication of loan and high rate of interest. The major problems in marketing of banana in study area were high price fluctuation, high transportation cost, delayed payments on sale proceeds by the trader or businessman and high commission of intermediaries.

Mishra *et al*. (2000) in their study on production and marketing of banana in Gorakpur district of Uttar Pradesh identified problems faced by the farmers in the production and marketing of banana. They were unavailability of quality suckers and high cost of seed suckers, high cost of transportation, lower ruling price for produce due to unavailability of sufficient storage facilities and weak finance structure. The problem of supply of electric power in critical period, non availability of fertilizers and insecticides at reasonable prices.

Ravishankar and Katteppa (2000) conducted study on potato growers in Chikmagalur district of Karnataka state. They reported that 94.16 per cent respondents faced the problem of lack of technical guidance, while more pests and more diseases, high cost of fertilizer, high cost of plant protection chemicals and non availability of fertilizers in time, were the problems faced by 90.00 per cent, 83.33 per cent, 85.00 per cent, 81.66 per cent and 68.33 per cent of respondents, respectively.

Khunt *et al* (2001) studied economics of production and marketing of pomegranate and found that dying of young plant, problem of mite, inadequate irrigation water and its poor quality and short supply of electricity were major problems faced by pomegranate growers of Bahavnagar district.

Arun Pandit *et al*..(2003) studied the potato marketing in India and the study revealed that the Indian marketing system suffers from high marketing cost, high middleman's margin, low producer share and inadequate marketing infrastructure. Their solutions are grading should followed rigorously, marketing cost could be reduced by establishing cold stores in producing areas. Regulation of potato market could be done by establishment of more processing units.

Sikka *et al*.. (2005) studied on marketing problems faced by apple growers and traders. The study was based on empirical evidences gathered during the course of study through structural and pre-tested questionnaire by adopting systematic sampling design. The study found that the problems of marketing begin from the time of packing itself. They found that increase in apple area and production in Uttaranhal has brought in many problems with regard to marketing ng of apple.

Sudhakar (2005) studied the production and marketing constraints of sunflower cultivation in Andhra Pradesh. The study was undertaken in Adoni taluk of Karnool district. The important problem and difficulties indicated by the farmers were rainfall and cost of fertilizers. With respect to problems of marketing, delay in cash payment by the commission agents was a serious problem faced by the respondents. The study suggested that the fertilizers must be supplied on subsidy for the use of sunflower and also concerned market committee should pursue the commission agents to pay the cash immediately after the sale of sunflower.

Vidhya (2006) studied on potential of cut-flower production in India, the result revealed that, India travelled a long floriculture history and flower growing is an age old enterprise however, what lacked was its commercialization to fourth coming challenges and to meet out the growing demands of flowers in the domestic as well as the export market. The study suggested for making concerted efforts on part of the government as well as the private entrepreneurs to develop floriculture on scientific lines. To achieve this, greater emphasis need to be laid on the development of suitable practices to ensure quality input supply and better remunerative management to create entrepreneur environment.

Rane and Bagade (2006) studied economics of production and marketing of banana in Sindhudurg district of Maharashtra. The study revealed that farmers were facing the problem of bunchy top disease and also incidence aphids in production of banana.

Rama Shankar and Amlendu (2008) studied production and marketing of Betel leaf: A study of constraints in Bihar. Study based on primary data collected from the two districts namely: Bhagalpur and Vaishali. The collected data were analyzed and average rank of all the identified constraints was determined. The most serious constraints in marketing of betel leaf was the price fluctuation, while in case of production biological constraints. The study concluded that marketing was the most important constraints for the growers.

3. METHODOLOGY

This chapter describes the procedure adopted in investigation of various economic aspects of production and marketing management of ginger. The methodology is presented under the following sub-heads.

3.1 Description of the study area

3.2 Sampling procedure

3.3 Nature and sources of data

3.4 Analytical techniques

3.5 Definition of terms and concepts used

3.1 Description of the Study Area

Karnataka is the eighth largest state in India with an area of 190 lakh ha. It is situated between 11.5° and 19.0° North latitude and between 74° and 78° East longitude in the southern plateau. The state receives the average annual rainfall of about 1139 mm both from southwest and north-east monsoons. The important crops grown in the state are jowar, ragi, maize, bajra and wheat among cereals; red gram, green gram, tur and bengal gram among pulses; groundnut, sunflower and safflower among oilseed crops, cotton, sugarcane, chilli and tobacco among commercial crops. Karnataka comprises 29 districts of which 12 districts are located in northern part of the state and rest in southern part of state, Uttara Kannada district was chosen for study purposively due to higher concentration of area and production of ginger. The Map of the study area is presented in Fig.3.1

3.1.1 Location and area

The study was undertaken in Uttar Kannda district which is situated roughly in the mid North Western part of the State. As per agro-climatic regional classification, Uttara Kannada district falls under Hilly region. The district lies between 13° 55 and 15° 31 North latitude and between 74° 9' and 75° 10' eastern longitude. It is surrounded on the east by Dharwad and Haveri districts, on the south by Shimoga and Udupi districts, on the north by Belgum district and Goa state on the west by the great Arabian sea. The district is endowed with 144 km coastal line running in five coastal taluks, viz, Karwar, Ankola, Kumta, Honnavar and Bhatkal.

Uttara Kannada district comprises of 11 taluks and total area of the district is 10291 sq. km., consisting of 1348 villages.

3.1.2 Geographic and Demographic features

The population of the district is 13,53,644 of which 6,86,876 (50.75%) are male and 666768 (49.25%) are female. Rural population comprises 965731 (71.3%) while, 387,913 (28.64%) is urban population. There are 419342 agriculture labours, marginal farmers are 97161, and small farmers are 26587 and large farmers are only 430. Literacy percentage in the district is 76.5 percent and illiteracy with respect to male is more (84.50%) compared to female (68.50%) (2001 Census). Uttara Kannada district is characterized by highly undulating topography of river basins, mountains, deep valleys and plains. The average elevation ranges from 25 to 619 meters from mean sea level.

The district consists of dense forest area. Its major part is essentially highland, the low land being restricted to pockets along the course of rivers. A somewhat broken and irregular sahyadri range of central hills with an average highest of 700 meters divides the district into two parts, the uplands or the regions above the ghat with an area of nearly 7,770 sq. km, which is 600 to 700 meters above mean sea level and the low lands covering about 3370 sq. km. Except the shallow Karwar and Belekeri bays in the north, the 144 km of the Uttara Kannada coast stretch in a long nearby straight line to the south east. Though unbroken by deep bays or wide-mouthed estuaries, the coast is varied and picturesque with rocky islands and rocky capes. There stretch rich winding valleys, waving woody hills and a wild background of high peaks behind the changing coast line. The district has three main and distinctive region; the coast lands, the Sahyadrian interior and the eastern margin.

Fig.3.1. Map showing study area

Fig.3.1. Map showing study area

The coastal lands are the best economically developed areas with a high density of population. It is in this region Karwar, Ankola, Kumta, Honnavar and Bhatkal taluks are situated. The Sahyadrian region is the forest and only the roads crossing the ghats sustain human activity, though the valleys have special significance as scenic antiquity. The eastern margin is an undulating land, partly under forest and partly cleared up for agriculture. It is a transitional zone between the forests proper and cultivated uplands of the Dharwad district. Parts of Haliyal, Yellapur and Mundgod taluks are plain, comparable with the western half of Dharwad district. Daily temperature touches around 20° to 15° in up ghats and plains during winter months (December to February). During summer (March to May) it will be varying between 30℃ to 38℃ across the regions. The atmosphere is highly humid throughout the year and particularly during the south west monsoon months (May to September).

Uttara Kannada district receives an average rainfall of 2741.7 mm of which around 80 per cent is received between June and August by South-west monsoon. The rainfall received from north-east monsoon is very less and it is not uniform and certain. Therefore, in most of the areas of the district the agricultural activities are concentrated only during Kharif.

The soils are mostly of lateritic origin which is reddish through the district except in coastal areas where only along the coastal belt up to an average distance of 3 Km from sea, coastal alluvial beds are observed. Sandy loams are also seen along the river beds to certain distance. Two clear cut soil zones can be differentiated based on elevation, namely the coastal taluks and the up-ghats. Soils in Kumta, Honnavar, Bhatkal and Siddapur are derived from laterites, while some soils derived from granites occur in Ankola and Karwar taluks. Red loamy soils derived from mixed laterites and traps are found in parts of Joida, Haliyal and Mundgod taluks. In other parts of Mundgoad, Haliyal and Joida taluks the soils are patches of black soil derived from trap rocks. There are also gazani lands which are saline sandy along the coast. The forest taluks like Sirsi, Siddapur, Yellapur, parts of Haliyal, Mundgod and Joida are covered with red loamy soils.

Of the total area, forest occupies 80.96 per cent (82, 99,613 ha) followed by agricultural area 10.94 per cent (1, 12,121 ha). Remaining land is used for other purposes. Around 18300 ha are sown more than once and thus making gross cropped area to around 1, 30,400 ha (41%). Around 21.07 per cent of the net sown area is net irrigated area. Tanks and other sources like small streams and brooks are major irrigation sources accounting for 40.98 per cent and 37.54 per cent respectively of total area irrigated (Fig 3.2).

With respect to major crops, paddy occupied the maximum area with 88956 ha (68.21%). The other important field crop is groundnut, occupying 508 ha (Fig3.2). Though ginger is grown in about 227 ha with production of 6846 tones, its cultivation is concentrated only in Sirsi, Siddapur, and Mundgod taluks. Among horticultural crops, areca nut exists in an area of 8499 ha (6.52%). The remaining area is under the other horticultural crops like coconut, mango, banana and cashew nut (Fig 3.3).

3.1.3 Description of the Study site

3.1.3.1 Description of Sirsi taluk

Taluk belongs to Uttara Kannada district. It is situated at 14.62° North latitude 74.85° East longitude in the heart of the western ghats. During the mansoon the region receives one of the heaviest rainfall in the world. The geographical area of the taluk is 1322.32 Sq. Km. with total population of 175550 lakhs comprising 89286 male and 86264 female. Sex ratio of the taluk is 966. The literacy rate of the taluk is 77.8 percent. The actual rainfall of the taluk is 3247 mm received from South-west monsoon. Taluk is having 4 hoblies and 221 inhabited, 1 uninhabited villages. The taluk is largely covered with hilly soil and lateritic soil. The main business around the taluk are mostly subsistence and agri-based. Adike (Supari, Areca nut) is the primary crop grown in this taluk. The region is also popular for many other spices like cardamom, ginger, pepper, betel leaves and vanilla. The major food crop is paddy and rice is the staple food of the people.

3.1.3.2 Description of Siddapur taluk

It is nestled among the western ghata of Karnataka at 14.347° North latitude and 78.894° East longitude. Siddapur had a population of 1,14,049 out of this 51107 are male and 49763 are female.

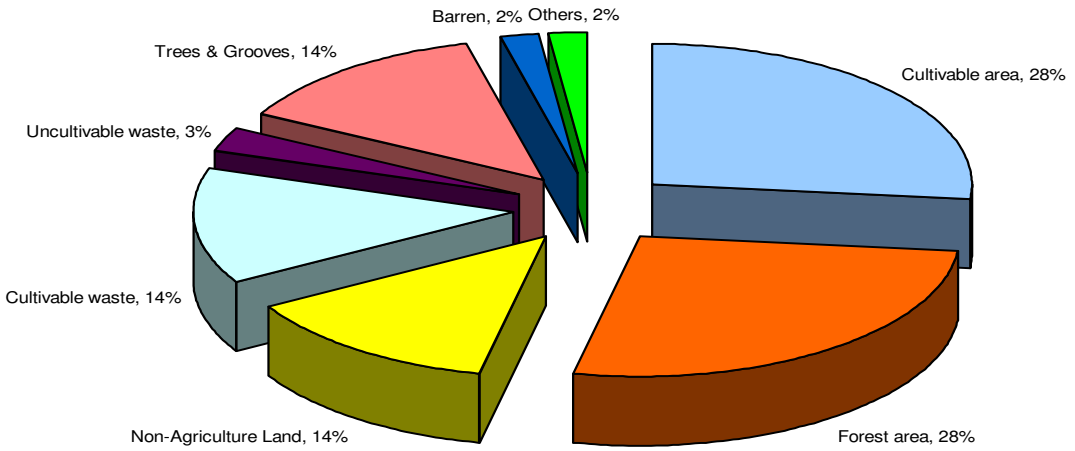

Fig. 3.2. Land Use Pattern in Uttara Kannada District

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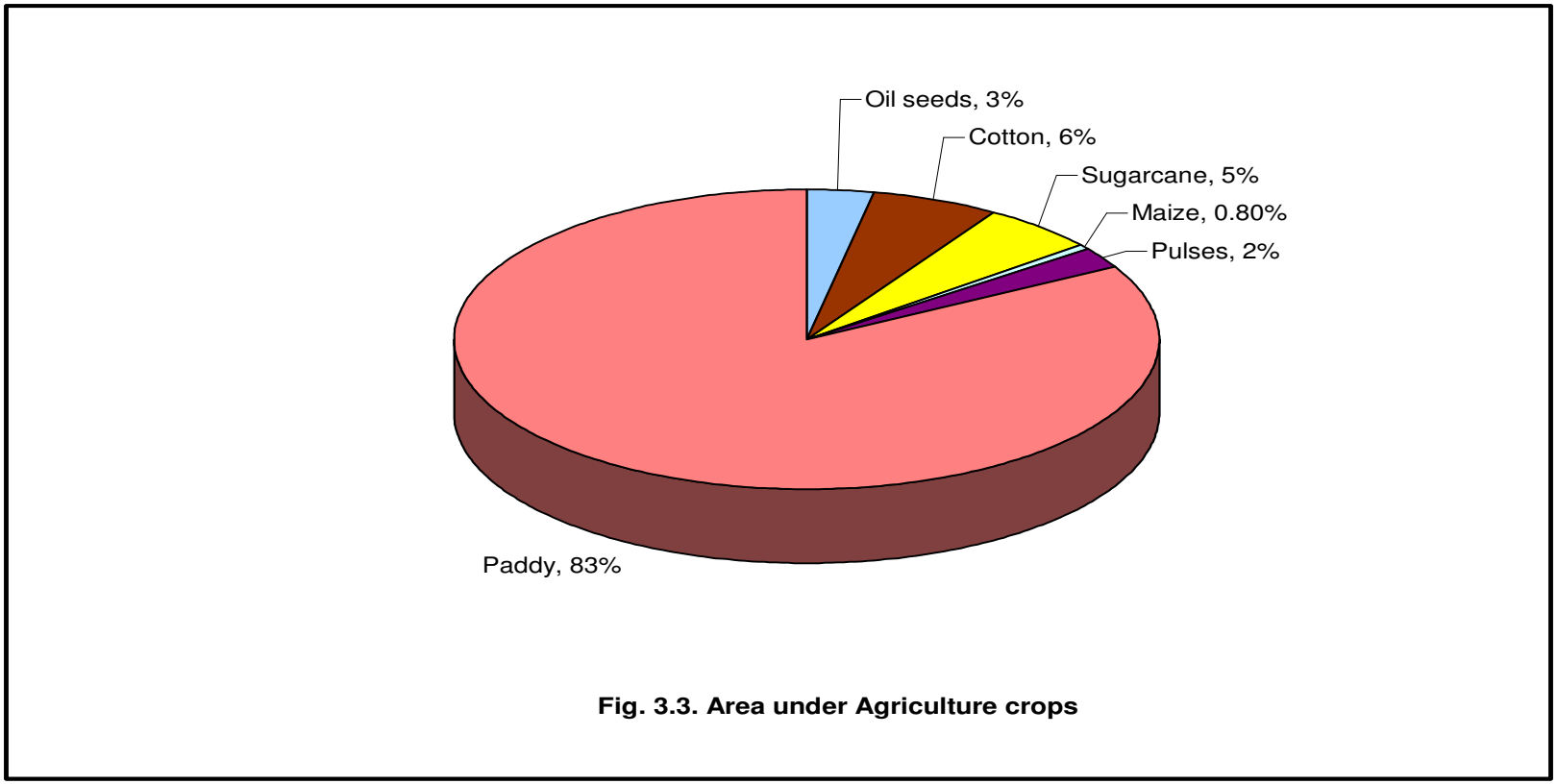

