CHAPTER I
INTRODUCTION AND DESIGN OF THE STUDY

1.1 INTRODUCTION

Agriculture is the largest sector in many developing countries. Most of the developing countries have to depend much upon the development of agriculture for their economic development in order to meet the demand for food and agricultural raw-materials, to earn foreign exchange for overhead investment and expansion of industries, to meet the growing demand for employment and to raise cash income of rural people to stimulate industrial expansion. Even in the case of developed countries, the historical experience reveals the importance of agriculture in the process of economic development at the outset of industrial revolution1.

Agriculture has a dominant role in the Indian economy contributing nearly 36.86 per cent of the national income, providing employment to about 70 per cent of the working population and accounting for a sizeable share of the country’s foreign exchange earnings. Agriculture provides the food grains to feed the large population of 100 crores of the country. Besides, it provides fodder for large cattle population; it is also the supplier of raw material to many industries. Thus, the economic structure of India largely rests up on agriculture.2

MARKETING

The comprehensive scope of marketing of a commodity is considered to be one of the important ingredients of production process itself. It is obvious from the fact that the movement of the goods from the point of production to the house of consumer in adequate quantities at a minimum incidental cost and at a reasonable margin of profit to the trader encompasses all the chief characteristics of an efficient marketing system. A developed market is an incentive to the producer to produce more without having any fear of exploitation of market margins by the market managers. Thus, it is an indicator of economic development3.

AGRICULTURAL MARKETING

Agricultural marketing comprises all operations involved in the movement of farm produce from the producer to the ultimate consumer. It includes all those activities which are mostly related to the procurement, grading, storing, transporting and selling of the agricultural produce. It is a way by which the farmers dispose their surplus produce at a fair and reasonable price by which agricultural productivity can be enhanced by incentives and economic conditions of the farmers can be raised⁴.

The term agricultural marketing is composed of two words - agriculture and marketing. Agriculture, in the broadest sense means activities aimed at the use of natural resources for human welfare, and marketing connotes a series of activities involved in moving the goods from the point of production to the point of consumption. The subject of agricultural marketing includes marketing functions, agencies, channels, efficiency and cost, price spread and market integration, producers’ surplus etc. The agricultural marketing system is a link between the farm and the non-farm sectors. In India, Agriculture was practiced formerly on a subsistence basis; the villages were self sufficient, people exchanged their goods and services within the village on a barter basis. With the development of means of transport and storage facilities, agriculture has become commercial in character, the farmer grows those crops that fetch a better price. Marketing of agricultural produce is considered as an integral part of agriculture, since an agriculturist is encouraged to make more investment and to increase production. Thus there is an increasing awareness that it is not enough to produce a crop or animal product; it must be marketed as well.

There are several challenges involved in marketing of agricultural produce. There is limited access to the market information, literacy level among the farmers is low and multiple channels of distribution that eats away the pockets of both farmers and consumers. The government funding of farmers is still at nascent stage and most of the small farmers still depend on the local moneylenders who are leeches and charge high rate of interest. There are too many vultures that eat away the benefits that the farmers are supposed to get. Although we say that technology have improved but it has not gone to

⁴ Rajan Kumar Sahoo and Gyanindra Dash, “Agriculture and Rural Economy”, Regal publications, 2009, p.49
the rural levels as it is confined to urban areas alone. There are several loopholes in the present legislation and there is no organized and regulated marketing system for marketing the agricultural produce. The farmers have to face so many hardships and have to overcome several hurdles to get fair and just price for their sweat.

1.1.1 VEGETABLE PRODUCTION IN INDIA

India’s diverse agro-climatic conditions allow production of a large variety of tropical, sub-tropical and temperate fruits and vegetables. India ranks first in the production of fruits in the world and ranks next only to China in vegetable production. The annual fruit production is around 40 million tonnes accounting for about 10 per cent of the total world production and vegetable production is around 73 million tonnes accounting for about 13 per cent of the world production.

Horticultural crops have been identified as an important nutritive component of our daily diet. Vegetables among protective foods are the rich sources of essential elements besides having medicinal and therapeutic properties and able to provide nutritional security to the predominantly vegetarian country. Due to major shift in food habits of the people towards low fat, low cholesterol foods, vegetables have become an integral part of the balanced diet to all sections of the society.

Number of vegetables grown in the country is quite large, but vegetable crops occupy only 2.5 per cent of the total cultivated land. Observed yield and area under vegetables indicate that the production of vegetable in India is inadequate to meet the needs of the country. So, to meet the present need for vegetable it is necessary to increase the area and yield of vegetables. Vegetable culture being of short duration, generally labour intensive and more number of crops can be taken from unit area in season or year. It is suitable for increasing the income of small farmers and makes more effective use of land and labour resources for agricultural development.

