CHAPTER 1

STATEMENT OF THE PROBLEM, REVIEW OF LITERATURE AND METHODOLOGY ADOPTED

1.1. Introduction

With 160 million hectares of gross cropped area, agriculture is the key component of India’s economy. Agriculture accounts for 30% of the GDP, concerns the entire population, employs over 60% of it and is therefore the fulcrum of the Indian economy. India is one of the leading agricultural economies of the world and will need to harness and leverage this potential with a vision. The task can be achieved by increasing food production, utilize and market the food we produce through waste reduction and value addition, create an enabling environment and exports. The Indian food chain is very fragmented and complex and is dominated by small players at the farm and intermediary level. With around 11% of the total land area of the world, India accounts for more than 16% of the world’s production (FICCI, 2002). But inspite of its inherent strengths in tea, spices, fruits, vegetables etc, India has performed poorly in the international market. Inspite of being one of the largest producers of fruits and vegetables in the world, we waste fruits and vegetables every year equivalent to the annual consumption of the United Kingdom ie., Rs. 23000 crores (Datta, 2004).

India is the second largest producer of fruits (44 million tonnes) and vegetables (87.5 million tonnes) with a unique position in fruits like mango, litchi, banana, pineapple, sapota and grapes. Our share in the world production is about 10.1 per cent in fruits and 14.4 per cent in vegetables. Horticultural crops cover about 8% of the total area contributing about 20% of the gross agricultural output in the country. Thus, in view of the importance of fruit and vegetables in the agricultural economy of India, their production and marketing deserve the focused attention of all the stakeholders (Pandey and Kumar, 1999).

Though India has a major share in the production of fruits and vegetables, owing to low productivity and increased post harvest wastage, the per capita availability of fruits and
vegetables in India is as low as 100 grams per day and 200 grams per day respectively against the minimum dietary requirement of 140 and 270 grams of fruits and vegetables per day (Vivek, 2005b). Due to the presence of diverse agroclimatic conditions and long growing seasons, there is a year round availability of fresh fruits and vegetables in India.

The future of the Indian farmer depends on the success of the agriculture sector as India’s prosperity is predominantly linked to the growth in income in the agrarian sector of the economy. An increase in the liberalization of the economy has tried to lift the protection that the food and agriculture sector once enjoyed in the country. This has in a limited sense exposed the sector both to the opportunities and challenges of the global food economy. The market forces are compelling the Indian agriculture producers to increase the quality of their farm produce while continuing to maintain their cost competitiveness in order to be able to compete effectively in the global food market (Palaniappan, 2006). Market driven approaches in the agriculture sector have been talked about for a while, but scepticism remains, given the large numbers that one is dealing with. At least two thirds of the rural poor derive their primary livelihood from agriculture. The key to increasing the income of the rural people in India is improving the profitability of small farms which would in turn push up the employment and wage rates for farm labourers (Meenakshi and Poleman, 1994). Between 1960 and 2000, the average farm size in India shrank from 2.7 hectares to less than 1.2 hectares due to the population growth which continued to drive the farm size downwards (Gulati, 2003).

The transition of agriculture towards commercialization/industrialization is natural though a number of external factors like agriculture policy framework, extent of market imperfections etc, may influence its pace (Shergill, 1991). This study attempts to analyse the existing frameworks of agriculture-market integration and in turn to evolve generic frameworks which may prove relevant and responsive in the agriculture product marketing system to integrate the farmer, trade, agroindustry and the consumer.

The expert committee on strengthening and developing agricultural marketing had recommended in 2001 to promote specialized markets for fruits and vegetables with
comprehensive and efficient infrastructure facilities (Acharya, 2001). Mega markets and/or alternative marketing structures with the involvement of private, public, cooperative or joint ventures were suggested for large scale efficient marketing of perishable commodities. It is in this context that the alternate marketing mechanisms prevalent in the state for perishable commodities gains significance.

It would be naïve to say that all the issues discussed are the be-all and end-all of fruit and vegetable marketing in the state of Kerala. There may be more pertinent issues that are not touched upon. It has been a constant endeavour to not only identify specific challenges and threats, but also to identify practical, implementable solutions to address those challenges.

The existing system of marketing of horticultural produce leaves much to be desired, in so far as the interests of the producer-seller and that of the consumer is concerned. There is ample scope for bringing reforms in the existing system of marketing and the structure of the market for these commodities, so that remunerative prices can be ensured for the producers and more number of consumers can be catered to by providing the commodities at a reduced price through cost reduction on the marketing front. The mechanism of the present system of marketing of horticultural produce is stifled by a number of bottlenecks such as (1) absence of pricing of the commodities commensurate with the quality, (2) lack of cleansing and grading before sale, (3) lack of storage facilities, (4) lack of transparency in transaction methods, (5) absence of standard weights & measures etc (Gandhi and Namboodiri, 2002). The peculiar characteristics of fruit and vegetables such as their perishability with high level of post-harvest losses (estimated at 25% to 40%), high fluctuation in the prices, need for proper storage, quick transportation to add place value to the product call for short marketing channels and customized service to the consumers through a responsive marketing system.

Micro-level farmer marketing entities, as an instrument of direct marketing have got tremendous potential to address the desiderata of the traditional marketing system. These instruments of direct marketing can not only bring economies of scale by ensuring optimum utilization of local resources, but also can go a long way towards reducing the costs and margins in the marketing of the produce.
Farmer marketing entities, as an instrument of direct marketing with producer-sellers has the potential to bring substantial reduction in the expenses incurred on the different aforesaid heads. Needless to say that direct marketing by a group pf producer-sellers will help them in avoiding the commission of the commission agents constituting a very high portion of all charges and taxes. Homogeneous farmers can form themselves into self-help groups at district levels for undertaking the marketing of their produce collectively and reap the benefits of group-marketing through different activities like joint market intelligence, joint hiring of trucks, group bargaining, joint storing, grading, preliminary processing and packing. This will not only ensure remunerative prices for their produce by putting them in a better bargaining position vis-a-vis the buyers but also will go a long way towards bringing saving in different costs both in terms of time and money.

Thus the need of the hour is to encourage group marketing through requisite interventions by the different facilitating agencies(Shastri, 2006). The district level authorities of the fruit and vegetables-producing districts with sufficient marketable surplus should make efforts in drawing up proper action plans for this right from facilitating the formation of such groups, identifying the most profitable channel of direct marketing for the produce, thrashing out the inter-market linkages, arranging suitable finance from different sources with minimum weighed cost of capital and giving all types of technical assistance to these groups for their proper management (Kaul, 1997).
1.2. Marketing

1.2.1. Marketing

*Market* is an operationalized atomistic realm of impersonal economic exchange of goods and service by voluntary transactions, mediated by large number of autonomous fully informed entities with profit motive with a free entry and exit. Philip Kotler, the father of Modern marketing defined *Marketing* as a societal process by which individuals and groups obtain what they need and want through creating, offering, and freely exchanging products and services of value with others. He further defined *Marketing Management* as the analysis of planning, implementation and control of programs designed to create, build and maintain beneficial exchanges with target buyers for the purpose of achieving organisational objectives. Marketing Management Philosophies include production, products, selling, marketing and societal Marketing(Kotler and Armstrong, 1997). The objectives of a marketing system are maximisation of consumption, consumer satisfaction, choice and quality. The core concepts of marketing are

- Target markets & segmentation
- Needs, Wants and Demands
- Product or Offering
- Value and Satisfaction
- Exchange and Transactions
- Relationships and Networks
- Marketing Channels
- Supply Chain
- Competition
- Marketing Environment

*Simple Marketing System* : The term market stood earlier for the place where buyers and sellers gathered to exchange their goods. Marketers however see sellers as constituting an
industry and the buyers as constituting a market. The relationship between industry and market can be depicted as follows.