Fig. 3.3. Area under Agriculture crops

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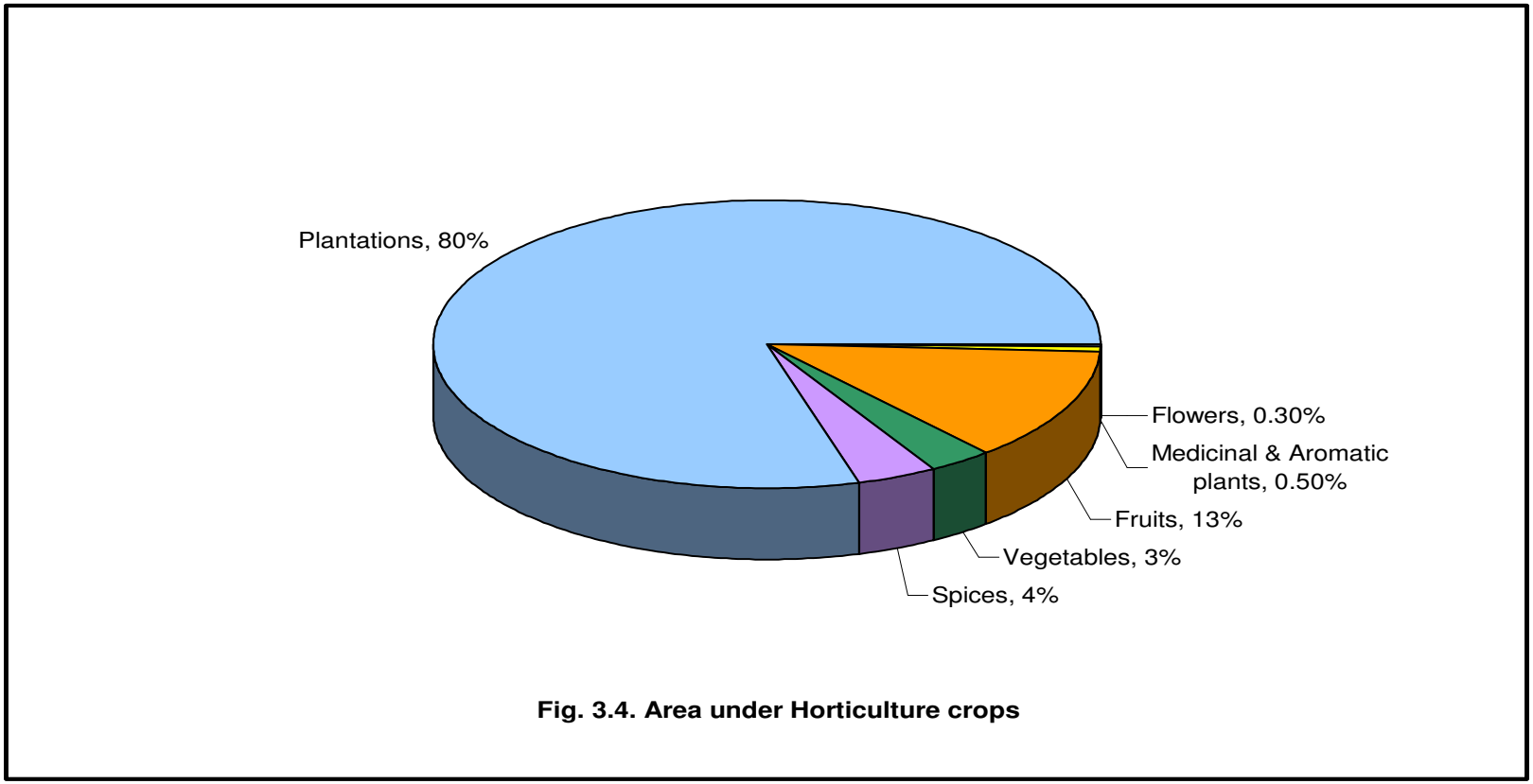

Fig. 3.4. Area under Horticulture crops

Fig. 3.4. Area under Horticulture crops

The geographical area of the taluk is 847.27 Sq. Km. The annual rainfall of the taluk is 4757 mm received from south-west monsoon. The taluk has 77.2 percent is literacy rate. The sex ratio of the taluk is 974. The taluk comprises total 3 hoblies, 195 inhabited and 1 uninhabited villages. Laterites and red loamy soil are the major soil type of the taluk. The main occupation of the residents is agriculture. Supari (Arecanut) is the primary business of the people. Other than arecanut commodities like paddy, pineapple,cardamom, ginger, coconut, pepper and venilla are the importatnt crops.

3.1.3.3 Description of Mundgod taluk

It is located at 14.97° North latitude and 75.03° East longitude. It has an average elevation of 567 meters. It has geographical area of the taluk is 667.44Sq.Km. Mundgod is the repository of Tibetan life and culture. It is popularly known for Banchanki dam and Attiveri bird sanctuary. Total population of the taluk is about 90,738 (2001 census), having 48973 male and 41765 female with sex ratio of 853. Literacy percent of the taluk is 70.5. The annual rainfall of the taluk is 1418 mm received from south-west monsoon. The soil type of the taluk is red loamy, black soil derived from trap rocks and mixed laterites. The main food crops grown in the taluk are paddy, maize, pulses groundnut; while ginger sugarcane, and cotton are the main commercial crops grown in the taluk.

3.2. SAMPLING PROCEDURE

The study was based on both primary and secondary data. Primary data were collected through personal interview method from farmers, village merchants, wholesalers and retailers with the help of well-structured and pre-tested questionnaire exclusively designed for the study. The sampling technique followed was both purposive and random. From among the eleven taluks of Uttara Kannada district, top three taluks, Sirsi, Siddapur and Mundgod were selected based on the highest area under ginger crop. These three taluks put together cover nearly 70 to 80 per cent of the production in Uttara Kannada district.

In the next stage five villages were selected randomly from each one of the selected taluks, from among the major ginger growing villages. In the next stage, six farmers from each village were selected randomly to make the total sample size of 90 farmers. The details of the farmers so selected are presented in Table 3.1.

Similarly, to elicit marketing information about ginger crop, ten village merchants, ten wholesaler cum commission agents and ten retailers from each taluk were selected randomly.

3.3 NATURE AND SOURCES OF DATA

The data for the study included both the primary and secondary sources. Primary data for the study was obtained from the sample farmers through personal interview method with the pre-tested questionnaire. The primary data collected from the farmer respondents and traders related to details of the objectives. The data pertained to the agricultural year 2009-10. The total sample of 90 farmers were post enumeration classified as small, medium and large farmers based on the approved criteria of land holding classifications. As per the criteria farmers holding up to 2 ha were considered as small farmers, 2.1 ha to 4 ha medium farmers and above 4 ha were considered as large farmers. The secondary data on area and production were collected from Spices Board and other agencies.

3.4 Analytical Techniques

3.4.1 Tabular Presentation

Cost of production, marketing cost and profit accrued to the farmers were worked out and presented in the tabular form. Different channels followed by the farmers were identified and the efficiency of each channels were compared in marketing of ginger.

Table 3.1 Detailed of sampling design

Sl. No.	Taluk	Villages	Sample farmers
1.	Sirsi	i) Banavasi ii) Tigni iii) Yindur iv) Kadagod v) Maduravalli	30 (Six farmers from each village)
2.	Siddapur	i) Shiralgi ii) Kangod iii) Avarguppa iv) Kolagi v) Bidrakan	30 (Six farmers from each village)
3.	Mundgod	i) Pala ii) Katur iii) Nagnur iv) Kadambi v) Alalli	30 (Six farmers from each village)

3.5 Definition of Terms and Concepts used

3.5.1 Concepts used in production of ginger

Following were the various inputs used in the production of ginger crops.

Human labour: Human labour employed for various cultivation activities were estimated in terms of man days. Eight hours of work per day was considered as one one man day. The women labours were converted into male equivalents by multiplying women labour day by 0.66 and added to total male labour. The prevailing wage rate of Rs.120 for male and Rs.90 for female labour were considered as basis for conversion.

Bullock labour: It was measured in pair days. Hence one pair day means eight hours of work by a pair of bullocks.

Machine labour: The cost of machine labour both hired and owned was calculated for differential rates for deferent type of operation prevailed in the study area.

Seed cost: The cost of own Rhizomes was calculated at local market price and the actual expenditure incurred in the case of purchased Rhizomes were considered, to arrive out seed material cost.

Farm yard manure (FYM) cost: The quantity of FYM used in the cultivation was measured in terms of tones and the cost was imputed at the market price prevailing in the village.

Cost of Fertilizers: Cost of fertilizer was computed considering the actual price paid by the farmers for purchase including the transportation cost and other identical charges.

Irrigation charges: Per crop irrigation charges as fixed by the government for canal irrigated farmers (Rs. 80/ha/annum for paddy) and electricity charges incurred by bore well and well irrigated farmers were considered.

Land revenue: Land revenue was charged at the rate imposed by the government.

Rental value of land: It was imputed at the prevailing rents in the study area per hectare per annum.

Depreciation: Depreciation is the decrease in value of an asset due to its wear and tear. In the present study, this was calculated by using the formula,

Depreciation = Purchase value-Junk value/Economic life of the asset

Total cost of cultivation: The total cost included the cost of human labour, bullock labour, machine labour, farm yard manures, fertilizers, plant protection measures, rhizome material, insecticides and other fixed cost.

Gross return: The value of produce [(ginger)] is referred to as the gross return.

Net return: Return obtained by subtracting the total cost from gross return.

3.5.2 Marketing costs

Marketing costs of the producer-seller (MCP): These are the costs incurred by the producer seller while disposing off his produce from his farm till it left the hands of the producer. These comprised the packing charge (PC), loading and unloading charge (LUC),transportation cost (TRC), commission paid (CO), labour charge paid at farm level (LC), weighing charge (WC) and miscellaneous expenses (ME).

MCP=PC + LUC + TRC + CO + LC+ WC+ ME

Transaction cost of village merchants (TCVM): These comprised of packing cost (PC), transportation cost (TRC), loading and unloading cost (LUC), weighing and packing cost (WPC), deduction charges at 7% total quantity(DC), loss of weight and wastage (LWW) and miscellaneous expenses (ME).

TCVM= PC + TRC + LUC + WPC + ME + DC + LWW

Transaction costs of wholesaler cum commision agent: These comprised transportation cost (TRC), loading and unloading cost (LUC), weighing and packing cost (WPC), deduction charges at 7% total quantity(DC), loss of weight and wastage (LWW), commission charge (CO) and miscellaneous expenses (ME).

TWC = TRC + LUL + WPC + DC + LWW + CO + ME

Transaction cost of Retailers (TCR): These comprised of transportation cost (TRC), loading and unloading cost (LUC) and weighing and packing cost (WPC), deduction charges at 7% total quantity(DC), loss of weight and wastage (LWW), commission charge (CO) and miscellaneous expenses (ME).

TCR = TRC + LUC + WPC + DC + LWW + CO + ME

3.5.3 Prices

Wholesale prices(WP): This was the price at which the produce was sold by the producer through village merchant to the wholesaler.

Retail price (RP):This referred to the price at which the produce was sold by the wholesaler.

3.5.4 Marketing channel, Marketing cost and Price spread

An attempt was made to study some aspects of marketing from viewpoints of ginger producer seller. The aspects include the marketing channels, marketing costs and price spread.

Marketing channel: refers to the alternate routes of product flow from the producer to final comsumer. Ginger is marketed in the form of fresh and rerely dry form. However in this study, the marketing channel is limited only upto the point of sale to local or village trader.

Marketing cost: is the cost incurred by the procedure seller during arrival of produce for sale. The cost per quintal was worked out by adding different components namely deduction charges, loss of weight and wastages, weighing and packing charges, loading and unloading charges, transportation cost and commission charges paid.

Price spread: It was worked out by computing the difference between the sale price of local agents and net prices received by the producer.

$$\text{Price spread} = Pp - Pf$$

Where,

Pp= Price received by the agent

Pf= Price received by the farmer

Marketing Efficiency Index (MEI)

The ratio of the total value of goods marketed to the total marketing cost is used as a measure of efficiency. Higher the ratio, the higher the efficiency and vice versa

Shepherds equation is,

$$ME = \frac{V}{I} - 1$$

Where,

ME = Index of marketing efficiency

V = Value of the goods sold (Consumers price)

I = Total marketing cost

3.5.5. Garrett's ranking technique

Problems faced by sample respondents in production and marketing of ginger were prioritized by using Garrett's ranking technique in the fillowing manner.

For this purpose seven problems were first identified as major problem expressed by the respondents in case of production problems. Total 90 respondents selected were asked to rank the above seven problems from rank 1 to 7. In this analysis, rank one meant most important problem and rank seven meant least important problem. In the next stage rank assigned to each problem by each individual was converted into per cent position using the following formula.

$$\text{Per cent} = 100 (R_{ij} - 0.5) / N_j$$

Where,

R_{ij} stands for rank given for the i^{th} factor (i= 1,2……..) by the j^{th} individual (j=1,2…..90)

N_j stands for number of factors ranked by jth individual

Once the percent positions were found, scores were determined for each per cent position by referring Garrett's table. Then, the scores for each problem were summed over the number of respondents who ranked that factor. In this way, total scores were arrived at for each of the seven factors and mean scores were calculated by dividing the total score by the number of respondents who gave ranks. Final overall ranking of the seven factors was done by assigning rank 1,2,3…….etc in the descending order of the mean scores.

Ten problems were considered as important problems in marketing of ginger by the respondents. Total 90 farmers were selected to ask the above ten problems. Total ten ranks have assigned for the problems from 1 to 10. In case of problems faced by the intermediaries in marketing of ginger total seven factors were considered and ranks have assigned from 1 to 7 ranks.