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1.1.2. HISTORY OF ONION

Onion is a famous spice commodity grown all over the world and consumed in various forms. It has been in cultivation for more than 4,000 years. The maximum diversity of Alliums species is found in a belt from the Mediterranean basin to Iran and Afghanistan, i.e. Iran, north Iraq, Afghanistan, Soviet middle-Asia and West Pakistan, indicating the primary centre of origin. The earliest record comes from Egypt where onions appear as carvings on pyramid walls and in tombs from the third and fourth dynasties (2700 BC). It is thought that Romans took the onion from north of the Alps. The onion was among the first cultivated plants taken to the Americas from Europe. Europeans took the species to East Asia during the last century.\(^8\)

1.1.3 ONION PRODUCTION IN THE WORLD

The notable onion growing countries in the world are China, India, U.S.A., Turkey, Japan and Iran. In China, it is cultivated in an area of 451 thousand hectares and its production is about 10,040 thousands Metric Tonnes. India ranks second both in terms of area and production while in U.S.A., the area under onion is below than that of Turkey, Russian Federation, Pakistan and Iran still in terms of production stands third\(^9\).

1.1.4 ONION PRODUCTION IN INDIA

Onion is one of the most important vegetables grown in India which is used either in raw or dehydrated form to add flavour and taste to Indian cuisine. Since onion has medicinal values, it is used in some pharmaceutical preparations also. The diverse agro-climatic conditions enable India to produce onion in one or the other part round the year. For India, onion is a consistent earner of foreign exchange and the export of onion and onion products reach several destinations\(^10\).

Onion, a pungent edible vegetable is one of the oldest cultivated ones. It is considered as a food of exceptional value for flavouring and seasoning. Research has shown that onions contain antioxidants and can reduce blood cholesterol levels. They are low in

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\(^8\) Lawande, K.E., “Research News Letter”, National Research Centre for Onion and Garlic, Pune, 2005, p.2
\(^9\) National Horticultural Research and Development Foundation, Nasik, Annual Report 2005-06. p1
calories and a source of dietary fiber. The world’s major producer of onion is China followed by India, Russia, Pakistan, Indonesia, Turkey, Vietnam, USA, Myanmar, Brazil and Bangladesh. Onion is exported mainly to neighbouring countries like Sri Lanka, Malaysia, Maldives, Nepal, Kuwait, Indonesia, Mauritius, Seychelles, UAE, Singapore, Pakistan, Saudi Arabia and Dubai.

Bellary onion (Allium cepa var. cepa) and multiplier onion (Allium cepa var. aggregatum) are the two major onion groups cultivated in India. Maharashtra accounts for 28 per cent of the country’s production (Bellary onion) followed by Gujarat, Orissa, Uttar Pradesh, Karnataka, Rajasthan, Madhya Pradesh, Bihar, Tamil Nadu, Andhra Pradesh and Haryana. The productivity of onion is also highest in Maharashtra (20.62 tonnes/ha) followed by Gujarat and Haryana.

In India, onion is produced in three major seasons viz., Kharif, late Kharif and Rabi. Kharif season starts at June and harvesting is done in August – September. Late Kharif crop is sown during September and harvested during the month of November. The third season is Rabi season, which starts in the month of December, and the crop is harvested in the month of February\textsuperscript{11}.

1.1.5 ONION PRODUCTION IN TAMILNADU

Tamil Nadu accounts for 5 per cent of onion cultivating area (Small onion and Bellary onion) and contributes 3.74 per cent of production. According to the trade sources nearly 70 per cent of area is occupied by small onion and remaining 30 per cent is by Bellary onion. CO1, CO2, CO3, CO4, CO (On) 5, MDU 1 and Bangalore rose are important small onion varieties raised by farmers. Perambalur district occupies 24 per cent of the area under onion in Tamil Nadu and the other districts cultivating onion are Trichirapalli, Dindigul, Namakkal, Coimbatore, Erode, VirudhuNagar, Tirunelveli, Thoothukudi, and Salem\textsuperscript{12}.

1.1.6 ONION PRODUCTION IN ERODE DISTRICT

Erode District lies on the extreme north of Tamil Nadu. Erode District situated at between 10 36” and 11 58” North Latitude and between 76 49” and 77 58” East Longitude. The district in general is characterised with a scandy rainfall and a dry climate. Maximum

\textsuperscript{12} ibid
rainfall is recorded in Gobichettipalayam and Bhavani taluks. As per revenue land records, the total geographical area of the district is 8,16,191 hectares. Of those, 3,09,252 hectares have been brought under cultivation as net area sown. This accounts for 37.8% of the total area of the district. Area sown more than once is 47,255 hectares i.e. 4% of the total net area sown. Total cropped area is 3,56,507 hectares i.e. 43.6% of the total area sown in the district\textsuperscript{13}.