(Kotler and Armstrong, 1997)

Sellers and buyers are connected by four flows. The sellers send products, communications and services to the market: in return they receive money and information. The inner loop shows an exchange of money for goods and the outer loop shows an exchange of information (Kotler and Armstrong, 1997). With each type of market, the system is modified to suit the needs so that the ultimate objective is attained.

The Four Ps, The Four Cs in marketing (Kotler and Armstrong, 1997)

1.2.2. Marketing management concepts

1. Production Concept: This concept holds that consumers will favour products that are available and highly affordable. Therefore management should focus on improving production and distribution efficiency. The production concept is a useful philosophy in
situations when demand for a product exceeds supply and when the product’s cost is too high and improved productivity is needed to bring it down.

2. Product Concept: This concept holds that consumers will favour products that offer the most quality, performance and innovative features and that the organization should therefore devote its energy to making continuous improvements. It is a detailed version of the new product idea stated in meaningful consumer terms.

3. Selling Concept: This concept holds that consumers will not buy enough of the organization’s products unless the organization undertakes a large scale selling and promotion effort. The product is typically practised with unsought goods. The aim is to sell what they make rather than make what the market wants.

4. Marketing Concept: This concept holds that achieving organizational goals depends on determining the needs and wants of target markets and delivering the desired satisfactions more effectively and efficiently than competitors do.

* Selling Concept and Marketing concept contrasted* (Kotler and Armstrong, 1997)

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The selling concept takes an inside out perspective. It starts with the factory, focuses on the company’s existing products, and calls for heavy selling and promotion to obtain profitable sales. It focuses heavily on customer conquest. In contrast, the marketing concept takes an outside-in perspective. It starts with a well defined market, focuses on customer needs,
coordinates all the marketing activities affecting the customers and makes profits by creating long term customer relationships based on customer value and satisfaction.

5. Societal marketing concept : This concept holds that the organization should determine the needs, wants and interests of the target markets. It should then deliver superior value to customers in a way that maintains or improves the consumer’s and the society’s well-being. This concept calls upon marketers to balance three considerations in setting their marketing policies : company profits, consumer wants and society’s interests.

Customer Delivered Value : The customer delivered value differs with the concept followed whether it is a selling concept or a marketing concept or a societal marketing process adopted.

1.2.3.Agricultural Marketing

Agricultural marketing includes the movement of agricultural produce from farms where it is produced to the consumers or manufacturers. This covers physical handling and transport, initial processing and packing to simplify handling and reduce wastage, grading and quality control to simplify sales transactions and meet different consumers’ requirements, and holding over time to match concentrated harvest seasons with the continuing demands of consumers throughout the year. For the farmer, the strategic function of the marketing system is to offer him a convenient outlet for his produce at a remunerative price. To the consumers and the manufacturers of agricultural raw materials, assurance of a steady supply at a reasonable price is the vital service. Prices are determined through free market process by negotiations at rural purchase, wholesale and retail stages, and represent a balance between the consumers’ ability to pay and the farmers’ need for incentive to produce(Skoppek, 2006). An effective marketing system will be geared towards expanding the range and types of consumer service, and thus offer procurement outlets.

An efficient marketing system is vital to provide an incentive to the farmers to produce more, convey the changing production needs of the economy to producers to enable production
planning and foster true competition among the traders and eliminate the exploitation of farmers, particularly the small and marginal ones, who predominate agrarian sector in our country (Sarabjit Choudhary, 2001). There is a three-tier system for marketing of agricultural produce in the country.

(i). **Rural Primary Markets**: Periodic markets or *haats* are the major rural market system in India. They are the oldest trading institutions in existence. These markets provide an opportunity not only to purchase consumer goods but also to sell surplus agriculture and allied produce¹. Eg. The popular Angadis in Kerala, Hatwara in Rajasthan, Painth in Uttar Pradesh etc (Patnaik, 2002)

(ii) **Secondary/Assembly Markets**: The secondary markets cater to the distant demand. These markets attract potential buyers/traders who assemble the produce and consolidate a truck load for sales in the city wholesale market (Changchui, 2004). These operations are also primarily carried out in an informal manner².

(iii) **Wholesale Markets**: These markets provide a convenient point for gathering a large amount of produce from different sources and for its division into small assortments to meet the needs of the retailers in the country. The procurement of agri-produce by various government agencies also takes place through these markets. The volumes handled in these markets are much larger. These markets, therefore, require not only an elaborate physical infrastructure but also some kind of regulation to protect the interest of both the producer and the consumer (Boer and Pandey, 1997). **Most wholesale markets are covered under the Agriculture Produce Marketing Committee Acts and are also called regulated markets.** In major cities like Delhi, Kolkata, Bangalore, etc., these markets perform a dual function; transit market for supplies to the hinterland and distant markets and terminal market for supplies to the retailers for local consumption³.

(iv). **Regulated Markets**: The Government have taken the initiative to promote organized marketing of agricultural commodities with the basic objective of setting up a network of physical markets to ensure reasonable gain to the farmers by creating an environment in
markets for fair play of supply and demand forces, regulate market practices and attain transparency in transactions. The number of regulated markets has also been increasing in the country. The advent of regulated markets has helped in mitigating the market handicaps of producers/sellers at the wholesale assembling level (www.niam.gov.in). But, the rural periodic markets in general, and the tribal markets in particular, remained out of its developmental ambit.

The basic objective of market regulation is to regulate the trade practices, increase market efficiency through reduction in market charges, elimination of intermediaries and to protect the interest of the producer-seller. The market committees, whose members are nominated by the state government, manage the markets. No person or agency can carry on any wholesale marketing activity in the market area, except through a license issued by the market committee. This has made the traders a dominant force. As a result, monopolistic practices and procedures have taken root and have prevented development of free and competitive trade in agriculture (Spice, 2001).

(v). Direct and Alternative Marketing: In the highly regulated and monopolistic wholesale markets the farmers are unable to bargain effectively in the market. Intermediaries and system inefficiencies consume a disproportionate share of the consumer price. There is no incentive for the farmer to improve quality and productivity. Farmer’s dependency on the trader is high due to which he loses the freedom to find the best buyer. Even the technical services to the farmer are inadequate and ineffective (www.jkhortibiz.nic.in). The only option left to modernize the marketing system is to set up an alternative marketing system that may operate parallel to the existing system. These markets would be outside the purview of the APMC Acts and would ensure transparency, quality control, efficiency and fair play (Patnaik, 2002).

Direct marketing (retailing) by farmers was experimented through Apni Mandis in Punjab and Haryana. A modified concept was introduced in Andhra Pradesh through Rythu Bazars and in Tamil Nadu through Uzhavar Santhaigai. These markets are being run by the state governments, as a promotional measure, to introduce the principle of marketing without
middlemen for the benefit of the small and marginal farmer. VFPCK run farmer marketing entities are a form of alternative marketing by the farmers.

(vi) **Forward and futures Market** : Direct marketing can be effective only if farmers have an opportunity to access reliable reference prices for a range of grades, qualities and delivery times. Further, with the coming into force of the WTO provisions on agriculture, the need for effective price risk management has become imperative to protect the agriculture sector—primary and processed—from price volatility. **Forward and futures contracts enable this price recovery and price stability. They also afford an opportunity for the farmer to hedge his risk by deciding in advance what to produce/sell/store, etc**(Basab Dasgupta, 2004)\(^6\). Futures markets have great potential for performing the function of price recovery and risk management. However poor infrastructure, logistics, linkages with financial institutions and spot markets, etc., plague them. These markets need to be strengthened to instill confidence and awareness among the market players(GoK, 2003).

(vii). **Terminal market** : This works on the following principles. It will have a hub and spoke format, that is the Terminal Market (the hub) to be linked to a number of collection centres (the spokes). The collection centres (Spokes) are to be conveniently located at key production centres to allow easy access to farmers(GoI, 2006). The following state of art facilities will be provided like electronic auction, grading, washing and packing lines, processing and exports, banking and transport including reefer vans etc.