4. RESULTS

This study was conducted in Uttara Kannada district of Karnataka. The necessary data were collected from the sample farmers spread over three taluks in above mentioned district. The results of the analysis carried out for fulfilling the objectives of the study are presented under the following heads.

4.1 General characteristics of respondents

4.2 Existing cropping system and pattern of respondents

4. Labour utilization pattern in ginger crop

4.4 Cost and returns from ginger crop

4.5 Management of sales and quantity sold by the producer of ginger

4.6 Marketing channels, marketing cost and margin in different marketing channels of ginger

4.7 Problems faced by respondents in production and marketing of ginger

4.1 General Characteristics of Respondent Farmers

An understanding of general characteristics of the sample farmers is expected to provide a bird's eye view of the general features prevailing in the study area. Therefore, an attempt has been made in the study to analyze some of the important characteristics of the sample farmers. The general characteristics of the respondents are presented in the Table 4.1. From, the table it could be seen that of about 28.88 per cent farmers were in the age group of about 50 to 55 years and 27.77 per cent comes under 35 to 40 years. With regard to educational status, all the respondent ginger farmers were literate (100%), having their education ranging from primary to degree level and the main occupation of the farmers was agriculture (67.77%). From the table it could also be seen that average family size of sample farmers were 8.45 in which 3.31 male, 3.12 female and 2.02 were children.

4.2 Existing Cropping System of the Respondents

The farming systems followed in the study area are presented in Table 4.2. The crops were taken under three seasons namely *kharif*, *rabi* and summer. In *kharif* paddy was the only field crop grown in this region while groundnut, blackgram and cowpea were the crops grown during *rabi*. The summer was dominated only by groundnut among the field crops, that too to a smaller extent. The entire malnad region, where the study is undertaken is mainly dominated by annual crops and plantation crops in the farming system of the farmers. Banana, mulberry, sugarcane, ginger and pineapple were the annual crops while arecanut, coconut, cashewnut, Arecanut + Pepper + Coconut, Arecanut + Pepper, Arecanut + Pepper + Cardamom were the major plantation crops and crop groups followed by the farmers.

4.2.1 Average Size of Land Holdings

From the table 4.3, it could be seen that, among the respondent farmers, in case of small farmers, medium and large farmers' dry land area constitutes more than 59.09, 47.71 and 43.67 per cent respectively followed by irrigated and garden land. The total land holding in case small farmers were 0.44 hectare, 2.41 hectare in medium and 7.99 hectare in case of large farmers. Compared to other category of farmers, large farmers were having more garden land area of 2 hectare (25.03%). Medium farmers were having highest dry land area of about 1.15 hectare (47.71%).

4.2.2 Cropping Pattern followed by the Respondents in the Study area

Cropping pattern followed by the sample farmers in the study area is presented in Table 4.4. The pattern of cropping is presented separately for the three size groups of farmers. In the case of small farmers, ginger crop dominated maximum area (72.92%) in the cropping pattern, followed by Arecanut + Pepper intercropping (10.47%), paddy (8.33%), groundnut and blackgram in 0.02 ha (4.17%) each.

Table 4.1 General Information about Sample Farmers

Sl. No.	Particulars	Frequency(n=90)	Percentage
I.	Age		
	35-44	25	27.77
	45-49	17	18.88
	50-55	26	28.88
	55-65	22	24.44
	Total	90	100.00
II	Education		
	Primary	13	14.44
	Secondary	24	26.66
	PUC	30	33.33
	Degree and any other	23	25.55
	Total	90	100.00
III	Family size		
	Male	3.31	39.17
	Female	3.12	36.92
	Children	2.02	23.90
	Total	8.45	100.00
IV	Occupation		
	Agriculture	61	67.77
	Business	16	17.77
	Job	13	14.44
	Total	90	100.00

Table 4.2 Existing Cropping System in Uttara Kannada district

Sl. No.	Kharif	Rabi	Summer	Annual	Plantation
1.	Paddy	-	-	-	-
2.	-	-	-	-	Arecanut + Pepper
3.	-	-	-	Banana	Arecanut + Pepper + Coconut
4.	-	-	-	Mulberry	-
5.	-	-	-	-	Coconut
6.	-	-	-	-	Arecanut
7.	-	Groundnut	Groundnut	-	-
8.	-	-		Sugarcane	-
9.	-	-		-	Cashewnut
10.	-	-		Ginger	-
11.	-	Blackgram		-	Arecanut + Pepper + Cardamom
12.	-	Cowpea			
13.	-			Pineapple	

Table 4.3 Average size of Land Holdings

Sl. No.	Type	Small farmers		Medium farmers		Large farmers	
		Area (ha)	Percentage	Area (ha)	Percentage	Area (ha)	Percentage
1.	Dry	0.26	59.09	1.15	47.71	3.49	43.67
2.	Irrigated	0.13	29.54	0.78	32.36	2.50	31.28
3.	Garden	0.05	11.36	0.48	19.91	2.00	25.03
	Total	0.44	100.00	2.41	100.00	7.99	100.00

Table 4.4 Existing Cropping Pattern of the Respondents

Sl. No.	Crop/ Crops group	Small		Medium		Large	
		Area	Percentage	Area	Percentage	Area	Percentage
1.	Paddy	0.04	8.33	1.15	34.74	2.29	23.04
2.	Groundnut	0.02	4.17	0.50	15.10	1.00	10.06
3.	Blackgram	0.02	4.17	0.20	6.04	0.75	7.54
4.	Cowpea	-	-	0.20	6.04	0.20	2.01
5.	Banana	-	-	-	-	0.25	2.51
6.	Mulberry	-	-	-	-	0.20	2.01
7.	Sugarcane	-	-	-	-	1.21	12.17
8.	Ginger	0.35	72.92	0.75	22.66	0.84	8.45
9.	Pineapple	-	-	0.03	0.91	0.20	2.01
10.	Arecanut	-	-	0.20	6.04	0.35	3.52
11	Coconut	-	-	0.04	1.21	0.20	2.01
12.	Cashewnut	-	-	0.10	3.02	1.20	12.71
13.	Arecanut + pepper	0.05	10.47	0.14	4.23	-	-
14.	Arecanut + pepper + coconut	-	-	-	-	0.75	7.54
15.	Arecanut + pepper + cardamom	-	-	-	-	0.50	5.03
Total		0.48	100.00	3.31	100.00	9.94	100.00

The cropping pattern of medium farmers was dominated by paddy crop in around 34.74 per cent of the gross cropped area (1.15 ha), followed by ginger (22.66%) in 0.75 ha, groundnut in 0.5 ha (15.10%), blackgram, cowpea and arecanut in 0.2 ha apiece (6.04% of gross cropped area). Cashewnut, Arecanut + Pepper mixed cropping, coconut and pineapple also were grown, but in small per cents of the area.

The cropping pattern with respect to large farmer was found more diversified. Paddy was the major crop occupying 23.04 per cent (2.29 ha) of the gross cropped area, followed by sugarcane in 1.21 ha (12.17% of gross cropped area) and cashewnut in 1.20 ha (12.71% of gross cropped area). Ginger was grown in 0.84 ha (8.45% of gross cropped area). Apart from these crops, groundnut (1.00 ha), blackgram (0.75 ha), cowpea (0.20 ha) were grown in paddy fallows during rabi season, annual and plantation crops, banana (0.25 ha), mulberry (0.20 ha), pineapple (0.20 ha), arecanut (0.35 ha), coconut (0.20 ha), Arecanut + Pepper + Coconut (0.75 ha) and Arecanut + Pepper + Cardamom (0.50 ha) were also found to be grown by the large farmers.

4.3 Labour Utilization Pattern in Ginger Crop

Details on per hectare labour use pattern for different cultivation practices of ginger production are presented in Table 4.5 and depicted in Fig 4.1. It could be observed from the table that farmers used total 47.03 men labour and 14.20 women labour, 1.19 bullock pair days and 7.47 machine labour. It is interesting to note that even though farmers owned small sized holding but had their own bullock labour and none of them found to hired bullock labour. Of the total men labour used (47.03 man days) 26.33 man days were family labour and 10.70 man days were hired. The respective figures for women labour were 10.48 man days and 4.72 man days. Out of total machine labour (7.47 machine hour) 2.47 machine hour were family and 5.00 machine hours were hired.

Among the different operations in ginger production, harvesting consumed the highest number of man days (21.22 man days) followed by spreading of FYM (4.20 man days), cleaning(3.5), ploughing (3.43), fertilizer application (3.28 man days), planting (3.00 man days), earthing up and transportation of FYM (2.50 man days), rhizome treatment (1.50 man days) and weeding(1.00 man days). With respect to women labour weeding required more women labour(6.98 man days), followed by spreading of FYM (2.72 man days), harvesting(2.50 man days), transportation of FYM (1.00 man days), rhizome treatment and cleaning(0.50 man days).

Bullock labour was used only for ploughing operations. In this case only family labour (1.19 pair days per ha) was used. In the case of machine labour, ploughing consumed more machine hour (2.00 machine hour) followed by transportation of FYM(1.47 machine hour). Most of the farm operations were carried out by the family labour. The hired labour use was seen only for operations like ploughing, earthing up, transportation of FYM, spreading of FYM, planting, fertilizer application, weeding and harvesting.

4.4 Costs and Returns from Ginger Crop

The annual cost incurred in cultivation and returns obtained from ginger were worked out for small, medium and large farmers and are presented in Table 4.6.

The total costs of cultivation were Rs. 89,435.17, Rs.87,203.30 and Rs.87,015.37 for small, medium and large farmers respectively. Total cost included total variable cost and total fixed cost.

Among the fixed cost depreciation on machinery and equipments was the most prominent among the three categories which accounted for 2.66 per cent (Rs. 2383.95 per ha), 4.41 per cent (Rs. 3850 per ha) and 6.21 per cent (Rs. 5407.082 per ha) of the total cost respectively, for small, medium and large farmers. On the pooled basis the same cost accounted for 7.80 per cent of the total cost accounting to Rs. 7672.50 per hectare. Thus, the total fixed cost accounted for 3.08 per cent, 5.04 per cent, 7.16 per cent and 9.29 per cent of the total cost in that order.

Table 4.5 Labour Utilization Pattern in Ginger Crop

Per hectare

Labour operation	Frequency of operation	Family labour				Hired labour				Total			
		Men	Women	Bullock pair	M/L	Men	Women	Bullock pair	M/L	Men	Women	Bullock pair	M/L
Ploughing	3	1.51	0.00	1.19	1.00	1.92	0.00	0.00	1.00	3.43	0.00	1.19	2.00
Transportation of FYM	1	2.50	1.00	0.00	1.47	0.00	0.00	0.00	4.00	2.50	1.00	0.00	5.47
Spreading of FYM	1	4.20	0.00	0.00	0.00	0.00	2.72	0.00	0.00	4.20	2.72	0.00	0.00
Rhizome treatment	2	1.50	0.50	0.00	0.00	0.00	0.00	0.00	0.00	1.50	0.50	0.00	0.00
Planting	1	2.00	1.00	0.00	0.00	1.00	0.00	0.00	0.00	3.00	0.00	0.00	0.00
Fertilizer application	3	1.50	0.00	0.00	0.00	1.78	0.00	0.00	0.00	3.28	0.00	0.00	0.00
Earthing up	2	1.50	0.00	0.00	0.00	1.00	0.00	0.00	0.00	2.50	0.00	0.00	
Weeding	4	0.00	4.98	0.00	0.00	1.00	2.00	0.00	0.00	1.00	6.98	0.00	0.00
Harvesting	1	18.72	2.50	0.00	0.00	2.50	0.00	0.00	0.00	21.22	2.50	0.00	0.00
Cleaning	2	2.90	0.50	0.00	0.00	1.50	0.00	0.00	0.00	4.40	0.50	0.00	0.00
Total		26.33	10.48	1.19	2.47	10.70	4.72	0.00	5.00	47.03	14.20	1.19	7.47

Note:

Human labour= Man days
Bullock labour= Pair day
Machine labour= ML (Hr.)
1 women= .66 mendays