Marketing extension envisages product planning, marketing information, securing markets, alternative marketing, improved marketing practices and training of manpower. Agricultural produce marketing requires connectivity between the market and exporter/trader/grower/industry through wide area network (WAN) of national and international linkages in order to provide online information with regard to commodity arrivals, prevailing prices, latest research in agricultural marketing, export related documentation etc. Hence, there is a need to set up Agricultural Marketing Information Service at the national level. It would be an integrated service incorporating the farmer
advisory service with decision support system (DSS). Precision Farming or Producing for the Market is the emerging shift.

**(viii). Contract farming** represents partnerships for growth. It is basically an agreement with farmers or cultivators on one side and market intermediaries, processors and marketing firms on the other side, for the production and marketing of agricultural produce under forward agreement at predetermined price. It is a commitment on the part of the farmer to produce a specific commodity in qualities and quantity standards determined by the buyer (Mukesh Gupta, 2006). It is also a commitment on the part of the buyer to support the farmers production and to buy the commodity. Contract farming contributes to adding value by

- Facilitating agro processing plants which would otherwise not exist if supplies were not forthcoming in an organized manner
- Enabling export of produce from small farmers which otherwise would not be able to access these demanding markets
- Encouraging higher quality production and better handling and sorting thereby increasing value of small holder production
- Enabling producers and processors to achieve economies of scale thereby lowering costs and making them more competitive

Thus farmer bears risk associated with production and buyer bears the risk associated with the marketing of the final produce. For profitable agriculture “larger farms” become increasingly necessary. Country’s predominantly small farms have to come together to make “larger farms” and in turn profitable agriculture. If Indian farmers have to compete in **GLOBAL MARKETS** they have to produce crops as required by the buyers. Buyers active involvement in production of crops therefore becomes a sine-qua-non condition.

**Company Contributes to Farm**

- Technical Guidance and management skills
- Seed Material and all other agricultural inputs
- Access to wide range of managerial, technical and extension services.
- Improved methods and new technologies of production.
- Price risk transferred to the company
- Cost of transaction and marketing

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(ix). **E marketing**: Modern information and communications technologies (ICTs) and web-based marketing of agricultural produce hold great promise for the socio-economic development of rural hinterlands in India. The ‘anytime-anywhere’ advantage of e marketing leads to efficient price discovery and offers economy of transaction for agricultural trading (Subash Babu, 2002). This attracts many rural developmental agencies to deploy websites for marketing agricultural produce. For instance, rural entrepreneurs can benefit because ICTs help to improve access to markets or supply chains and provide a broader base for decision-making, thus making risk more calculable. Moreover, many local communities have experienced that ICTs have increased bottom-up participation in the governance processes and may expand the reach and accessibility of government services and public infrastructure. The electronic village project of M.S. Swaminathan Research Foundation (MSSRF) in Pondicherry received the Stockholm award for its promise.

E marketing is basically doing business over interconnected networks. Present E commerce activities include transport, banking, warehousing and advertising with the following steps involved: Information exchange, Money transfer, Transfer of goods, Price fixation, Advertising, Warehousing and transportation (Ansari and Carl, 2003)

The challenges to agricultural website usability for rural marketing in India arise mainly because of the highly specific local needs and the great diversity in local conditions (Mahesh, 2000). The major challenges are

- Poor literacy rate – low use of textual information
- Remote village locations - physical distances compounding problems of lack of proper price information and habitual dependence on middlemen.
- Absence of alternate media for dissemination of info.
- Absence of info in vernacular languages and multiplicity of languages.
- Cash crunch of farmers, immediate cash transaction system and reluctance of banks to provide soft loans to farmers.
- Economic, low-cost solutions - any technology solution aimed at benefiting the masses in rural India must be affordable and low-cost so that the perceived
economic benefits of such an endeavor are much more than the cost of switching over to a different technological solution.

In the absence of timely and correct information about prices, arrivals and market trends, compounded with the problems of low cash-at-hand and proper advice, farmers are forced to sell their produce at lower-than-expected rates. The result is that the benefits of the ‘green revolution’ have not really percolated down to the farmers.

A good example of the creation of relevant local content are the ‘Infoshops’ in Pondicherry, India. After information requirements are identified during a trial period, volunteers from the village create a local database comprising government programs for low income rural families; cost and availability of farming inputs such as seeds and fertilisers, grain prices in different local markets; a directory of insurance plans for crops and families; pest management plans for rice and sugar cane; a directory of local hospitals, medical practitioners and their specialties; a regional timetable for buses and trains; a directory of local veterinarians, cattle and animal husbandry programs(Chatterji, 2004).

Agriculture E marketing

![Diagram of the model](image)

(Vivek Bhargava, 2002)
1.3. Market structure and strategic models in agriculture marketing

1.3.1. Market structure

Agriculture in any country goes through a cycle of development process which can be termed as commoditisation to commercialization. Indian agriculture is characterized by small holdings, seasonality and traditional production and management practices which make it a dominantly supply driven system. Indian food market is extremely fragmented with a large number of players on the buyers and sellers side which merely increases the cost of agricultural produce without adding any value to it. This does not mean a high level of competition and efficiency as their size prohibits them to make the necessary investments in the production and procurement of food. Consolidation of the food chain will lead to decrease in the number of intermediaries and subsequent decrease in the spread between the farmer price and consumer price. Generally farmers get 25-35% of the final consumer price compared to other developed and developing countries in South East Asia where this percentage is around 60-70% (Goel, 2001). Backward and forward integration is the alternative but there are many hurdles in the Indian scenario like inability of corporate sector to purchase agricultural land, failure of contract farming to gain momentum, lack of road network and storage facilities and laws like the Agricultural Produce Markets Acts which make consolidation of business in the agricultural market virtually impossible (Vaswani et al., 2003). In India, marketing of perishable commodities occur through farm gate trading, local markets and large rural markets or assembly markets.

Ideally India has to move from the current supply driven production system to a demand driven production system. Imparting market orientation through dissemination of market information, linkage with agro processing sector and promoting competition and transparency of agricultural produce markets have to take place. The mismatch between supply and demand happens primarily because of the inability of the farmers to forecast the exact demand, changing nature of the demand itself and the lack of efficiency of commodity markets (Vaswani et al, 2003). The farmers unfortunately lack the mechanisms to control and influence the demand. Still, the assessment of demand through better understanding of
agricultural markets must precede any effort to reconfigure the agricultural production systems. However, the process of aligning the demand and supply is quite complex due to the influence of numerous external factors on production systems and/or operation of agricultural markets. It was observed that the vegetable processing industry is a representative sample of the effect of uncertain conditions and strongly recommends the need for systematic planning for the industry to succeed. The three components important for this industry are market, industry and agriculture which he considered as parts of a logistical chain. But each of these components has a different cyclical pattern and therefore effective and efficient planning can only partially deal with this uncertainty. Under the circumstances, the best that possibly can be attempted is a tactical balance between demand and supply.

It is also necessary to link agriculture production system and product characteristics with the preferences of the consumers, processors and manufacturers to achieve market orientation. Therefore, in addition to achieving tactical balance between demand and supply, mismatches also have to be overcome in terms of quality, product attributes and product specifications. The challenge therefore lies in aligning the projected supply with the projected demand or in other words, adjusting the agricultural production system to market conditions of demand and supply to the extent possible within a given market boundary. In the process of promoting market oriented agriculture, several initiatives will have to be undertaken to restructure processes, enterprises and institutions including capacity building of personnel engaged in its promotion.

The constraint of Indian agriculture is the lack of backward and forward integration in the agriculture supply chain (Surajit Deb, 2005). The presence of a large number of intermediaries in the supply chain has serious cost, quality and time implications for agriculture trade and result in huge handling, storage and other wastages. A lot of value is lost in the supply chain in the movement of agricultural produce from farm gate to the consumer plate. This has an adverse effect on the marketing efficiency of agribusiness firms. The FAIDA study on Food and Agriculture Integrated Development Action shows the difference between the agriculture supply chain in India which has about 9 intermediaries and the US which has only 2 (FAIDA, 1997). There is a mark up of around 9% in the US in
agriculture produce from the farm level to the final buyer, as compared to 135% in India. Backward and forward linkages in the supply chain are important to increase the marketing efficiency of agribusiness. It should be able to compress or shorten its supply chain and prevent the value created from dissipating among the intermediaries in the chain. Higher marketing efficiency should lead to a higher price to the producer farmer, and a lower price to the final consumer on account of the reduction in margins in the various levels of the supply chain (FAIDA, 2004).