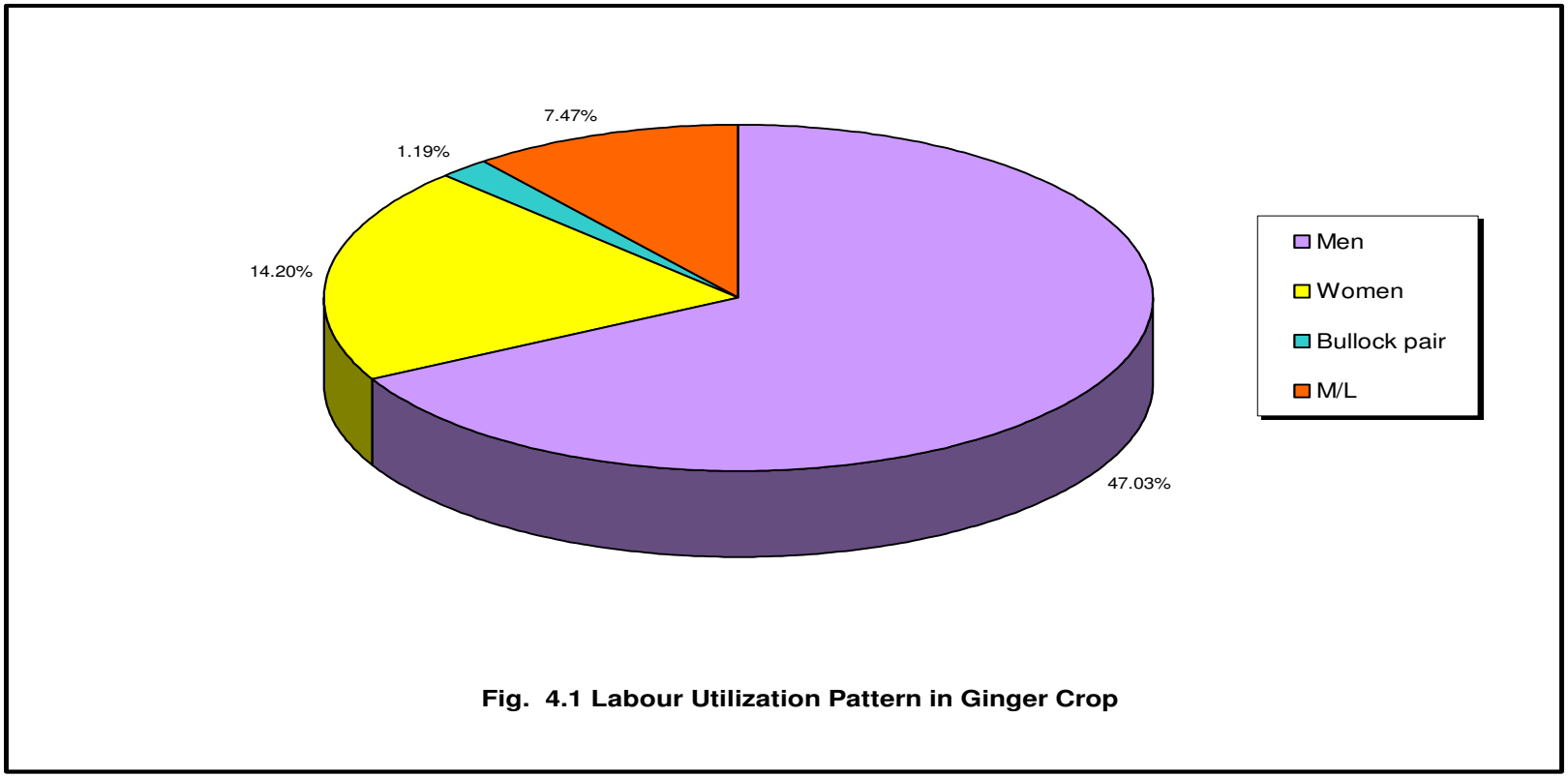

Fig. 4.1 Labour Utilization Pattern in Ginger Crop

Fig. 4.1 Labour Utilization Pattern in Ginger Crop

Table 4.6 Cost of Cultivation of Ginger in Different Farm Sizes

Sl. No	Particulars	Small farmers			Medium farmers			Large farmers			Total		
		Quantity	Cost(Rs.)	Percentage	Quantity	Cost(Rs.)	Percentage	Quantity	Cost(Rs.)	Percentage	Quantity	Cost(Rs.)	Percentage
I.	Fixed cost												
a.	Land revenue		75.00	0.08		75.00	0.08		75.00	0.08		75.00	0.07
b.	Depreciation of farm implements		2383.95	2.66		3850.00	4.41		5407.82	6.21		7672.50	7.80
c.	Interest on fixed capital @ 12%		295.07	0.33		571.00	0.65		746.64	0.86		1169.70	1.22
	Total fixed cost		2754.02	3.08		4396.00	5.04		6229.46	7.16		8917.20	9.29
II.	Variable costs												
A.	Material costs												
a.	FYM(load)Tractor	5.5	11000.00	11.18	5.85	11700.00	13.42	6.50	11375.00	13.07	8.00	11655.00	12.14
b.	Fertilizers(Qtl)	2.79	5607.90	6.27	2.81	5760.50	6.60	2.83	5801.50	6.67	2.80	5600.31	5.83
c.	Seed material(Qtl)	15.70	46500.00	51.99	16.00	44800.00	52.37	16.28	43956.00	50.51	17.00	46628.57	48.59
d.	Insecticides(Ltr)	2.20	7687.91	8.60	2.00	6800.00	7.80	2.10	6535.25	7.51	2.00	7250.00	7.55
	Subtotal A		70795.81	79.16		69060.50	79.13		67667.75	77.76		71133.88	74.12
B.	Labour costs												
a.	Human labour(MD)	65.15	7818.00	8.74	56.67	6800.40	7.80	51.63	6195.60	7.12	65.00	7800.00	8.13
b.	Machine labour(ML(Hr))	5.18	1554.00	1.74	6.52	1956.00	2.24	7.83	2349.00	2.70	7.47	2241.00	2.33
c.	Bullock labour(PD)	5.58	837.00	0.93	2.64	396.00	0.45	2.15	322.50	0.37	1.19	178.500.	0.19
	Subtotal B		10209.00	11.41		9152.40	10.49		8867.10	10.19		10219.50	10.65
	Subtotal A+B		81004.81	90.57		65634.40	75.26		60729.10	69.79		81353.38	84.77
C.	Interest on working capital @7%		5676.34	6.35		4594.40	5.27		4251.03	4.88		5694.73	5.93
	Subtotal A+B+C		86681.15	96.92		82807.30	94.96		80785.88	92.84		87048.11	90.70
III.	Total cost of cultivation (I + II)		89435.17	100.00		87203.30	100.00		87015.34	100.00		95965.31	100.00
	Yield (qtl.)		190.00			199.00			203.25			210.00	
	Gross returns		427500.00			447750.00			465442.50			472500.00	
	Net returns		338064.83			360546.70			378427.16			376534.69	
	B:C ratio		4.78			5.13			5.34			4.92	

The variable cost included material cost, labour cost and interest on working capital. The total variable costs were Rs. 86681.15, Rs. 82807.30 and Rs. 80785.88 per hectare on small, medium and large farms respectively contributing to 96.92, 94.96 and 92.84 per cent of the total cost among the three categories respectively. On the overall level it was Rs. 87048.11 per hectare (90.70% of the total cost). Among the material costs Rhizome material cost was the prominent one, which contributed 51.99, 52.37 and 50.51 per cent to the total cost respectively in small, medium and large farmer category. In value terms per hectares, it worked out to be Rs. 46500, Rs.44800 and Rs.43956 in that order. At the pooled farm level, this cost was Rs. 46628.57 per hectare accounting 48.59 per cent of the total cost. The total material cost was 79.16, 79.13 and 77.76 per cent of the total cost in the three farmer categories respectively.

Among labour cost, human labour cost, machine labour cost and bullock labour cost were the cost items which collectively contributed 11.41, 10.49 and 10.19 per cent to the total cost respectively in small, medium and large farmer category.

The gross returns per hectare of the produce realized was Rs. 4,27,500, Rs.4,47,750 and Rs. 4,65,442.50 on small, medium and large farms respectively. On the pooled farm basis it worked out to be Rs. 4, 72,500 per hectare.

The net returns on per hectare basis was worked out to be about Rs. 3,38,064, Rs.3,60,547 and Rs. 3,78,427 for small, medium and large farms respectively and on overall basis it was Rs. 3,76,535 per hectare. The benefit cost ratios were 4.78, 5.13, 5.34 and 4.92 in small, medium, large and pooled farms respectively.

4.5 Management of Sales and Quantity Sold by the Producer of Ginger

The farmers followed three type of sales pattern to sell their produce i.e., selling the raw ginger direct, to the village merchants, which was found to be more common in the study area. The other pattern of sales are selling directly to the wholesaler-cum-commission agent. The Table 4.7 depicts that 52.20 per cent of the produce was sold to the village merchants. The average quantity sold by the farmers worked out to 117.99 qtl. per farmer and average price received per qtl. was about Rs. 2350. The remaining 42.70 per cent produce was sold to the wholesaler-cum-commission agent and 5.01 per cent sold to retailers. The average price realized when sold to wholesaler-cum-commission agent was Rs. 2507.33 per qtl and retailer's price was 2850 per qtl. when sold directly to retailers.

4.6 Marketing Channels, Marketing Cost and Margin Under Different Marketing Channels for Ginger

4.6.1 Marketing channels

Marketing channels through which ginger in the study area was marketed from the producers to the ultimate consumers. The three channels were identified in the marketing of ginger viz.,

Channel – I: Producer - Village merchant - Retailer - Consumer.

Channel – II: Producer - Village merchant - Wholesaler cum commission agent - Retailer-Consumer

Channel –III: Producer - Wholesaler cum commission agent – Retailer - Consumer

In the channel – I, village merchant himself goes to the producer/farmer field and purchase the produce. This was the most commonly used channel in the study area. As per the information collected from the respondents 98 per cent of producers sold their produce through this channel.

In the channel – II, producer sold the produce to the village merchants; village merchant in turn brought the produce to the market and sold to the wholesaler cum commission agent. Channel III, wholesaler cum commission agent himself went to the producer field and purchased the produce and again he sold to the retailers.

Table 4.7 Pattern of Sales and Quantity Sold by the Respondents

SL. No.	Sold to	Type of sale	Quantity sold (qtl/year/ farmer)	Average price (Rs. /qtl.)
1.	Village merchant	Direct sale	117.99 (52.20)	2350.00
2.	Wholesaler-cum-commission agent	Direct sale	96.53 (42.70)	2130.00
3.	Retailers	Direct sale	11.52 (5.10)	2850.00
	Total		226.05 (100.00)	

Note: Figures in parentheses are percentages to total quantity

4.6.2 Marketing Cost Incurred by the Intermediaries

The cost incurred in the marketing of ginger per quintal by various market intermediaries like village merchant, wholesaler cum commission agent and retailers were worked out.

4.6.2.1 Village merchant

Table 4.8 indicates and Fig 4.2 depicts that the various costs incurred by the village merchants in the marketing of ginger. Among the various costs, deduction charges (29.60%) accounted for the major share of the total marketing costs. Next important marketing cost were cost of transportation (23.02%) and costs towards weighing and packaging (4.60%), loss of weight and wastage (20.17%), loading and unloading charges (5.59%) and miscellaneous charges (16.99%). The total cost incurred by the village merchants worked out to be Rs. 373.25 per quintal of ginger handled.

4.6.2.2 Wholesaler cum commission agent

In Table 4.9 reveals and Fig 4.3 shows that the per quintal total cost incurred by the wholesaler cum commission agent was Rs. 519.43. Out of this, deduction charges (27.04%) accounted for the major share, followed by transportation charges (20.29%), loss of weight and wastage (18.62%), weighing and packing (3.00%), miscellaneous charges (14.44%) and loading and unloading cost (16.60%).

4.6.2.3 Retailer

In Table 4.10 and Fig 4.4 indicated the marketing cost incurred by retailers. In the marketing of ginger retailers was another agent who purchases the ginger from both wholesalers and village merchants. Retailers incurred the lowest marketing cost (Rs. 267.68) among the marketing channels. The major item of expenditure was transportation charges (20.96%). Next important items of expenditure were miscellaneous charges (34.41%), loading and unloading charges (11.09%), weighing and packing (9.43%)

4.6.2.4 Marketing Cost of Ginger at Different Channels

Marketing cost of ginger at different channels are presented in Table 4.11 and depicted in Fig.4.5. It could be seen that the marketing cost per quintal for channel I, II and III were Rs. 521.21., Rs. 768.11 and Rs. 787.11/qtl respectively. In channel I, transportation cost was highest Rs. 127.00 followed by deduction charge of Rs. 124.37, loss of weight and wastage accounted for Rs. 110.00, loading/Unloading charges of Rs. 55.34. In channel II also transportation cost was the major (Rs.175.89) and the lowest was in case of weighing and packing charges (Rs.48.29/qtl.). Nearly Rs. 178.00 was transportation cost in channel III, followed by deduction charge of Rs. 145.00.

4.6.3 Price Spread in Marketing of Ginger

Ginger crop passed through various intermediaries from producer to reach ultimate consumers. The intermediaries involved rendered variety of services in the process of marketing of ginger crop with a view to earn some profit. The quantum of margin of the intermediaries serves as an indicator of the efficiency for marketing system. In order to have clear picture of marketing, price spread, producer's share in consumer's rupee and marketing efficiency under different channels were worked out and presented in Table 4.12 and depicted in Fig 4.6

4.6.3.1 Channel - I

Marketing cost and margin of the agencies involved in the marketing of ginger are presented in the Table 4.12. The total marketing cost incurred by the producer was nill. The net price received by the producer was Rs. 2350.00. The price spread in first channel was Rs. 860.00 per quintal (73.20%) of which Rs.373.25 was the cost incurred by the village merchants, Rs. 148.00 by retailer respectively. Profit of retailers registered highest amount that is Rs.212.00 followed by that of village merchants (Rs.126.75). The total marketing cost incurred in this channel was Rs. 521.25.

Table 4.8 Marketing Cost Incurred by Village Merchants

(Rs. /qtl.)

Sl. No.	Particulars	Cost	Percentage
1.	Transportation cost	85.94	23.02
2.	Loading/Unloading	20.88	5.59
3.	Deduction charges@7% of the sale price	110.50	29.60
4.	Loss of weight and wastage @ 2% of total quantity	75.30	20.17
5.	Weighing and packing	17.20	4.60
6.	Miscellaneous charges	63.43	16.99
	Total	373.25	100.00

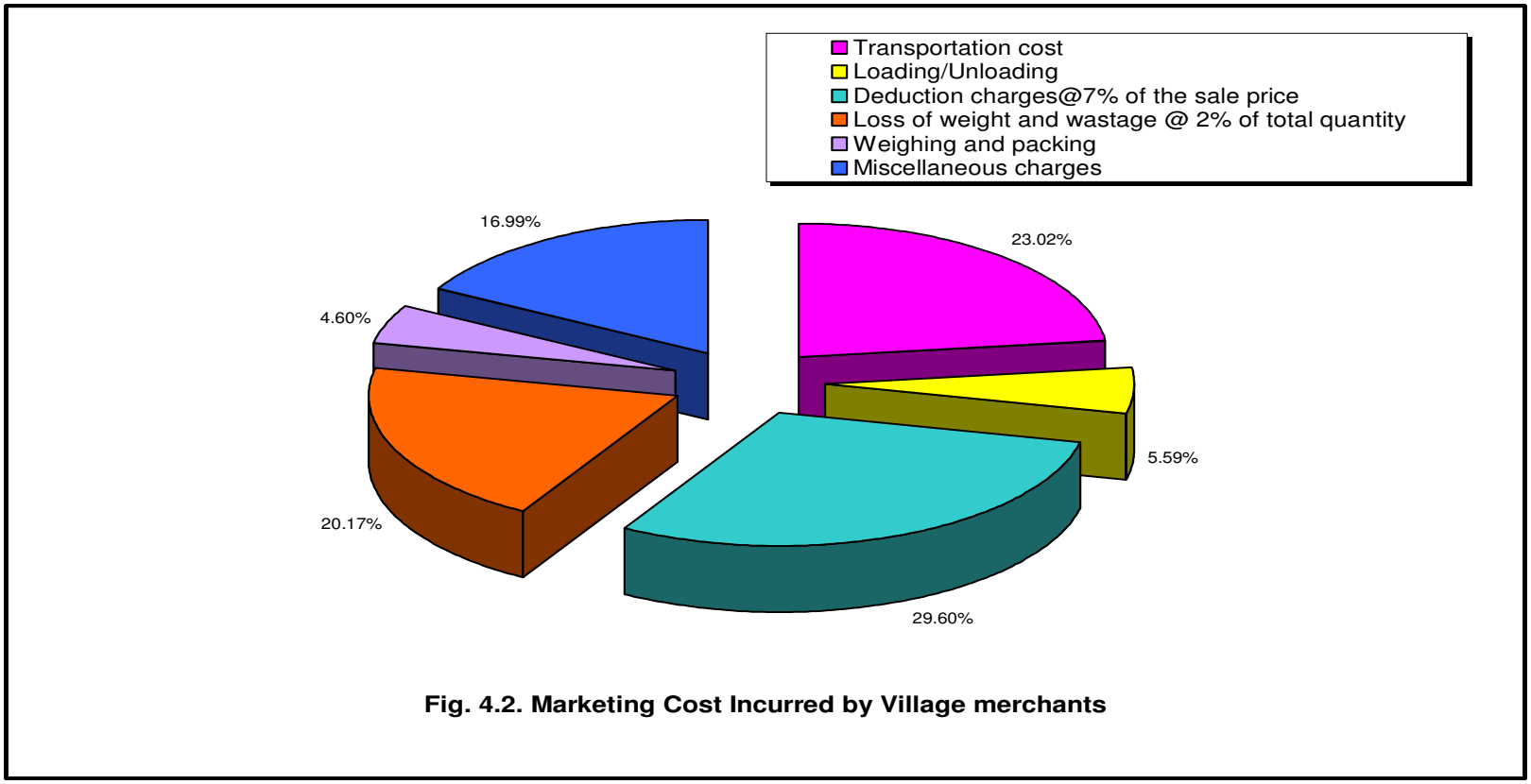

Fig. 4.2. Marketing Cost Incurred by Village merchants

Fig. 4.2. Marketing Cost Incurred by Village merchants

Table 4.9 Marketing Cost Incurred by Wholesalers

(Rs. /qtl.)