An efficient marketing system can provide better prices to producers and improve the availability of competitively priced quality produce to consumers. Inefficiency may be the result of lack of markets or inefficient marketing due to poor roads, lack of knowledge about marketing among farmers and an inadequate quantity of products to attract sufficient traders.

1.3.2. Issues to be addressed in developing a potential market

**Estimation of optimum levels of supply**: This assessment can be made based on study of present scenario and on local supply and demand estimates and forecasts.

**Type of market**: In areas where there is large scale production of fruits and vegetables, an improved assembly market is the need whereas in an area where production is primarily for exports and where well established independent marketing channels exist, only rural retail markets may be required.

**Catchment area to be served**: This is to be done based on the geographic, demographic and sociological information on the area including agricultural production data, relevant studies on crop marketing, existing marketing channels etc.

**Checking market viability**: This is important to ensure that they are economically sound. The impact of the market should be quantified, calculating the costs and benefits to see whether the capital and running costs are likely to be covered by the expected revenues. This depends on two factors – expenditure levels and the market’s ability to attract farmers and
traders. The costs must be covered so that such ventures can be scaled up throughout the country and should not depend on external support. The market must be evaluated in social and qualitative terms.

**Ownership of the market:** Theoretically, it can be expected that public sector markets have public sector investments and public sector management. Private markets are independently established by private enterprises with private sector investment and private sector commercial management. In practice there are few markets which conform to one or other of these extremes. The markets are required to be self funding and to operate with a commercial approach to accounting and financing. In nearly all markets, the marketing of agricultural products is dominated by the private sector. In markets which use auction, the auction process is carried out by the public authority or managing authority (Kaul, 1997). The fruit and vegetable market in New Delhi licenses wholesalers to act as auctioneers with set fees for the produce supplied by the farmers. An alternate approach is for the managing authority or its appointed agent to conduct auctions.

Buyer registration is applicable when payments are on credit. Credit guarantee schemes which may be incorporated in market rules, can require registration of buyers, bank or other financial institution guarantee and a follow up system of suspension in the event of default on payments. Market rules can provide for dispute resolution procedures on quantities, grades and prices.

**Information technology for rural centric growth:** Information technology can make a big impact in creating vertical coordination in the Indian food chain. Updated knowledge about weather forecast, crop husbandry, post harvest technology, commercial information, market information and government schemes and policies in agriculture and agribusiness can be made easily accessible to rural masses through the information technology development at rural places. The Maharashtra Chamber of Commerce, Industries and Agriculture has proposed setting up of Gramin Information Centres (GIC) at Taluka level and attached to MCCIA HUB for providing the latest information on technology and market access, which
will enable farmers to plan their activities on commercial lines for realizing the maximum value for their produce.

1.3.3. Strategic models in agriculture marketing

The Indian agriculture sector has today quite a few examples of integration, both forward and backward. Vertical coordination and contract farming are two of the most dominant forms of backward integration in the agriculture sector worldwide. Indian agriculture faces a recurring problem of uncertainty in production quantity and quality. Vertical coordination is an important method by which uncertainties in agriculture production and supply can be reduced to a considerable extent and efficiency of the agriculture supply chain can be increased (Vaswani et al, 2003). The various forms of vertical coordination as practised by different supply chains are

a. Market procurement contract: In this contract, there is an agreement between the buyer of agriculture produce to buy a specified type of produce, of specified quality at a negotiated price from the seller. This price may be predetermined or could be the spot market price at the time of harvest depending upon the terms and conditions of the contract. The farmer retains all control over the production practices and thus bears the entire production risk. The price risk however is borne by both the buyer as well as the seller. Most contracts currently in the agrarian sector are in the nature of market contracts (Vivek et al, 2005).

b. Partial production contracts: In production contracts, the buyer of the produce specifies and monitors the production process, provides inputs and extension services and in turn buys all or a part of the quantity produced at a predetermined price. And often the negotiated price is lower than the market price since inputs and extension services re provided(Vivek et al, 2005).

c. Total resource contracts: This is the type of contract in which the buyer has the highest level of control over the production process. The firm provides an outlet for the produce, supervises the production process by providing inputs, extension services and information
services to the farmers. The farmers in this contract have a fixed payoff as they are paid only a management fee for the quantity produced (Vivek et al, 2005). The entire yield and price risk is borne by the buyer and thus the ownership is also with the buyer in this contract. This kind of contract is common in the poultry sector in the country.

**Vertical coordination in the food chain:**

The dimension of commoditisation to commercialization cycle will call for tight coordination of links between production, processing and marketing to accomodate manufacture of products based on consumer driven demand. Vertical coordination will shift part of the marketing effort towards the discovery of consumer preferences rather than the manipulation of the same by the retailers. Balancing demand expansion with production increases implies the integration of demand side research and production side research (Palanivel, 1995).
IT based view of coordination in food and agribusiness sector (Streeter, 1991)

This model of Streeter has not been able to answer why the traditional approach to supply is not adequate in adapting to accommodate changing consumer and processor demands.

Peterson (1997) conceptualized coordination as a continuum running from open markets to complete vertical integration (multiple market stages under single ownership). Although this idea of a continuum is intuitively appealing, most of the prior theoretical work has focused on the two ends of the continuum i.e., spot markets and vertical integration, while the middle of the continuum has been largely unexplored.
**Strategic options for vertical coordination – vertical coordination continuum (Peterson, 1997)**

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<th>Strategic Alliances</th>
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<td>External control via price and generic standards</td>
<td>External control via specification and legal appeal</td>
<td>Mutual Control</td>
<td>Internal control via decentralize</td>
<td>Internal control via centralized decision structure</td>
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The five major categories of coordination are suggested from spot markets to vertical integration. The continuum suggests that as strategies are considered from left to right, coordination moves from being dominated by invisible hand characteristics (self interest) through a changing mix of invisible hand/managed characteristics to being dominated by managed characteristics (mutual interest). In between the continuum is **contracting** - the legally enforceable establishment of specific and detailed conditions of exchange; **strategic alliance** - as an exchange relationship in which the firms involved share risks and benefits emanating from mutually identified objectives and **formal cooperation** through a formal organization that has an identity distinct from the exchange actors and that is designed to be their joint agent in the conduct of a cooperative exchange. The agricultural cooperatives lie at this point on the continuum.
The vertical integration in this version of the continuum is a mechanism that relies upon centralized control to achieve coordination. It can be observed that coordinating mechanisms move from completely external in form(spot markets) to completely internal in form(vertical integration) while passing through several transitional stages of mixed form(contracts, strategic alliances and formal cooperation).

Rehber(1998) observed that in agriculture four types of vertical coordination between farmers and off farm businesses re generally recognized, viz., coordination without any contract(spot market or open market), contract farming, ownership integration and farmer cooperatives.

**Spot market** : The traditional commodity markets(spot or open) generally trade in homogenous product that meets standardized minimum quality factors for delivery to a specific location on a specific date. These markets do not transfer enough information between the producers, processor and end user to ensure that the agricultural produce contents are matched to end use applications. The basic argument put forth by the proponents of open markets is that industrialization of agriculture is not inevitable nor is it inherently more efficient than one based upon the independent producers and a decentralized market system(Coffey, 1999). If the independent producer does not have access to a competitive market price, nor a method to manage his price risk, he will be forced into a contractual relationship. The neglect of the market system forces agriculture to contracts and integration leading to pricing inefficiencies and it must be ensured that prices are being determined on a competitive basis and markets are not being manipulated(Abhirup Sarkar, 1997).