Sl. No.	Particulars	Cost	Percentage
1.	Transportation cost	105.40	20.29
2.	Loading/Unloading	86.23	16.60
3.	Deduction charges@7% of the sale price	140.50	27.04
4.	Loss of weight and wastage @ 2% of total quantity	96.76	18.62
5.	Weighing and packing	15.54	3.00
6.	Miscellaneous charges	75.00	14.44
	Total	519.43	100.00

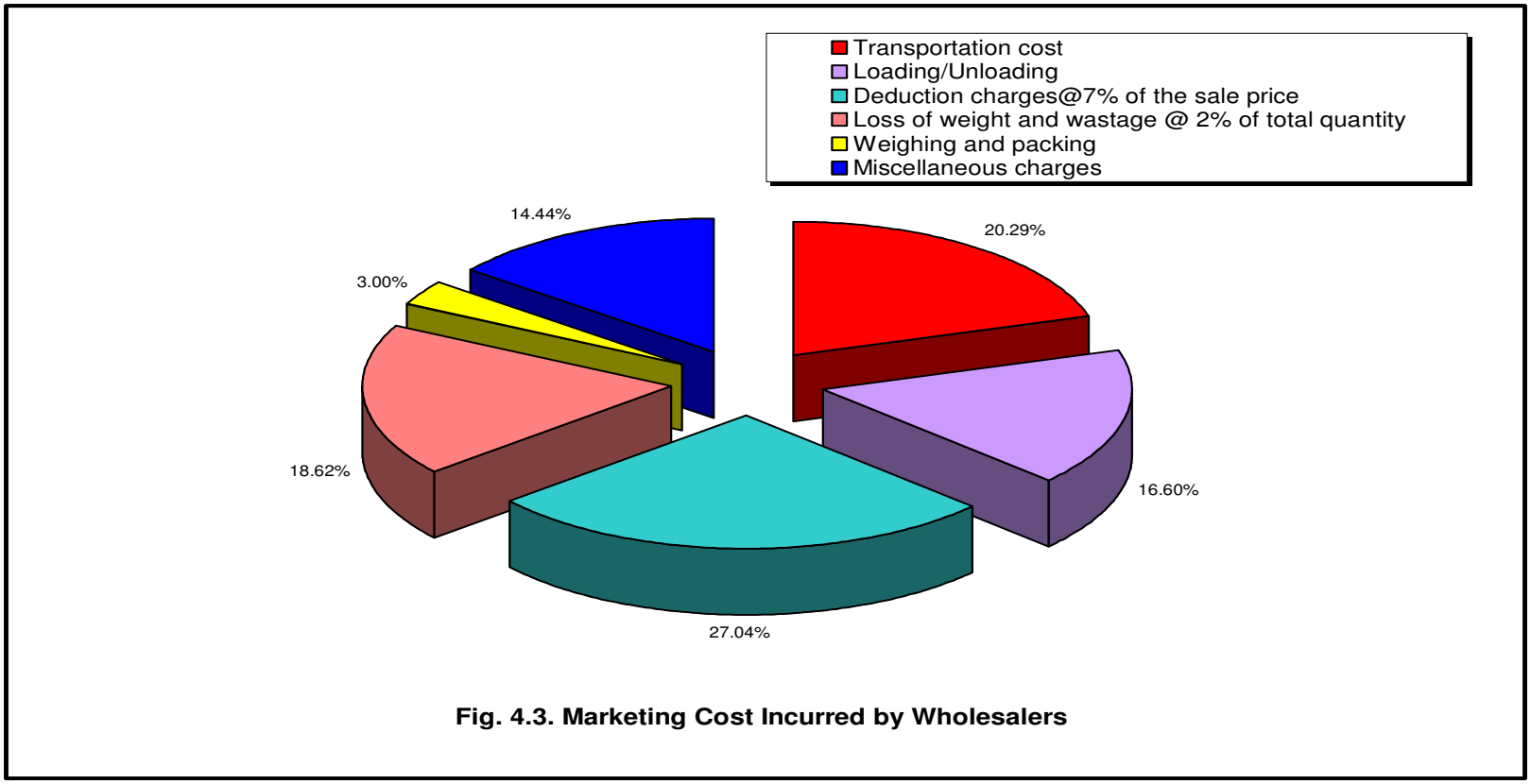

Fig. 4.3. Marketing Cost Incurred by Wholesalers

Fig. 4.3. Marketing Cost Incurred by Wholesalers

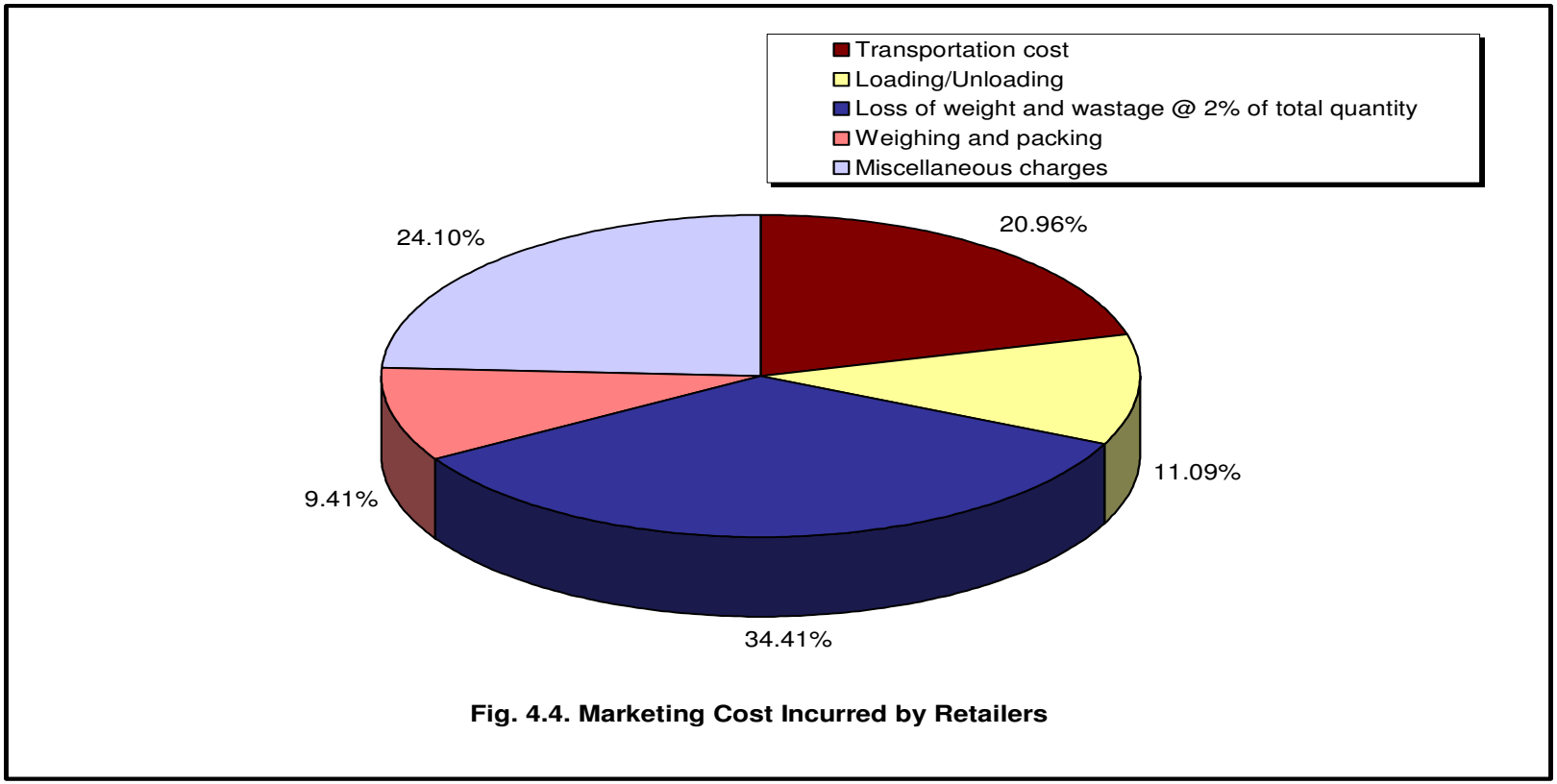

Fig. 4.4. Marketing Cost Incurred by Retailers

Fig. 4.4. Marketing Cost Incurred by Retailers

Table 4.10 Marketing Cost Incurred by Retailers

(Rs. /qtl.)

Sl. No.	Particulars	Cost	Percentage
1.	Transportation cost	56.12	20.96
2.	Loading/Unloading	29.70	11.09
3.	Loss of weight and wastage @ 2% of total quantity	92.10	34.41
4.	Weighing and packing	25.25	9.41
5.	Miscellaneous charges	64.51	24.10
	Total	267.68	100.00

Table 4.11 Marketing Cost of Ginger at Different Channels

(Rs. /qtl.)

Sl. No	Particulars	Channel		
		I	II	III
1	Transportation charge	127.00 (24.36)	175.89 (22.89)	178.00 (22.61)
2	Loading/Unloading	55.34 (10.61)	96.90 (12.61)	106.50 (13.53)
3	Deduction charge (7%) of the sale price	124.37 (23.85)	141.55 (18.42)	145.00 (18.42)
4	Loss of weight and wastage @ (2%) of the quantity	110.00 (21.10)	126.28 (16.44)	128.65 (16.34)
5.	Weighing and packing	32.75 (6.28)	48.29 (6.23)	30.09 (3.82)
6.	Miscellaneous charges	71.79 (13.77)	80.41 (10.47)	107.41 (13.65)
7.	Commission agent's charge	-	98.79 (12.86)	90.50 (11.49)
	Total marketing cost	521.25 (100.00)	768.11 (100.00)	787.11 (100.00)

Note: Figures in parentheses are percentages to total marketing cost

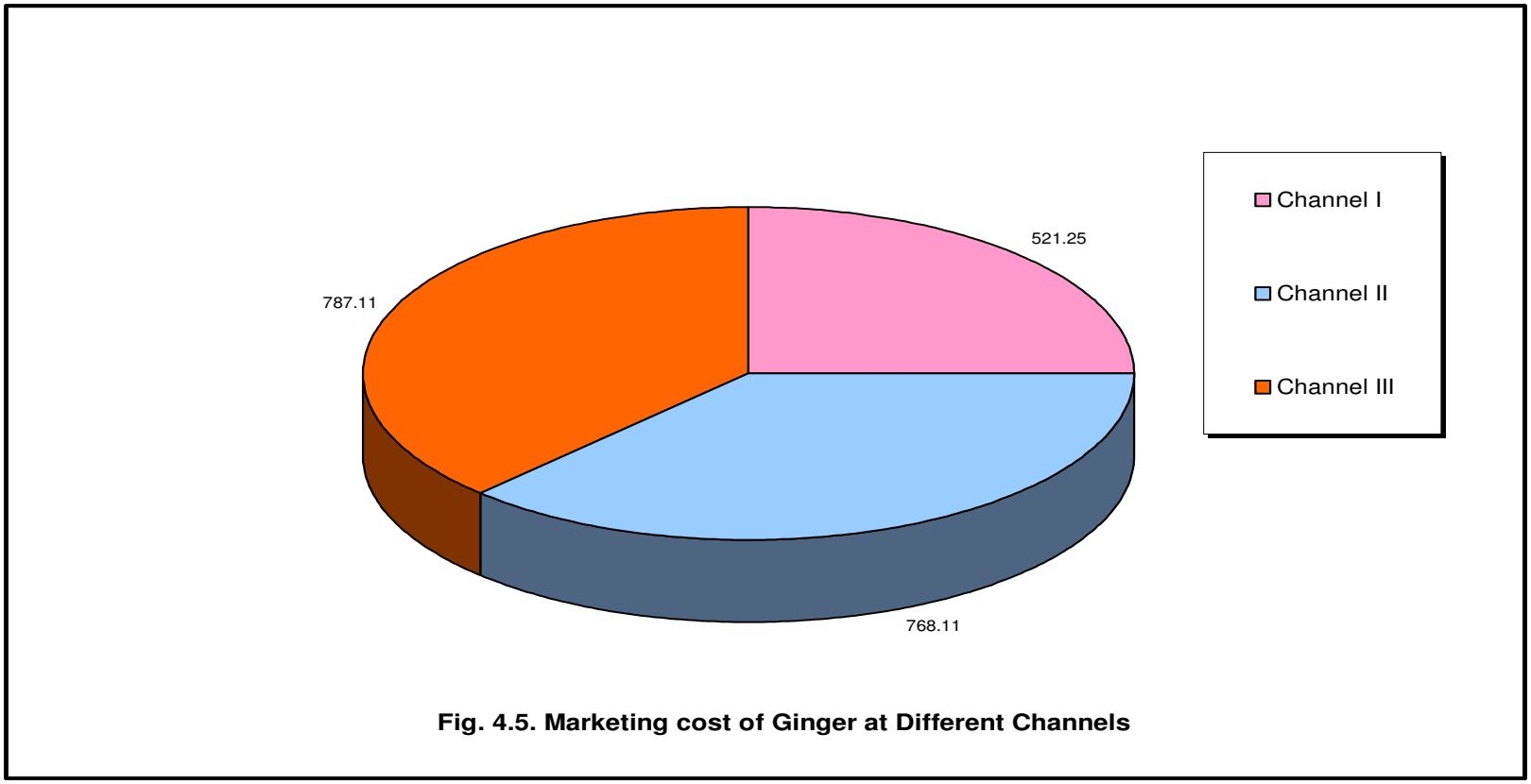

Fig. 4.5. Marketing cost of Ginger at Different Channels

Fig. 4.5. Marketing cost of Ginger at Different Channels

Table 4.12 Price Spread in Marketing of Ginger in Different Channels

(Rs. /qtl.)