**Vertical coordination** : Here market failure is identified as a possible reason for the inability of the market pricing system to accommodate the consumer driven demands for more detailed and homogenous product specifications. In this context, the different vertical organizational mechanisms which can coordinate the transformation of commodities to differentiated products have been classified into two areas vertical coordination and vertical integration. Vertical coordination is a more comprehensive term and includes all means of vertically harmonising exchange between two successive stages in a market channel, eg.,
between growers and processors or manufacturers. It is more flexible and allows firms to obtain inputs with specific characteristics without getting into another business (farming) where large investments in specific assets are required. Vertical coordination reduces uncertainty for the farmer and provides a more stable income while allowing him to maintain ownership of his business.

Amongst various types of vertical coordination, contract farming is becoming a important part of agribusiness and a preferred means of backward integration by the firms needing reliable supply and quality of agricultural raw material. Schrader (1986) describes contracting as a means “to coordinate successive stages in a commodity system. It includes wide variety of arrangements spanning a continuum between open production (produce and then sell) and integration. It includes all arrangements between pure market coordination and intrafirm-administered coordination of two or more stages of production”.


A contract farming framework (Eaton, 2001)

The intensity of the contractual agreement varies according to the depth and complexity of the provisions in the following areas:

**Preconditions**
- Market
- Environment
  - physical
  - social
- Land tenure
- Financing
- Infrastructure
- Materials

**Communications**

**Project Components**
- Crop schedules
- Pricing policies
- Extension services
- Contract formats
- Farmer selection
- Field selection
- Technical inputs
- Farmer advances
- Research & Trials
- Staff/farmer training
- Farmer forums

**Government support**
- Political stability
- General legislation
- Industry regulation
- Public utilities
- Community services
- Quarantine controls
- Plant pathology
- Environment
- Land tenure

**THE PROJECT**
- Production performance

**Monitoring**

**Feedback to farmers and sponsors**
- Price adjustments and contract amendments, Innovations and Adaptations, Quota allocation and distribution
**Market provision**: The grower and buyer agree to terms and conditions for the future sale and purchase of a crop or livestock product.

**Resource provision**: In conjunction with the marketing arrangements the buyer agrees to supply selected inputs, including on occasions land preparation and technical advice.

**Management specifications**: The grower agrees to follow recommended production methods, input regimes and cultivation and harvesting specifications.

Drescher (2000) identified three main dimensions that characterize the core elements of contractual relationships: authority, duration and investment.

**Vertical integration**: Here each individual farm loses its identity and becomes a company owned farm (Rehber, 1998). Aust (1997) observed that the key to vertical integration is asset ownership. It is assumed that the transaction costs are reduced by internalizing production and processing assets. Peterson (1997) observed that vertical integration is a mechanism that relies upon centralized control to achieve coordination.

The growing phenomena of globalisation and its gradual liberalization has triggered the process of vertical coordination in Indian agriculture. Resultantly, different steps in production, processing and marketing will become interdependent and farmer will also become a part of the large food production system in due course. A review of past and ongoing initiatives in vertical coordination seem to be moving in three streams- evolution of commodity and location specific linkages between producers and agroindustry under the umbrella of contract farming, evolution of supply chain models integrating technological advancements and promotion and regulation of these mechanisms (Ray, 2005). Three core processes are critical in establishing effective agriculture market linkages which include building effective backward linkages, conduct and performance of markets and marketing institutions and demand generation through value addition.

An efficient backward integration of industry with agriculture should lead to globally competitive production system in terms of cost and quality. The key concerns relating to the process of backward integration are regarding impact of vertical coordination on producers,
comparing the returns to farmers from the fully coordinated sector vs. less coordinated sector and the control in the vertically linked production system (White, 1999). With the exception of cooperatives and farmers managed informal organizations, the impact of vertical coordination seems limited. A supply chain increases the interdependence among the various stages in the food chain by using strategic alliances, networks and other governance structures to improve logistics, product flow and information flow. The time tested vertical coordination mechanism of cooperatives made much headway, the key elements of success due to strong relationship and trust with their membership, which has been built over the years through effective marketing support, services support and transparency in the exchange process.

In the case of the conduct of markets and the marketing institutions, the relative strength of the spot vs vertically coordinated markets and the conduct of marketing institutions engaged in transfer of agriculture produce from the farmer to the consumer (Vivek et al, 2005). The government needs to examine its policies and regulations with a view to strengthen the marketing network and ensure that prices are being determined on a competitive basis and markets are not being manipulated. The contract and spot markets must be allowed to co-exist and one should not expand at the cost of the other. The issue of conduct of marketing institutions can be tackled partly through regulation and partly through promoting and supporting institutions and organizations which are working to protect the interests of small farmers (Vaswani et al, 2003). The challenge lies in ensuring fair prices for producers to improve their capacity to make further investments in agriculture.

The critical process in building effective agriculture market linkage is the process of demand generation through value addition. The opportunities for value addition in agriculture exists both at the level of agricultural raw materials and/or through marketing. Marketing practices should be tailored to overall forms of value addition including packaging of commodities for the purpose of branding, primary processing and manufacturing highly differentiated products. Attempts can be made to tap even unarticulated demand of the consumer, recreate and redefine markets in value addition space through innovative products and marketing practices. Value addition can create far reaching impacts in terms of generating demand.
when the value creation process is based on consumer perspective rather than on market perspective (Ray, 2005). Opportunities have to be explored by segmenting the markets i.e., institutional, household, agroexport, food processing, industrial and feed/fodder.

Vertical coordination means synchronization of the successive stages of production and marketing regarding the quantity, quality and timing of product flows. Methods of vertical coordination include open production or spot market, contract production and vertical integration. In open production, no commitment to sell produce is made before completing production and spot process coordinate the sale across the different stages of production. In contract production, production is done aimed at future delivery, there is more interaction between buyer and seller and delivery schedule, pricing method and product characteristics are negotiated. In vertical integration, a single firm controls two or more successive stages of vertical coordination. In vertically integrated firms, the management decision dictates the transfer of resources across stages (Ray, 2005). Movement along the continuum of vertical coordination from open market production to vertical integration represents the degree to which the control of production has shifted to the contractor or integrator as more functions are transferred from the producer.

Vertical integration may reduce the costs of contracting and spot market trading but may also introduce new types of transaction costs including the costs related to communicating information within a firm. In Indian agriculture, vertical integration is difficult to achieve because of the land ceiling acts which prohibit the corporate acquisition of cultivable land. Hence vertical integration is a more viable option for poultry and dairy in India (Ray, 2005). There are some questions to ponder, which include whether the larger farms will generate new efficiencies in food production and whether the contractual arrangements will insulate the producer from market risks or will it introduce new risks. It is yet to be ascertained whether the new system will provide opportunities for new farmers or the existing small farmers. The system will have to cater to the needs of the small farmers if it has to generate results and hence clustering of small farms will be the viable option.
Farmer cooperatives:

An agricultural cooperative is an organization usually owned and controlled by agricultural producers, which operates for the mutual benefit of its members as producers or patrons (Rehber, 1984). The farmer cooperatives are typically involved in trading, primary processing or marketing usually characterized by little market power and low margins. At the same time cooperatives seem to be well positioned to coordinate product differentiation necessary at the farm level and integrate forward into value added processing activities. Cooperatives are often insufficiently capitalized to make the substantial investments in research and development and in advertising. In addition to the inadequacy of equity capital, other factors related to cooperative ownership, capitalization and governance may limit cooperative vertical expansion. These factors include an inherent aversion to investing in activities that are perceived as risky and limits on the ability of a cooperative board of Directors to supervise and assist management as the organisation’s scope grows vertically. Farmer cooperatives in India have been either fresh marketing cooperatives or assembly cooperatives or bargaining cooperatives or vertically and/or horizontally integrated cooperatives (Vaswani et al, 2003a). Later when cooperatives found that production and marketing of fruits and vegetables need substantial number of inputs and supplies, they started supply of inputs, processing and working together with similar cooperatives in the region in order to overcome common problems. Thus they have reached the stage of horizontally and vertically integrated cooperatives.
1.4. Review of literature

There has been concern in recent years regarding the efficiency of marketing of fruits and vegetables, and that this is leading to high and fluctuating consumer prices and only a small share of the consumer rupee reaching the farmers. Marketing of horticultural crops is complex especially because of perishability, seasonality and bulkiness. Several studies have been conducted on the marketing channels, marketing problems, price spread and the producer’s share of the consumer rupee in perishable items like fruits and vegetables.

Gandhi and Namboodiri (2004) conducted a study to examine different aspects of fruit and vegetable marketing, focusing particularly, on the wholesale markets for fruits and vegetables which have been established to overcome deficiencies and improve the marketing efficiency. Results indicate that in Ahmedabad the direct contact between commission agents and farmers is very low. For vegetables this is 50 percent and for fruits only 31 percent. Further, in the system of transaction, secret bidding and simple transaction dominate and open auction is relatively rare. In Chennai, the wholesalers act as commission agents and receive consignments directly from producing centres through agents or producers. By and large the system of transaction remains traditional and open auction is rarely seen. This is one major reason for poor efficiency. However, in the small markets in Chennai, the farmers sell directly to consumers. The share of farmers in the consumer rupee in Ahmedabad was 41.1 to 69.3 percent for vegetables and 25.5 to 53.2 percent for fruits. In Chennai, the farmers’ share was 40.4 to 61.4 percent for vegetables and, 40.7 to 67.6 percent for fruits. In the small market in Chennai, where the farmers sell directly to the consumers, the share of farmers was as high as 85 to 95.4 percent for vegetables. This indicates that if there are few or no middlemen, the farmers’ share could be much higher. In the Kolkata market the share of farmers ranged from 45.9 to 60.94 percent for vegetables and 55.8 to 82.3 percent for fruits. Thus, the shares are frequently very low, but somewhat better in Chennai, lower in Kolkata and even lower in Ahmedabad. The margin as a percentage of farmer-consumer price difference (an efficiency measure) shows that in Ahmedabad, the margins are very high and range from 69 to 94 percent. In Chennai they range from 15 to 69 percent, and in Kolkata
they range from 46 to 73 percent. The high percentage of margin to farmer-consumer price difference is indicative of large inefficiencies and relatively poor marketing efficiency.

Gandhi and Namboodiri(2004) have stressed on the need to improve the marketing of fruits and vegetables and suggested various measures. One important measure would be to bring more markets under regulation and supervision of a well-represented market committee. Another measure would be the promotion and perhaps enforcement of open auctions in the markets. Yet another measure could be efforts to bring more buyers and sellers into the markets, bringing them closer to perfect markets. The direct participation of farmers should be increased. Market infrastructure should be improved through storage (go-down) facilities, cold storages, loading and weighing facilities. Improvement in the road network, and cold-chain facilities are also of substantial importance. Greater transparency of the operations through supervision and systems can also help substantially. The market integration and efficiency can also be improved by making up-to-date market information available to all participants through various means, including a good market information systems, internet and good telecommunications facilities at the markets.

In a study conducted by ASCI(2003) in north eastern states, on the rural marketing system, it was found that, farmers were at the mercy of the middle men and the innumerable cooperative societies established were found defective due to lack of marketable surplus and price manipulation by private traders. The study portrayed agricultural marketing as a complex phenomenon. The main factor governing the market operations are the involvement of a number of trade channels in the procurement of agricultural produce and the attitude of distress selling by the farmers. The problems pertain to organizational, functional and physical infrastructure aspects. Lack of market information system was also identified as a major constraint. The farmers were also found to be pleased with disposing off their produce to traders or agents. Transit loss was also very high in fruits and vegetables.

Chole and Thalathi (2003) conducted a study in marketability of brinjal and found that marketed surplus is less than the marketable surplus in food grains, because of hoarding a part of the commodity in anticipation of rising price. Contrary to this, no difference between
marketable surplus and marketed surplus of vegetables was observed in the present study. This was attributed mainly to the highly perishable nature of vegetables, lack of appropriate storage facilities and wide price fluctuations in the market. The disposal pattern revealed that the marketed surplus decreased with increase in farm size. Following marketing channels were identified in the study area in marketing of brinjal:

(i) Producer—Retailer—Consumer.
(ii) Producer—Wholesaler—Retailer—Consumer.
(iii) Producer—Commission agent—Wholesaler—Retailer—Consumer.

The channel II was the important channel in sale of brinjal for the farmers in the study area because major portion of the produce was marketed through this channel. The marketing cost incurred by commission agents was comparatively lower than those incurred by wholesalers and retailers. It was due to non-performance of grading, packing and transportation functions by commission agents. In case of brinjal following three channels were patronized by the vegetable growers for marketing of their produce:

(i) Producer-Retailer-Consumer
(ii) Producer-Wholesaler-Retailer-Consumer
(iii) Producer-Commission agent—Wholesaler-Retailer-Consumer.

The channel II was most favoured channel in the study area as maximum (nearly 50%) quantity was passed through this channel. The producer’s share in consumer’s rupee was maximum in channel I (68.28%), followed by channel II (57.94%) and channel III (53.14%). The share of retailer in consumer’s price was 21.04 per cent in channel I, 24.37 per cent in channel II and 25.83 per cent in channel III. The share of wholesaler in consumer’s price was 5.12 per cent in channel II and 5.06 per cent in channel III. The net share of commission agent was 6.17 per cent in consumer’s rupee in channel III. The total marketing cost was maximum in channel III (46.86%) and minimum in channel I (30.72%). It was also revealed that the marketing efficiency was higher in Channel-I (2.25) followed by Channel-II (1.37) and Channel-III (1.13).
A study on the potato market in West Bengal by Saha and Mukhopadhyay (2003) revealed that wholesale price, harvest price and marketing margin have unidirectional inter-year fluctuation. The fluctuation in marketing margin is more associated with that in the wholesale price. Such an association implies the greater control of the wholesalers in the determination of marketing margin which seems to be consistent with the advantageous and monopolistics assumed by the wholesalers both at buying and at selling ends. The proportion of harvest price to wholesale price before and after elimination of trend component inherent therein is also fluctuating over the years under consideration. Such a behaviour of this variable is very much transparently—indicative of the existence of imperfection in the potato market in West Bengal.

The existence of imperfectly competitive condition in the potato market in West Bengal, thus observed restricts one to expect remunerative price for the potato growers and also such an allocation of farm resources specially land towards potato cultivation which would take place in an alternative condition that is perfectly competitive. So there emerges the necessity to implement such market reformatory policies which will enhance the extent of competition and thereby develop fair as well as efficient pricing process or market mechanism. In view of the major cost on labour, there is immediate need to develop the labour saving practices such as use of weedicides, improved tools for planting, harvesting, etc. Appropriate extension method may be adopted to evaluate the farmers on optimum use of inputs. Though the farmers are producing adequate quantity of onion to meet the consumer demand, they are facing problems in marketing of their produce. On the other hand, market intermediarties are accruing higher margin by incurring less cost and services. Therefore, in order to regulate the expenditure on commission, transportation and packing, efforts should be made to develop the necessary infrastructure for the marketing of onion in the state. Alternatively, it is suggested to develop the farmer’s market for vegetables in general and onion in particular.

Shapoo and Banerjee (2003) conducted a study on the marketing channels in apple which are the routes through which agricultural as well as horticultural products move from producers to consumers. The length of the channel varies from commodity to commodity, depending on
the quality to be moved, the form of consumer demand and degree of regional specialization in production. The following are the prominent apple marketing channels patronised by growers in Anantnag district.