Sl. No.	Particulars	Channel		
		I	II	III
1.	Producer selling price	2350.00	2130.00	2275.00
2.	Marketing cost incurred by producer	-	-	125.00
3.	Net price received by producer	2350.00	2130.00	2150.00
4.	Village merchant purchasing price	2350.00	2130.00	-
5.	Marketing cost incurred by Village merchant	373.25	275.00	-
6.	Village merchant selling price	2850.00	2507.33	-
7.	Profit of village merchant	126.75	102.33	-
8.	Wholesalers cum commission agent purchasing price	-	2507.33	2150.00
9.	Marketing cost incurred by Wholesalers cum commission agent	-	500.43	519.43
10.	Wholesalers cum commission agent selling price	-	3045.00	2750.00
10.	Profit of Wholesalers cum commission agent	-	37.67	80.57
11.	Retailers purchasing price	2850.00	3045.00	2750.00
12.	Marketing cost incurred by retailers	148.00	260.00	267.68
13.	Retailers selling price	3210.00	3390.00	3200.00
14.	Profit of retailers	212.00	85.00	182.32
15.	Total marketing margin	338.75	225.00	262.89
16.	Total marketing margin (%)	10.55	6.63	8.21
17.	Total marketing cost	521.25	768.11	787.11
18.	Price spread	860.00	1260.00	1050.00
19.	Producer share in consumer rupee (%)	73.20	67.18	62.83
20.	Marketing efficiency	5.15	3.41	3.06

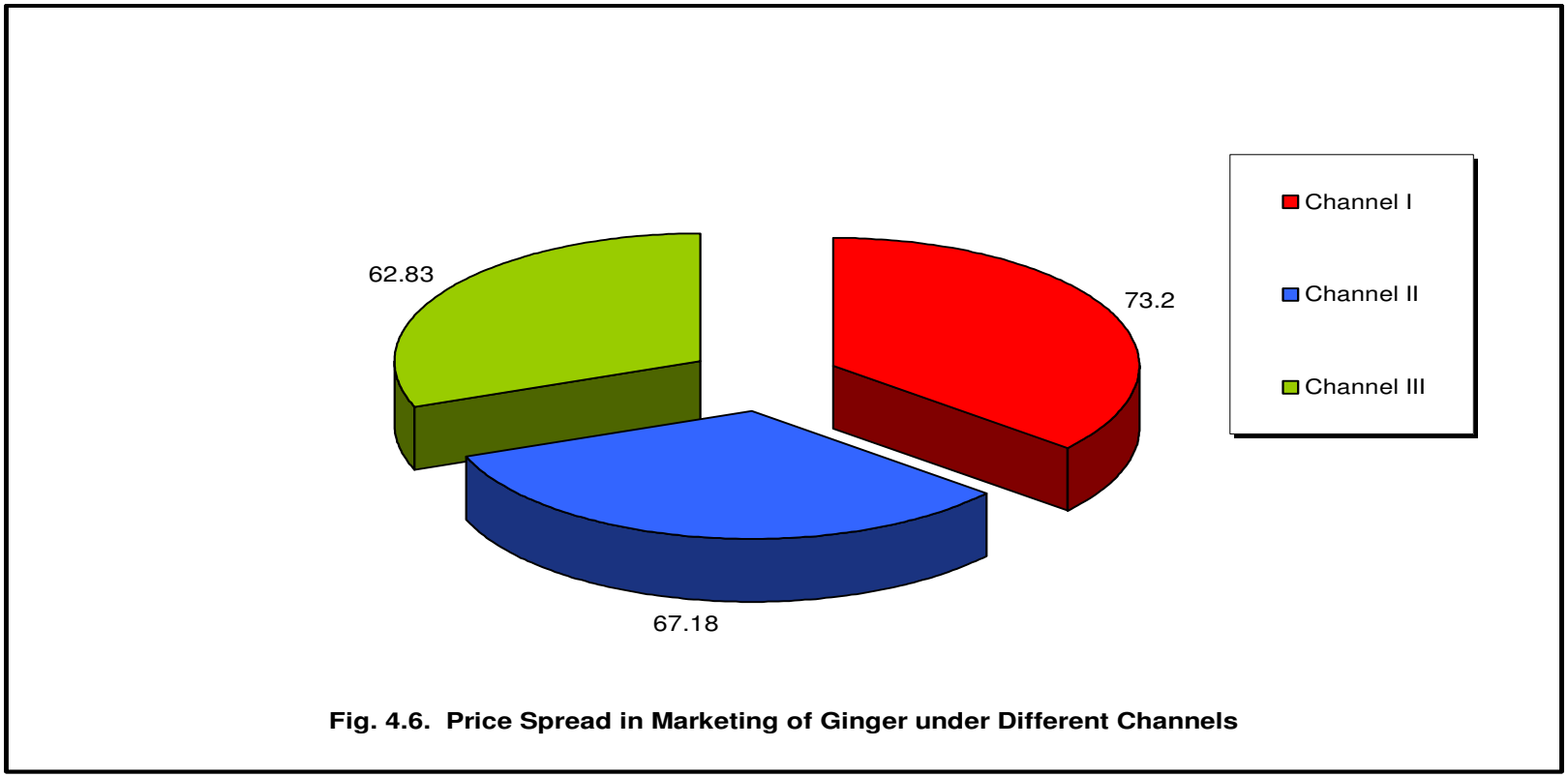

Fig. 4.6. Price Spread in Marketing of Ginger under Different Channels

Fig. 4.6. Price Spread in Marketing of Ginger under Different Channels

4.6.3.2 Channel-II

In channel II the produce moves from producer to village merchant, wholesaler cum commission agent, retailer and finally consumer. Price spread is given in Table 4.12. The producer's share in consumer's rupee in channel II was less compared to channel I (67.8%). Net price received by producer in this channel was Rs.2130.00, the marketing cost incurred by the village merchant, wholesaler cum commission agent and retailer was Rs.275.00, Rs.500.43 and Rs.260.00 respectively. The margin earned by the village merchant was highest (Rs.102.33). The total marketing margin earned by channel II which was Rs. 225.00

4.6.3.3 Channel-III

Producer's share in consumer rupee in channel III was 62.83 per cent. Net price received by the producer was Rs.2150.00 and the marketing cost incurred by the producer was Rs. 125.00. In this channel total marketing cost was highest of Rs.787.11 compared to other channels. Retailers had got highest margin Rs. 182.32, marketing efficiency was very low in this channel (3.06). Wholesaler cum commission agent incurred of Rs. 519.43 Marketing margin in this channel was Rs.262.89.

4.7 Problems in Production and Marketing of Ginger

Opinion survey was conducted to know the constraints in production and marketing of ginger crop and analysed using Garrett's ranking techniques. The factors considered in the analysis were seven factors for production problems faced by the respondents were high incidence of pest and disease, high rate of rhizome material, high rate of plant protection measures, non-availability of labour, high wage rate, non-availability of pesticides and insecticides and non-availability of rhizome material. Totally ten factors were considered in marketing problems faced by the farmers namely, unawareness of process of value addition, no regulation of marketing in ginger, no fixed rate, no incentives from government, lack of standard grades, lack of storage facilities, no premium price, lack of market information, low demand in local market and high commission charges. Total of viz., seven factors Storage facilities, no premium prices, wastages, non-availability of labour, lack of market intelligence and market information, volatility in demand and no proper grading methods were considered in evaluating the marketing problems faced by the intermediaries.

4.7.1 Problems in Ginger Production

Table 4.13 depicts the results of Garrett ranking analysis of problems associated with production of ginger. Among seven factors the incidence of pest and disease was the major problem expressed by most of the farmers so this problem got assigned first rank, followed by high rate of plant protection chemicals (II), high rate of rhizome material (III), non-availability of labour(IV), high wage rate (V), non-availability of rhizome material (VI), non-availability of pesticides and insecticides(VII).

4.7.2. Marketing Problem Faced by Farmers

Table 4.14 depicts the marketing problem faced by the ginger farmers. The problem of unawareness of process of value addition was the major problem expressed by the farmer respondents relating to marketing of ginger. According to Garrett's ranking this problem has got first rank followed by no regulation of marketing in ginger (II), no fixed rate (III), lack of storage facilities (IV), no incentives from government (V), no premium price (VI), lack of market information (VII), lack of standard grades (VIII), low demand in local market (IX) and high commission charges (X).

4.7.2.2 Problems Faced by the Intermediaries

Table 4.15 indicates the problems faced by the intermediaries. The Garrett's ranking analysis revealed that among the seven factors considered for the evaluation, lack of storage facilities was the most prominent problem as indicated by the I rank in the scoring. The other problems in the order of their prominence as revealed by the Garrett's scoring were no premium price (II), lack of market intelligence and market information (III), no proper grading methods (IV), volatility of demand (V), wastage of the material (VI) and non-availability of labour (VII).

Table 4.13 Production Problems faced by Ginger Farmers

(Garrett's score)

Sl. No	Particulars	Sum of the scores	Mean	Ranks
1.	High incidence of pest and disease	6915	76.83	I
2.	High rate of Plant protection measures	6135	68.17	II
3.	High rate of rhizome material	5895	65.50	III
4.	Non-availability of labour	5411	60.12	IV
5.	High wage rate	4969	55.21	V
6.	Non-availability of rhizome material	4692	52.13	VI
7.	Non-availability of pesticides and insecticides	4335	48.17	VII

Table 4.14 Marketing Problems Faced by the Ginger Farmers

(Garrett's score)

Sl. No	Particulars	Sum of the scores	Mean	Ranks
1.	Unawareness of process for value addition	7176	79.73	I
2.	No market regulation in ginger	7096	78.84	II
3.	No fixed rate	6986	77.62	III
4.	Lack of storage facility	6680	74.22	IV
5.	No incentives from government	6750	75.00	V
6.	No premium price	6449	71.66	VI
7.	Lack of market information	6199	68.88	VII
8.	Lack of standard grades	5439	60.43	VIII
9.	Low demand in local market	4590	51.00	IX
10.	High commission charges	4385	48.72	X

Table 4.15 Problems Faced by the Intermediaries

(Garrett's score)

Sl. No	Particulars	Sum of the scores	Mean	Ranks
1.	Storage facility	7042	78.24	I
2.	No premium prices	6242	69.35	II
3.	Lack of market intelligence and market Information	5781	64.23	III
4.	Grading problem	5435	60.39	IV
5.	Volatility in demand	5064	56.27	V
6.	Wastage	4658	51.76	VI
7.	Non-availability of labour	4053	45.03	VII

5. DISCUSSION

The results of the investigation presented in the previous chapter are discussed in this chapter. It throws light on the possible causes for the results in the study. This analysis is hoped to identify some of the policy measures and execute corrections that can be implemented to overcome the constraints encountered by ginger growers in the area of production and marketing management. Keeping objectives of the study in view, the results are discussed under following heads:

5.1 General characteristics of respondents

5.2 Existing cropping system and pattern of respondents

5.3 Labour utilization pattern in ginger crop

5.4 Cost and returns from ginger crop

5.5 Management of sales and quantity sold by the producer of ginger

5.6 Marketing channels, marketing cost and margin in different marketing channels of ginger

5.7 Problems faced by the sample respondents in production and marketing of ginger

5.1 General Characteristics of Respondents

The general characteristics of the farmers in the study area are presented in Table 4.1. From the table it could be observed that the average age of the ginger growers was about 44 to 55 years. Ginger cultivation requires more experience compared to other crops. Elderly and experienced farmers involved in production and marketing of the crop shows the relative importance of experience is required in cultivation and marketing of the produce. As far as literacy was concerned, it was observed that all the respondents were literates ranging from primary to degree level. Ginger production is a high value enterprise, as has been perceived by these respondents because of its higher profitability. Because of their increased standard of living all the respondents could peruse better and higher level of education. Although main occupation of the respondent farmers were agriculture, but some farmers were doing business and job. The average size of land holding was different for different category of farmers. In case of small farmers the average land holding was 0.44 hectares only, but in medium and large farmers the average land holding size were 2.41 hectares and 7.99 hectares respectively. Ginger is a highly remunerative crop so it was grown in smaller area only. Most of the farmers were growing Varadha and Himachal varieties. These varieties were preferred by growers due to its special characters like short duration (200 days), better yield, resistance to pest and diseases, high demand in market and best suitability to the climate.

5.2 Existing Cropping System and Cropping Pattern followed by the Respondents

Ginger farmers had grown variety of plantation, commercial and field crops. Ginger growing farmers followed a variety of cropping system in the district which included field crops, annual crops and plantation crops spread over *kharif, rabi* and summer seasons of the year. Paddy was the major field crop as it is the staple food crop of the people of this region. Heavy monsoon during Kharif in those regions do not allow any other field crops to be grown during the season as the entire fields would be submerged under water. However, in rabi and summer groundnut, blackgram and cowpea are being grown in the paddy fallows by utilizing the residual moisture. (Table 4.2)

In those areas irrigation facilities are available, sugarcane, banana, mulberry and ginger crops are being grown. Those areas where irrigation is not sufficient, pineapple is found to be practiced. The garden lands were completely devoted for growing of either sole crops of arecanut and coconut or multistage cropping of arecanut + pepper, arecanut + pepper + coconut or arecanut + pepper + cardamom. The marginal garden lands, which are commonly called as “soppina betta” are usually covered with cashew crop. (Table 4.2)

The cropping pattern followed by the farmers exhibited distinct differences among the size groups (Table 4.4). The small farmers apart from devoting dry land completely for the staple food crops paddy, during Kharif, grown groundnut and blackgram in small parcels of

land during rabi/summer. Their irrigated land mostly covered with ginger. Among the plantation crops they followed only the mixed cropping of arecanut + pepper. However, ginger crop dominated their cropping pattern (73% of gross cropped area) because of its relative profitability.

Much diversification in the cropping pattern could be seen in medium farmers. A sizeable proportion of the operational holding (about 23% of gross cropped area) was devoted for growing ginger. Apart from this paddy, as usual, was their main field crop in Kharif and groundnut, blackgram and cowpea during rabi/summer. Among plantation crops, along with sole crop of arecanut, coconut, cashewnut and pineapple, arecanut + pepper mixed cropping were also seen in the cropping pattern of medium farmers.

Large farmers were found more innovative and entrepreneurial among the farmer groups as evidenced by a large number of diversified crop enterprises being followed by them in the study area (Table 4.4). Though ginger was grown in larger extent of the area (0.84 ha) as compared to other two groups, of the total cropped area it constituted only 8.45 per cent. Their cropping pattern dominated by paddy crop during Kharif and groundnut, blackgram and cowpea during rabi in the dry land areas. They also included banana, mulberry and sugarcane in their cropping pattern in irrigable areas. Garden lands were mostly dominated by arecanut and areca based mixed/ multistage crops like coconut, cardamom and pepper. Cashew nut was also practiced in sizeable amount of area.

5.3 Labour Utilization Pattern in Ginger crop

Labour use pattern for different cultivation practices in ginger production (Table 4.4) revealed that farmers used 47.03 man days of men labour and 14.20 man days of woman labour, 1.19 pair days of bullock pair and 7.47 machine hour of machine labour. It is interesting to note that even through farmers owned small size land holding but had their own bullock pair and none of them found to be using hired bullock pair.

Ginger is a labour intensive crop. So, it requires more labour compare to other crop although it is grown in smaller area. Out of the total men labour uses (34.41 man days) 26.33 man days were family labour and 10.70 man days were hired, the respective figures for women labour were 10.48 man days and 4.72 man days. It is evident from the results that major portion of the labour force was supplied by the family members themselves. This signifies more efficiency in labour use, as family members when they work on field for major operations, they work with more interest and hence, the operations were performed near to perfect. The efforts were reflected in terms of better yields, in turn better profits as it was reflected in Table (4.6) Among the different operations in ginger production, harvesting operation consumed the highest man days (21.22 man days) followed by spreading of FYM, cleaning, ploughing, fertilizer application, planting, earthling up, transportation of FYM, rhizome treatment and weeding. In case of woman labour use, weeding operation consumed highest followed by spreading of FYM, harvesting, transportation of FYM and cleaning. Ginger crop requires more weeding operation. In a year four times weeding has to be done. This operation requires more of woman labour.