(a) Producer-Forwarding agent-Commission agent-Wholesaler-Retailer-Consumer.
(b) Producer-Pre-harvest Contractor-Commission agent-Wholesaler-Retailer-Consumer.
(c) Producer-Commission agent-Wholesalers at points of assembling-Retailer-Consumer.
(d) Producer-Processing unit-Retailer-Consumer.

Price spread and marketing margin of Apples during 2001-02 was studied. It was found that the producer, on an average, receives Rs. 175.00 per box containing 18 kg apple, i.e., Rs. 9.72/kg at local market. It is observed that apple grower fetches Rs. 32.04 per box or Rs. 1.78 per kg as his net margin. The maximum marketing cost is incurred by the Jammu wholesaler which is associated with higher transportation cost. It is further observed that maximum profit is reaped by retailer (if loss incurred by retailer is not considered) which may vary on the extent of damaged fruit. It is further noted that the amount of profit fetched by different intermediaries increases with the movement of produce from Anantnag wholesale market to ultimate consumer. Thus, it may be concluded that the level of profit is associated with the level of investment. It is observed that the maximum share of consumer’s rupee is taken away by the traders including grower as their profit or risk premium as apple requires higher investment starting from production till it reaches the ultimate consumer. Out of total marketing margin amounting to Rs. 450.79 per box, about Rs. 204.00 is taken away by the traders accounting for 45.27 per cent as their profit. Next important item of margin is noted to be the spoilage, in spite of care taken to minimise the damage of the fruits, about 22.49 per cent of the margin is lost in the form of damage and improper grading as opined by the retailers who have to incur this loss. It is also observed that Rs. 39.50, i.e., 8.76 per cent is required for packing a box of apple containing 18 kgs. Transport is an important function in the process of marketing as it has to travel a long distance, i.e., from village of Anantnag district of Jammu and Kashmir to retail market at Kanchrapara of North 24 Pargana district, West Bengal. It is observed that about 11 per cent, i.e., Rs. 50.50 of retail price is required as freight charges. Considering the distance covered, this expense may be treated as nominal.
As the apple passes through a number of States to reach the ultimate consumer, an amount of Rs. 17.50 per box is to be paid in the form of octroi, State tax and market fees. The difference between retail price and price received by the growers indicates the inefficiency of the marketing system of apple. The difference is mainly due to higher profit earned. The study clearly reveals that with the increase in number of middlemen and distance travelled, the commodity becomes dearer to the consumers. Moreover, the profit reaped by different intermediaries clearly depend on the level of investment. Higher profit earned by traders makes the fruit dearer. Steps should be initiated to regularise the market operations. Apple should be marketed after proper grading and standardising to protect consumers and retailers.

Balappa and Hugar (2003) conducted an economic analysis of the marketing of onion in Karnataka. Though there is great potential for the state of Karnataka in the cultivation of onion crop, farmers often incur losses due to low prices, lack of market outlet and other infrastructure in the marketing system. The various components of marketing like marketing channels adopted, producers share in consumer rupee, price spread etc were comprehensively analysed. Four important marketing channels were identified.

I Producer-seller - Village merchant - Wholesaler - Retailer - Consumer
II Producer-seller-Commission agent-Wholesaler - Retailer - Consumer
III Producer-seller - Commission agent-cum-Wholesaler - Retailer - Consumer
IV Producer-seller - Consumer

Marketing channel IV was not popular among onion growers as only 2 to 5 per cents of them marketed their produce through this channel. It has been observed that the price spread varied not only between the markets but also between the different channels of marketing for the same vegetable and within the different vegetables themselves.

The average marketing cost incurred by the producer-seller in onion was studied. Out of the total marketing cost incurred by the product-seller, the commission charge (35.95%) accounted for major component followed by expenditure on transportation (32.04%) and cost of packing (17.35%). These three components alone accounted for about 85.34 per cent of
the total marketing cost incurred by the farmers. An appraisal of components of marketing costs clearly revealed that commission charge formed the most significant constituent of the total marketing cost incurred by the farmers. The village merchants with higher marketing cost incurred, realised lower margins out of the total marketing margin. The village merchant plays a very important role in moving the produce from village to the market particularly smaller lots of produce by the farmers. However, the net margins accrued to the village merchants was considerably lower than that of other intermediaries even though the proportion of cost incurred was higher. Further, the producer’s share in consumer’s rupee realized both in onion in channel-I was almost equal to that of channel-II. In channel-I, even though an additional intermediary of village merchant was involved in the chain of marketing system, the producer’s share in consumer’s rupee has not changed indicating the favourable role of village merchants in the marketing of vegetables. Therefore, considering the role of village merchants especially in handling small lots of small and marginal vegetable growers, it is important to encourage the village merchants in linking production centres with the wholesale markets of vegetables. It is worth noting that the percentage of margins realized by the different market intermediaries was higher than their cost incurred in the marketing of onion. Among the market intermediaries, the share of the retailers in the marketing margin was higher than other intermediaries. This may be attributed to the fact that retailers often incurred losses due to wastage in handling, spoilage with passage of time, price fluctuations, etc. resulting in higher cost of marketing and risk in handling. Similar results were reported by Shiyani et al. (1988) and Jairath (1997).
1.5. Objectives

This study attempts to analyse the existing frameworks of agriculture-market integration and in turn to evolve generic frameworks which may prove relevant and responsive in the agriculture product marketing system to integrate the farmer, trade, agroindustry and the consumer. This study will try to reveal the overall situation in the marketing of perishable agriculture commodities with special emphasis on fruit and vegetables and to identify probable options for improving the marketing system.

- To trace the evolution of attempts aimed at organizing the primary producers for better price realization in the country.
- To analyze the prevailing marketing systems for perishable agriculture commodities in the state of Kerala.
- To assess the impact of farmer organizations in improving and sustaining the income status of farmers in the sector.
- To define the organizational structure and strategies for improving rural markets.
- Assessing the marketing efficiency of fruit and vegetable farmer markets in terms of reduction in marketing expenses involved in the trade.
- Assessing the marketing efficiency of fruit and vegetable farmer markets in percentage terms of overall income enhancement from fruit and vegetable marketing.
- Defining the major factors influencing traders in establishing trade linkages with F & V farmer markets.
- Identifying the social factors influencing the farming community after the advent of farmer markets.
1.6. Hypotheses

The marketing sector of perishable agriculture commodities is a highly unorganized sector. There exists no definite system for trading of perishable commodities. The strategies evolved as the outcome of the study may not be general. The study was conducted based on the following assumptions.

- Price realization for the perishable agriculture commodities is having a direct correlation with the unorganized nature of the farmers in the sector.
- Participatory decision-making improves the efficiency and transparency of the rural markets.
- Hesitancy expected from the part of fruit and vegetable traders in associating with farmer markets.
- Success rate of marketing systems in perishable agriculture commodities has a direct correlation with the transparency in the management systems.
1.7. Research methodology

1.7.1. Sampling concepts:

Sampling technique is generally employed to study an entire population (every individual in a country, all college students, every geographic area, etc.), so as to acquire a section of the population to perform an experiment or observational study. It is important that the group selected be representative of the population, and not biased in a systematic manner. For this reason, randomization is typically employed to achieve an unbiased sample. The most common sampling designs are *simple random sampling*, *stratified random sampling*, and *multistage random sampling*.

**Simple random sampling** is the basic sampling technique where we select a group of subjects (a sample) for study from a larger group (a population). Each individual is chosen entirely by chance and each member of the population has an equal chance of being included in the sample. Every possible sample of a given size has the same chance of selection.

**Stratified Random Sampling**: There may often be factors which divide up the population into sub-populations (groups / strata) and we may expect the measurement of interest to vary among the different sub-populations. This has to be accounted for when we select a sample from the population in order that we obtain a sample that is representative of the population. This is achieved by *stratified sampling*.

A stratified sample is obtained by taking samples from each stratum or sub-group of a population. When we sample a population with several strata, we generally require that the proportion of each stratum in the sample should be the same as in the population.