With respect to bullock pair use, in ploughing operation only bullock pair were used, because most of the farmers use hired machine for ploughing and other operations. Bullock pair consumes more time but machine labour requires less time and efficiency of operations are also very high in machine used operations so most of the farmers prefer machine labour. These results are on par with those of Annesh (2007) who identified the labour utilization pattern for under-utilized millets in Karnataka.

5.4 Cost and Returns from Ginger crop

The investment pattern in ginger is similar to one found in any other spice crops. Little high investment is needed for ginger compared to other field crops like cereals and pulses. It is a highly remunerative crop. Deep ploughing and FYM spreading are important operations in ginger cultivation. Ginger is a labour intensive crop, weeding, fertilizer application, irrigation and insecticide application are the important operations which require more labour. Weeding has to be done four times, which eats always much labour.

The cost of cultivation was higher in case of small (Rs.89435.17) farmers compared medium (Rs. 87203.30) and large (Rs. 87015.34) farmers. However, there were no substantial differences in the cost of cultivation between small, medium and large farmers. It was mainly because of high cost of rhizome material and more use of labour and fertilizers which are more or less same for per unit area irrespective of size groups.

Though ginger is a high value cost intensive crop, the fixed costs are very less as it constitutes around 9 per cent of the total cost at the overall level. Hence, with proper management of variable costs, this crop can successfully be raised.

In case of all the category of farmers, cost on rhizome material was the major component of the cost which accounts around 51.99 per cent, 52.37 per cent and 50.51 per cent of the total cost in the case of small, medium and large farmers respectively. Because of higher profitability in ginger crop, many farmers shifted to ginger cultivation. But, the availability of rhizome material was not sufficient to meet the demand of farmers. Among the variable cost, labour cost was quite sizeable ginger is labour intensive crop. It requires more care compare to other field crops like cereals and pulses. At the time of harvesting, it requires maximum labour for digging, uprooting and cleaning of rhizomes. In the study area most of the farmers used machine power instead of bullock pair whether he was a small, medium or large farmer for many of the operations. Hence, there is wide scope for mechanization in ginger cultivation. Ginger crop requires more FYM, fertilizers and insecticides. Spectomycyne and gramazine insecticides were commonly used in the study area. In case of weedicides, oxygold was used by all the categories of farmers. Ginger crop also requires cleaning, because rhizomes were incorporated with soil. Cleaning also consumes more labour followed by harvesting and spreading of FYM. At the time of cleaning, farmers were used to spray loam flame to the rhizomes because it gives longer life to the product.

In all variable costs constitute more than 90 per cent of the total cost of production. Hence, care can be taken to economies the use of these variable cost items so that the operational costs can be minimized. Proper guidance and training in using of material and labour are the need of the hour which would drive away unnecessary expenses which would result in elevating the profitability. However, it is revealed from the study that economy of large scale operation did not operate cost saving in ginger cultivation as the cost of cultivation was more or less same in all the three categories of farms.

The similar results were reported by Anil (2007), whose study reported the cost of cultivation of ginger was Rs.84, 849.06 per hectare in Nainital area of Uttarakhand.

The average yields obtained in case of small, medium and large farmers were 190 qtl., 199 qtl. and 203 qtl. respectively. The net returns realize were Rs. 3.38 lakhs, Rs. 3.60 lakhs and Rs.3.78 lakhs per hectare for the three category of farmers respectively. Since, ginger is a highly remunerative high value crop, it can be successfully adopted in the cropping pattern to realize more farm income. Further, there is wide scope for enhancing the returns from ginger cultivation by fine tuning the cultivation operations, thereby reducing the variable costs. While studying the economics of ginger cultivation in Nainital district of Uttarakhand, Anil Kumar (2007) also supported above findings.

5.5 Management of Sales and Quantity Sold by the Producer

The results of the analysis revealed that there are three type of sales pattern which was followed by the sample farmers in the sale of raw ginger. One of the patterns was selling the produce directly to village merchant. Village merchant come to the farmers field and purchase the produce, while, farmers rarely go to the market place and sell the produce. It can be observed from the Table 4.7 that among the respondents 52.20 per cent farmers sold the produce to the village merchants. Those farmers who were having large quantity of produce were able to contact directly the wholesaler cum commission agents. Around 42.70 per cent of the farmers sold their produce directly to these market intermediaries. A paltry proportion (5.10%) of the farmers sold their produce directly to the retailers. The price realized per quintal of sale was maximum by Rs. 500 per quintal when sold directly to the retailers (Rs. 2850 per qtl.) when compared to selling to village merchants (Rs. 2350 per qtl.). Still the farmers prefer to sell their produce to village merchants because village merchants directly visit the farmers field and purchase the produce.

The operational case in marketing of the produce might have driven the farmers to select the channel. Unawareness of such higher price realization may also be another possible reason for such an act. Proper guidance in this regard is necessary to better the net farm income of the farmers. However, it was also found that some of the farmers carry the produce to distant markets and get better prices, but such instances were sparce. Therefore, cooperative efforts in collecting the produce on leadership basis, transporting and marketing collectively would better the income of the farmers.

5.6 Marketing channels, Marketing cost and Margin in different marketing Channels of Ginger

5.6.1 Marketing channels

Three channels have been identified in marketing of ginger in study area.

Channel – I: Producer - Village merchant - Retailer - Consumer.

Channel – II: Producer - Village merchant - Wholesaler cum commission agent - Retailer - Consumer

Channel –III: Producer - Wholesaler cum commission agent – Retailer - Consumer

In the study area channel-I was most commonly used channel by the sample ginger farmers. In this channel village trader directly goes to the farmers field and purchase the commodity. The producer gets highest price in this channel. Majority of the producers sold their commodity to village merchants and again village traders sold to either wholesalers cum commission agents or to retailers in different channels.

Some of the producers sold their commodity directly to the wholesalers cum commission agents in the absence of village merchants. Only few farmers sold their produce directly to retailers, but in a very negligible proportion, hence were not considered as a separate channel. In channel-III the net price received by the farmers were low compared to channel-I and II, as the farmers had to incur transportation cost to bring the produce to the premises of wholesaler cum commission agent.

5.6.2 Marketing Cost Incurred by the Intermediaries

The marketing cost incurred per quintal of ginger by various market intermediaries like village merchant, wholesalers cum commission agent and retailers are presented in Table 4.8, 4.9 and 4.10 respectively. Among all the channels the highest transportation charges, were incurred in channel III (Rs. 178.00) followed by channel II and channel I (Rs. 175.89 and Rs. 127.00 respectively). More transportation costs incurred in channel III and channel II were mainly due to involvement of different agencies in marketing process. Marketing cost of ginger through different channels shows their relative efficiency. Marketing cost per quintal in channel I, II and III were Rs. 521.25, Rs. 768.11 and Rs.787.11 respectively (Table 4.11). Charges for transportation, deduction charges on sale price, loss in weight, weighing and packaging, miscellaneous costs have been considered as marketing cost. Marketing cost per quintal was recorded the highest in channel III followed by channel II and channel I. In channel I marketing cost was found to be the lowest among all the channels due to minimum involvement of intermediaries.

Tripathi (2006) reported in his study on marketing of ginger in Rhi-Bhoi district of Meghalaya, reported that highest component of marketing cost was the cost of transportation and according to him the channel involving wholesaler cum commission agent incurred maximum marketing cost.

5.6.3 Price Spread in Marketing of Ginger

Channel I

Through this channel the bulk of the produce is being disposed off. The village merchants go to the farmers' field and purchase the produce. In this channel the producer's share in consumer's rupee was the highest (73.20%). The profit margin retained by different intermediaries in this channel indicate that retailers received Rs. 212 while village merchants received Rs. 126.75, which was found to be maximum for respective intermediaries among all

the channels. This channel was found to be most efficient since, the marketing cost was lowest compared to other channels because of involvement of less intermediaries. The channel was the most efficient channel as indicated by the measure of market efficiency (5.15).

Channel II

In this channel all the intermediaries got less margin compared to channel I. The profit margin retained by village merchants, wholesaler cum commission agents and retailers were Rs. 102.33, 37.67 and Rs.85.00 per quintal respectively.

This was the second important channel found under operation. Here also village merchant goes to the farmers field and procure the produce. Therefore, farmers were devoid of incurring any transportation or other marketing costs. The total marketing costs involved in this channel was higher than that of channel-I. the producer would get only 67.18 per cent of the consumers rupee opining to sell his commodity through this channel. The marketing efficiency of the channel was worked out to be 3.41 which indicates this channel is less efficient as compared to channel-I

Channel III

Under this channel, a meager amount of produce is being sold. Farmers bring their produce to local market and sell to wholesaler cum commission agents. The marketing cost includes transportation cost, loading/ unloading and commission charges. Producer's share in consumer's rupee in this channel was the lowest (62.83%) among the three marketing channels studied. The marketing efficiency worked out was the least (3.06) in this channel due to higher marketing cost. Ginger farmers in these areas are more elite and educated. They could critically analyse the efficiency of each of the channels. This may be the strongest reason for very weak traffic of the commodities through this channel.

Tripathi (2006) in his study on ginger marketing in Ri-Bhoi district of Meghalaya also found the lower market efficiency when marketing channel involved wholesaler cum commission agent. Anil Kumar (2007) in his study found that producers share in consumer rupee was the maximum in the channel which involved farmer and consumer in Nainital district of Uttarakhand.

5.7 Problems in Production and Marketing of Ginger

5.7.1 Problems in Ginger Production

The sample farmer revealed that as such there were problems in production of ginger. The opinion survey was conducted regarding the problems faced by sample farmers in production of ginger and were subjected to Garrett's ranking technique. The results of the opinion survey presented in Table 4.13 are discussed here.

Among the seven factors considered, high incidence of pest and disease was the major problem expressed by most of the respondents. Ginger is the rhizome crop which grows beneath the soil. Hence, more susceptible to diseases. Heavy rainfall during monsoon season would aggravate disease menace. Hence, more care has to be given to protect the crop. Proper training on disease management at regular intervals would help the farmers to come out of such problems. The extension agencies need to gear up their activities in these lines.

High rate of rhizome material was another serious problem as experienced by many respondents. The seeds of high yielding varieties are usually priced high. Farmers comparing the prices of the local own seed material with these high yielding variety planting material and opining that the planting material rate is high is quite obvious. It is not a serious problem perceived by the farmers as high rhizome cost is much more compensated by higher yields and thus improved returns.

In recent years many labour migrate from one place to another in search of alternative occupations. Hence, non-availability of labour has become a universal problem in farming activities. This would lead to higher wage rates. The operations, if not completely, to the extent possible.

Other problems like non-availability of pesticides, insecticides and rhizome materials are not so serious which can br rectified locally by collective action.

5.7.2 Problems in Marketing of Ginger crop

The sample farmers revealed that with the marketing of ginger they have lot of problems. Among top ten problems were considered for analysis.

The opinion survey was conducted among the sample farmers who sold their produce to the village merchants, wholesaler cum commission agent or retailers to know the problems in marketing of ginger crop. The results of the opinion survey presented in the Table 4.14 are discussed here.

Garrett's ranking technique revealed that with respect to marketing problems unawareness of process for value addition was the most important. Simple process of value addition would have fetched higher prices to the farmers. But majority of the farmers are unaware of such simple value addition processes. Training on value addition in regular basis in the production areas would come to the rescuer of the farmers. No market regulation in ginger crop is another important problem as perceived by majority of the farmers. Efforts towards bringing the marketing of commodity under preview of market regulations would pay the way for better marketing of the commodity and would improve market efficiency. Such efforts would also take care the problem of no fixed rate for the commodity, lack of standard grades, low demand in local market and high commission charges. However, certain infrastructure could be created from the government side like creation of storage facilities and providing incentive prices for the growers. There is necessity for strengthening market information and intelligence system with respect to ginger crop to aid the marketing process in the ginger growing area.

The problems faced by the intermediaries were more or less similar to the problems faced by the farmers. Here also Garrett's ranking technique was employed to rank the problems based on the gravity of the problem. The suggestions discussed above to redress the marketing problems faced by the producers can take care the problems faced by market intermediaries. However, to combat volatility demand situation, market grid for ginger crop can be thought off at state or national level to transfer the commodities to stock areas from surplus areas to ease out the situation.

6. SUMMARY AND POLICY IMPLICATIONS

Ginger is one of the earliest known oriental spices and is being cultivated in India both as a fresh vegetable and as a dried spice since time immemorial. It is used in different forms such as raw ginger, dry ginger, bleached dry ginger, ginger powder, sliced ginger, ginger oil, ginger oleoresin, ginger ale, ginger candy, ginger beer, brined ginger, ginger wine, ginger squash, ginger flakes etc. It has usage in foods, beverages, preservatives, medicines and perfumery industries. Ginger is also an important foreign exchange earning crop. The processed products of ginger have high export value in the Middle East and some European countries. India stands first in the production (2, 73,333 tones) of ginger and second in the area (80,000 hectares) under ginger cultivation in the world. Though the productivity of ginger in India is higher i.e. 3,417 kg/ha than the world's average productivity (2,546 kg/ha), it is very less than that of USA which is the highest (51,925 kg/ha) in the world. The crop exhibited an annual growth rate of 4.6 per cent in area, 7.4 per cent in production and 2.7 per cent in productivity in India in 2009-10. Though grown all over India, the finest quality ginger comes from Kerala endowed as it is with a congenial climate and a rich earthy soil. Indian dry ginger is known in the world market as 'Cochin Ginger' (NUGC) & 'Calicut Ginger' (NUGK). Indian ginger especially Cochin ginger is considered one of the best in the world.

India has also imported significant quantities of ginger in various forms, viz. ginger fresh, ginger unbleached, ginger bleached, ginger powder (not elsewhere specified) including dried ginger to the tune of 12,807 tones valued at Rs. 1, 925 lakh in 2009-10. Nepal has been our main source of import.

Ginger is a member of the *Zingiberaceae* family and it originated in South-East Asia. It grows best in tropical areas that have high rainfall and hot and humid weather conditions. Ginger was introduced to Europe by Dutch, Portuguese, Arab and Spanish explorers or traders from about the 13th to the 16th century. It is revered as one of the most important and valued spices of the world.

Demand for fresh ginger has increased in the domestic markets substantially in the recent past. India's 2009-10 ginger production is estimated to be 25-30 per cent more largely due to high price of ginger in the past few years. With ginger prices touching record levels last year due to shortage of the commodity some farmers have again started growing ginger.

Uttara Kannada district is considered as the spice bowl of Karnataka. The hot humid climate with heavy rainfall and slopy land in the mountain ranges of malnad region possess to be the most suited land for successful growing of spices. In 2009-10 spices were grown in an area of 1939 hectares with a production of 7519.07 tonnes in the district. Ginger being the major spice in the district in terms of volume, though not in terms of value, was cultivated in the district in an area of 277 hectares with a production of 6486 tonnes (2009-10).