In stratified sampling the population of $N$ units is first divided into non-overlapping subpopulations called *strata*. If sampling from the strata is simple random sampling then whole procedure is called stratified random sampling. Stratification is a common technique:


**Multistage Random Sampling:** A multistage random sample is constructed by taking a series of simple random samples in stages. This type of sampling is often more practical than simple random sampling for studies requiring "on location" analysis, such as door-to-door surveys[^11].

### 1.7.2. Population:

The population to be surveyed included fruit and vegetable farmers of the state of Kerala. Around 85000 farmers undertake fruit and vegetable cultivation on a commercial scale. This population includes farmers undertaking cultivation of banana and vegetables which include cool season vegetables also.

### 1.7.3. Sampling procedure

Sampling is usually done to acquire a section of the population to perform an experiment or observational study. It is important that the group selected be representative of the population, and not biased in a systematic manner. There may often be factors which divide up the population into sub-populations (groups / strata) and we may expect the measurement of interest to vary among the different sub-populations. This has to be accounted for when we select a sample from the population in order that we obtain a sample that is representative of the population. This is achieved by *stratified sampling*. A stratified sample is obtained by taking samples from each stratum or sub-group of a population.

The study is descriptive and analytical in nature. It uses primarily the survey method for data collection. In order to draw on the experience of other organizations like the milk producers and fishermen’s cooperatives who are also dealing in perishable goods, focus group discussions with the staff were employed and their periodic reports consulted. A detailed structured questionnaire was used for the survey. In order to make an assessment of the impact of organizing the farmers of vegetables and fruits for better price realization, a before-after method was employed.

[^11]: Hallucinated citation
The universe of the study included around 85000 farmers undertaking cultivation of banana and vegetables throughout the state. Based on information obtained from the Management Information System of the Vegetable and Fruit Promotion Council Keralam, five districts were identified where there is high density of farmers engaged in fruit and vegetable cultivation. Density was also used as the criterion to select the farmer markets. Simple random sampling was then employed to identify the respondents.

The major organizational setup in marketing of perishables in the state was the farmer marketing centres under the Vegetable and Fruit Promotion Council Keralam. The farmers in the selected markets were surveyed using structured / close ended questionnaires. There are 200 farmer-marketing societies in the state as a whole of which 85 are located in the five study districts. From these 85 societies, a representative sample of 23 societies were surveyed, which is more than the originally targeted 10 percent of the total number of societies existing in the state. Information was collected through group interviews of not more than five members of the executive committee of the 23 societies in each case with the help of the structured questionnaire. This added to the accuracy of the data. Each marketing society surveyed represents the feedback from representatives of 150-200 farmers.

Data were grouped into tables and were analyzed with the help of simple pie charts and bar charts using excel. Price spread was also calculated by using percentage analysis.
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**Sample size:**

The major organizational setup in marketing of perishables in the state was the farmer marketing centres under the Vegetable and Fruit Promotion Council Keralam. Hence a stratified sample of these centres was taken concentrating in the districts of Trivandrum, Kottayam, Thrissur, Palakkad and Idukki and the farmers in the area were surveyed. Out of the total of 200 farmer marketing societies, a representative sample of 23 were surveyed. Each marketing society surveyed covers the feedback from 150-200 farmers adding to the authenticity and accuracy of the information. The districts were identified on the following basis – Fruit and vegetable growing areas in Trivandrum, Vegetable predominance in Kottayam and Idukki and fruit predominance in Thrissur, Palakkad and Idukki. The farmer coverage came to around 4600 farmers in 23 farmer samithis.
The study was conducted among the fruit and vegetable growers to analyse the problems they face in marketing, the expenses they incur, the prices they realize and the marketing channels they depend on. A general study on the market situation was followed by specific study on the farmer organizations operating in the area with an understanding on the impact they could create on the perishable agriculture sector in the area. The different marketing setup prevalent in the area was studied and their efficiencies were compared. An analysis on the price spread of major fruits and vegetables was also conducted.

Apart from this focus group discussions were conducted for testing and collecting the feedback of various concepts and strategies developed by related organizations that could be adopted.

NOTES

1 The producers sell their produce directly to the consumers or to small rural retailers. The goods traded are generally of inferior quality and the volumes are low. These markets are largely unregulated and are generally held once in a week. The Government controls the auctions and a market tax or fee is collected from each participant for basic infrastructure which is but highly inadequate.

2 In this system, some traders/transporters establish collection centres in a production area, where farmers bring their produce, which is transported, in truckloads to a city market. The infrastructure available in these markets is generally poor and suffers from the same handicaps as do primary markets.

3 The primary wholesale markets are located in important towns near the centres of production. The producer-farmers bring the major part of the produce for sale all by themselves in these markets. The secondary wholesale markets are generally located in district headquarters or important trade centres. The bulk of the arrivals in these markets are from other markets. Major transactions take place between village level commission agents and wholesalers. In the terminal markets, the produce is either finally disposed of to consumers or processors or is assembled for dispatch to distant markets and also for exports.
Although regulation of the markets has improved their functioning and has helped in reducing the multiple trade charges and levies on the producer-seller, verification of accurate weights and scales, establishment of market committees in which the agricultural producer is given due representation, judicious utilization of market funds, fair settlement of disputes, arrangements for better storage facilities and market intelligence etc. the existing machinery has failed to check trading malpractices and has made the agricultural marketing system highly restrictive and inefficient.

Direct marketing pre-supposes prior knowledge of the buyers’ needs among the farmers. It also enables transactions through purchase orders for long-term deliveries and payments. This commercialization of agriculture based on modern business principles is a very healthy sign.

Forward contract is an agreement between two parties to buy and sell a commodity at a pre-determined price on a future date. Future markets can help in stabilizing prices in times of good and poor harvests.

In the traditional neoclassical theory coordination through spot markets can take care of the individual objectives of many consumers, direct many valuable and limited resources to production and motivate to produce the right products. But this is based on the assumption that producers know the prices and production technology, consumers know the prices and the preferences and also that the prices adjust to equate the supply and demand for each good and everyone maximizes their utility which is not true. Transaction cost economics(TCE) analysis suggests that the main purpose and effect of contracts and vertical integration is to reduce transaction costs. Transaction costs associated with the spot market coordination include the buyers cost of searching for the suppliers offering preferred quality features at favourable prices and the sellers costs of determining prices and buyer preferences. The buyers and sellers can reduce some of these costs by entering into a contract agreement before production is completed, but still they may incur costs in contracting and in enforcing agreements.
An assembly cooperative might just bring the produce of its members together from farm gate to its warehouse. A fresh marketing cooperative goes beyond the assembly function, physically processes the raw product for the market and does the marketing functions. Bargaining cooperatives bargain for the terms of trade with the first handlers of the produce.

Stratified sampling techniques are generally used when the population is heterogeneous, or dissimilar, where certain homogeneous, or similar, sub-populations can be isolated (strata). Simple random sampling is most appropriate when the entire population from which the sample is taken is homogeneous. Some reasons for using stratified sampling over simple random sampling are: a) cost per observation in the survey may be reduced; b) estimates of population parameters may be wanted for each sub-population; c) accuracy at given cost.

If data of known precision is wanted for certain subdivisions of the population, then each subdivision or strata can be treated as a population. Administrative convenience may dictate its use, so that each field office can supervise one strata. Sampling problems may differ markedly within a population (eg people in prisons and people outside). Stratification will almost certainly produce a gain in precision in the estimates of the whole population, because a heterogeneous population is split into fairly homogeneous strata.

In a multistage random sample, a large area, such as a country, is first divided into smaller regions (such as states), and a random sample of these regions is collected. In the second stage, a random sample of smaller areas (such as counties) is taken from within each of the regions chosen in the first stage. Then, in the third stage, a random sample of even smaller areas (such as neighborhoods) is taken from within each of the areas chosen in the second stage. If these areas are sufficiently small for the purposes of the study, then the researcher might stop at the third stage. If not, he or she may continue to sample from the areas chosen in the third stage, etc., until appropriately small areas have been chosen.