In recent years ginger growers are facing several production and marketing problems. The problem in production includes non-availability of genuine plant material, high incidences of disease especially viral diseases, etc., which have threatened the cultivation of ginger. Enough farm business data on cost of production and marketing of ginger in Uttar Kannada district are not available. The information on establishment cost, operating cost and input requirement of ginger would be of immense help to ginger growers of Uttar Kannada region. It enables the farmers in making decision in farm planning and enterprise selection. The result will be of immense use to the financial institution in fixing the scale of financial and schedule of repayment for the crop.

The present study covers the production and marketing management of ginger and identifies the problems faced by the ginger cultivator in its cultivation and marketing. It envisages suggesting possible corrective measures to bring about the desired improvement in production and marketing of ginger. Hence, the present study was undertaken in Uttar Kannada district with the following specific objectives.

SPECIFIC OBJECTIVES OF THE STUDY

1. To analyze the cost and returns in production of ginger in study area.
2. To study the pattern of sales (management) and quantity sold by the producer.
   To assess the price spread and marketing efficiency in the marketing of ginger through different marketing channels. .
3. To identify the production and marketing problems of ginger and to suggest appropriate policy guidelines.

Methodology

The study was based on both primary and secondary data. Primary data were collected through personal interview method from farmers, village merchants, wholesalers and retailers with the help of well-structured and pre-tested questionnaire exclusively designed for the study. The sampling technique followed was both purposive and random. From among the eleven taluks of Uttara Kannada district, top three taluks, Sirsi, Siddapur and Mundgod were selected based on the highest area under ginger crop. These three taluks put together cover nearly 70 to 80 per cent of the production in Uttara Kannada district.

In the next stage five villages were selected randomly from each one of the selected taluks, from among the major ginger growing villages. In the next stage, six farmers from each village were selected randomly to make the total sample size of 90 farmers. The details of the farmers so selected are presented in Table 3.1

Similarly, to elicit marketing information about ginger crop, ten village merchants, ten wholesalers cum commission agents and ten retailers from each taluk were selected randomly.

Analytical techniques

Cost of production, marketing cost and profit accrued to the farmers were worked out and presented in the tabular form. Different channels followed by the farmers were identified and the efficiency of each channels were compared in marketing of ginger. Garrett's ranking technique was used to analyze the problems faced by the farmers and intermediaries.

Findings

1. The cost of cultivation was higher in case of small (Rs.89435.17) farmers compared medium (Rs. 89203.30) and large (Rs. 87015.34) farmers. However, there were no substantial differences in the cost of cultivation between small, medium and large farmers. It was mainly because of high cost of rhizome material and more use of labour and fertilizers which are more or less same for per unit area irrespective of size groups.
2. In case of all the category of farmers, cost on rhizome material was the major component of the cost which accounts around 51.99, 52.37 and 50.51 per cent of the total cost in the case of small, medium and large farmers respectively.
3. Among the variable cost, labour cost was quite sizeable ginger is labour intensive crop. It requires more care compare to other field crops like cereals and pulses. At the time of harvesting, it requires maximum labour for digging, uprooting and cleaning of rhizomes.
4. It is revealed from the study that economy of large scale operation did not operate cost saving in ginger cultivation as the cost of cultivation was more or less same in all the three categories of farms.
5. The farmers followed three types of sales pattern to sell their produce i.e., selling the raw ginger directly to the village merchants, which is found to be more common in the study area. Three marketing channels have been identified in marketing of ginger viz.,

Channel – I: Producer - Village merchant - Retailer - Consumer.

Channel – II: Producer - Village merchant - Wholesaler cum commission agent – Retailer - Consumer

Channel –III: Producer - Wholesaler cum commission agent – Retailer - Consumer

In the channel – I, village merchant himself goes to the producer/farmer field and purchase the produce. This was the most commonly used channel in the study area. As per the information collected from the respondents 98 per cent of producers sold their produce through this channel.

6. Among all the channels the highest transportation charges, were incurred in channel III (Rs. 178.00) followed by channel II and channel I (Rs. 175.89 and Rs. 127.00 respectively). More transportation costs incurred in channel III and channel II were mainly due to involvement of different agencies in marketing process. Marketing cost of ginger through different channels shows their relative efficiency. Marketing cost per quintal in channel I, II and III were Rs. 521.25, Rs.768.11 and Rs.787.11 respectively (Table 4.11).

7. In channel I the net price received by the producer was Rs. 2350.00. The price spread in first channel was Rs. 860.00. Profit of retailer registered highest amount that is Rs.212.00 followed by that of village merchants (Rs.126.75). Net price received by producer in channel II was Rs.2130.00. The profit margin earned by the village merchant was highest (Rs.102.33). Producer's share in consumer rupee in channel III was 62.83 per cent. Net price received by the producer was Rs.2150.00. Retailers has got highest profit margin Rs. 182.32. Marketing efficiency was very low in this channel (3.06). Channel I was found to be most efficient since, the marketing cost was lowest compared to other channels because of involvement of less intermediaries. The marketing efficiency in this channel was recorded the highest (5.15).

8. Ginger farmers in these areas are more elite and educated. They could critically analyze the efficiency of each of the channels. This may be the strongest reason for very weak traffic of the commodities through this channel.

9. Among the seven factors considered, high incidence of pest and disease was the major production problem expressed by most of the respondents. Ginger is the rhizome crop which grows beneath the soil. Hence, more susceptible to diseases. Heavy rainfall during monsoon season would aggravate disease menace. Followed by high rate of plant protection chemicals (II), high rate of rhizome material (III), non-availability of labour (IV), high wage rate (V), non-availability of rhizome material (VI), non-availability of pesticides and insecticides(VII).

10. Garrett's ranking technique revealed that with respect to marketing problems unawareness of process for value addition was the most important. Simple process of value addition would have fetched higher prices to the farmers. But majority of the farmers are unaware of such simple value addition processes. Training on value addition in regular basis in the production areas would come to the rescuer of the farmers followed by no regulation of marketing in ginger (II), no fixed rate (III), lack of storage facilities (IV), no incentives from government (V), no premium price (VI), lack of market information (VII), lack of standard grades (VIII), low demand in local market (IX) and high commission charges (X).

11. In case of intermediaries lack of storage facilities has got first rank in Garrett's ranking technique followed by no premium prices, lack of market intelligence and market information (III), no proper grading methods (IV), volatility of demand (V), wastage of the material (VI) and non-availability of labour (VII).

POLICY IMPLICATIONS

Despite the remunerative returns and tremendous importance of spices, it is rather unfortunate that the sector has not achieved the required level of development because of the problems in the pre and post-harvest activities. In this regard, based on available information of field survey, this study tries to highlight some of these problems and bring out the measures for its future development.

1. In the variable cost, the rhizome (seed material) cost accounted 60 per cent of the total cost and labour cost accounted for 10 per cent. Since, high yielding rhizome material were used in cultivation, the cost was very high. Supply of plant material at subsidized rates would reduce the cost of cultivation.

2. Labour availability particularly at the time of harvest and cost of labour in general were the serious problems in ginger farming. Mechanization of many farm operations including harvesting could save labour substantially.
3. In marketing of ginger, the village merchants share in the consumer's rupee was higher. Therefore, growers should organize themselves on cooperative lines and sell directly to the retailers at the distant markets in order to increase their share.
4. All the farmers were expressed the incidence of pest and disease as the major cause for the reduction in productivity of ginger and the profit margin. Rhizome rot disease was the more prolific in these areas. Hence, extension agencies need to gear up their activities to train farmers for effective control of disease.
5. About 65.00 per cent of the traders expressed the problem of inadequate storage facility for ginger produce. Hence, cold storage facilities have to be created in the ginger growing areas augment marketing process.

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APPENDIX I

Farmers Schedule

I. General Information

a) Name of the respondent :
b) Age:
c) Village:
d) Taluk:
e) Education:
f) Family size:

Male	Female	Children	Total

g) Main occupation:
h) Subsidiary occupation:
i) Annual income:
j) Nearest market for ginger:
k) Distance:

II. Land Holdings

A. Operational holding

Type of land	Owned	Leasedin	Leased out	Total
Dry				
Irrigated				
Garden				
Total				

B. Cropping pattern

Season	Crop	Area(ac)	Yield(q/ac)
Kharif			
a.			
b.			
c.			
d.			
Rabi			
a.			
b.			
c.			
d.			
Summer			
a.			
b.			
c.			
d.			

C. Particulars price of ginger

Variety	Area	Yield q/ac	Selling (Rs/qtl)

D. a) Land rent

Dry land	Rs/ac
Irrigated land	Rs/ac
Garden land	Rs/ac

b)Labour wages

Male	Rs/day
Female	Rs/day
Bullock pair	Rs/day

II. Inventory of Farm machinery and equipments

Sl.No.	Name of the machinery/equipment	No.of year of service	Purchase value(Rs.)	Junk value(Rs.)
1.	Farm building			
2.	Bullock cart			
3.	Tractor			
4.	Power tiller			
5.	TP sets			
6.	Sprinklers/irrigation equipment			
7.	Drier sprayers			
8.	Dusters			
9.	Plough			
10.	Harrow			
11.	Piaxe			
12.	Spades			
13.	Agriculture sickles			
14.	Baskets			

III. Details of loans

Sl.No.	Source	Amount	Year of loan	Rate of interest	Amount repaid

IV. Farm operation and cost incurred in ginger cultivation

Area (ac): Variety:

Sl.No.	Particulars of operation	Equipment /material used	Qty	Price (Rs/qtl)	Labourutilisation				
					Male (days)	Female (days)	B/P (days)	M/P (days)	
								Hrs.	Rate /hrs
	Land operation including leveling								
	Ploughing								
	FYM& Application								
	Sowing								
	Seed treatment								
	Fertilizers& Application								
	PP chemicals								
	Intercultivation								
	Weeding								
	Earthing up								
	Harvesting								
	Cleaning								
	Drying								
	Others if any								

V. Returns

Sl.No.	Product	Qty	Selling price(Rs/qtl)
1.	Main product(qt)		
2.	By product(No./wt) a) b)		

VI. Particulars of sales by farmers

Agencies to whom sold	Frequency of sale	Total Quantity Sold	Sale price (Rs/qtl)	Marketing cost				
				Transportation	Cleaning	Loading & Unloading	Comm.charges	others

VII. Production problems encountered by farmers

Sl.No.	Problems	Ranks
1.	High incidence of pest and disease	
2.	High rate of Plant protection measures	
3.	High rate of rhizome material	
4.	Non-availability of labour	
5.	High wage rate	
6.	Non-availability of rhizome material	
7.	Non-availability of pesticides and insecticides	

Marketing problem faced by farmers

Sl No.	Particulars	Ranks
1	Unawareness of process for value addition	
2	Lack of regulated market	
3	No fix rate	
4	Lack of storage facility	
5	No incentives from government	
6	No premium price	
7	Lack of market information	
8	Lack of standard grades	
9	Low demand in local market	
10	High commission charges	

APPENDIX II

Market functionaries

Village merchant/wholesaler cum commission agent /retailers

I. General information
   a) Name of the Respondent
   b) Type of market function performed
   c) Location
   d) Age
   e) Education

II. Details of Marketing activities of ginger during the year

Product	Qty purchased/ handled	Purchase price(Rs/qtl)	Qty cost if any	Qty sold	Sale price (Rs/qtl)	Commission charges (Rs/qtl)
Dry ginger						
Fresh ginger						

III. Marketing costs and margins

Sl.No.	Particulars	Qty	Unit	Amount
1.	Establishment			
2	Shop rent			
3	Labour wages			
4	Transportation cost			
5	Storage cost			
6	Storage losses			
7	Tax and less			
8	Miscellaneous cost			

IV. Finance availed for the business

Sl.No.	Source	Amount of loan(Rs)	Year of loan	Rate of interest(Rs)	Amount Repaid(Rs)

V. Inventory of machinery/equipment and building

Sl.No.	Particulars	Year of purchase/construction	Purchase value	Junk value	No. of years of useful service
1.	Building Shop Godown				
2.	Truck/tractor				
3.	Others if any				

VI. What facilities do you provide to the producer who brings produce for sale? Yes/No
Loan/Storage/Accommodation/Transportation/Advance payment/Seed/Fertilizers/Pesticides etc
Do you give any credit facilities to the farmers who bring produce to your shop? Yes/No
If yes,

a) To how many farmers
b) Maximum duration for which amount is advanced
c) Amount advanced per farmers
d) Total amount advanced
e) Conditions for advancing loan(security)
f) Mode of recovery followed
g) Interest rate charged

VII. Do you have shop owned/rented?
If rented, what is the rent per year:
License fee:
Tax paid (basis of taxes):
Maintenance cost:
Insurance:
Any other costs (specify)

VIII. Distance of your shop from the market place:
Place of arrivals of ginger:

IX. Whom do you sell the ginger

X. At present what problems(inconveniences) you are facing in ginger marketing

XI. Problems Encountered

Sl.No.	Problems	Suggestions
1.	Storage facility	
2.	No premium prices	
3.	Lack of market intelligence and market Information	
4.	Grading problem	
5.	Volatility in demand	
6.	Wastage	
7.	Non-availability of labour	

PRODUCTION AND MARKETING MANAGEMENT OF GINGER IN UTTARA KANNADA DISTRICT

BHARATI S. BHAT **2011** **DR. C. MURTHY**
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ABSTRACT

The study on Production and Marketing management of ginger was conducted in Uttara Kannada district of Karnataka state. From Uttara Karnataka district, top three taluks namely, Sirsi, Siddapur and Mundgod were selected based on the highest area under ginger crop. The required data for the study were obtained from both primary and secondary sources. Primary data was collected from 90 farmers and 30 market functionaries spread over three taluks of Uttara Kannada district. To evaluate the objectives of the study, data were analysed using simple tabular analysis with averages, percentages and Garrett's ranking techniques were adopted.

The per hectare cost of cultivation was higher in case of small (Rs.89435.17) farmers compared medium (Rs. 89203.30) and large (Rs. 87015.34) farmers. However, there were no substantial differences in the cost of cultivation between small, medium and large farmers. The average net returns on per hectare basis was worked out to be about Rs. 3,38,064, Rs.3,60,547 and Rs. 3,78,427 for small, medium and large farms respectively and on overall basis it was Rs. 3,76,535 per hectare. The benefit cost ratios were 4.78, 5.13, 5.34 and 4.92 in small, medium, large and pooled farms respectively. Supply of plant material at subsidized rates would reduce the cost of cultivation.

Three marketing channel were identified in which the producer's share in consumer's rupee was highest in channel I. marketing efficiency in channel I was recorded highest (5.15) compared to other two channels. The major problems confronting the cultivators areincidence of pest and disease.Hence, extension agencies need to gear up their activities to train farmers for effective control of disease. In case of intermediaries lack of storage facilities has got first rank. So, cold storage facilities have to be created in the Ginger growing areas.