Erode is a major horticulture belt in the State. Almost all the fruits, vegetables, spices, flowers and plantation varieties are grown here. Tapioca is the main vegetable cultivated in 3,938 hectares, followed by small onion in 2,026 hectares, which occupied 4\textsuperscript{th} place in cropped area and 2\textsuperscript{nd} place in productivity next to Coimbatore District\textsuperscript{14}.

1.2 STATEMENT OF THE PROBLEM

Agricultural marketing involves in its simplest form the buying and selling of agricultural produce. This definition of agricultural marketing may be accepted in olden days, when the village economy was more or less self-sufficient, when the marketing of agricultural produce presented no difficulty, as the farmer sold his produce directly to the consumer on a cash or barter basis. But, in modern times, marketing of agricultural produce is different from that of olden days. In modern marketing, agricultural produce has to undergo a series of transfers or exchanges from one hand to another before it finally reaches the consumer.

The production of agricultural produce cannot be adjusted to the changing prices or demand as in the case of industrial products. Once a crop is raised, the farmer has to allow the crop to grow and harvest it, irrespective of changes in price levels. Even if there is a fall in prices, the farm producer cannot think of stopping the growth of the crop in the middle. Such an attempt would also result in loss. Since the farm producer is not able to adjust production to the changing demand, he has no control over prices. Therefore, very often, the farm producer is not able to get a remunerative price for his products. Further, it is very difficult to have a common understanding among a large number of farm producers in controlling the level of production and in that way, to control supply and

\textsuperscript{13} Industrial potential survey and Horticulture report of Erode District, 2006
\textsuperscript{14} The Hindu, “Agro-processing can give a thrust to Erode’s growth”, Dated April, 01, 2009.
prices. In view of the special characteristics of agricultural products, marketing of agricultural produce is really a complex problem. In spite of the phenomenal improvements in different aspects of marketing, the rural poor still face certain problems in both production and selling of their products.

These days farming has not remained specialized because of more risk and uncertainty in the output as well as in prices. Farmers have diverted their efforts towards growing vegetables rather than any other crops. It fetches them continuous flow of income either throughout the year or at least in the season. Income so received depends upon, how the marketing of the vegetables is undertaken by the producers.

Production of onion is an important business to various producers and this is an important crop which helps to increase the economic condition of the farmers. Onion is a seasonal dependence crop. Its productivity is highly associated with the nature. Onion production is an eye irritating like onion itself as its productivity and prices remains not stabilized. Onion producers are facing many problems right from the point of production to the final disposal. If the monsoon and climate are favourable to farmers in production, proper price for the produce is not received because of over supply.

Onion producers are affected by the problems like huge labour cost, non-availability of quality seeds, high transport cost, high commission charges, huge price fluctuations and malpractices by the middlemen. On the other hand, inadequate technical know-how and lack of Government’s nod have increased the problems of production and marketing of onion. Farmers are thus facing a number of hindrances especially in disposal of the produce.

The marketing of onion, unlike in case of cereals, is more complex because of the special characteristics like highly perishable nature, seasonality, bulkiness etc. and needs special care and immediate disposal. In case of perishable commodities, the real problem starts when the producer attempts to dispose the same i.e. marketing the produce. Besides, the huge expenditure of the marketing cost it also affects the income of the cultivators. For successful farming, not only improvement in productivity of different agricultural products is sufficient, but producers’ share in consumer rupee and marketing efficiency of products are also equally important.
Marketing of onion is largely made in the study area through intermediaries. Due to financial urge of the farmers, lack of storage facilities and perishable nature of the crop, middlemen eat away the fruitful profit of the crops by offering low price and grading the products as sub-standard. On the other hand, consumers are always paying high price to the product due to heavy charges imputed by the middle men before it is reaching the final consumer.

Onion is an important exportable produce which conserves maximum foreign exchange to India. Onion is mostly exported to Dubai, Kuwait, Saudi Arabia, West Asia, Malaysia, Singapore, the Seychelles and Bangladesh. Onions grown in India are very much in demand in the Gulf countries, Singapore, Malaysia, Sri Lanka and Bangladesh because of its strong pungency.\(^\text{15}\)

The Government had recently expressed concern over the rising retail onion prices and was toying with the idea of banning exports. Prices of onions in wholesale markets do not come down even on days when the supplies are more. Even if price falls in the wholesale markets it is not passed on to retail customers. But price received by the farmers is still low.

The export of onions has been subject to minimum export price for several years and no shipments are allowed below the minimum export price of the concerned month. The crop prospects, its assessment and forecasts, market intelligence, likely trends within the country and abroad as well as expenses entailed in logistics are factored while fixing the minimum export price. Onion export is facing numerous problems due to its quality norms and government intervention.

As such a large number of problems connected with marketing of onion emerged in the minds of farmers, traders and exporters. In this context, several pertinent questions raised are:

What is the area covered by onion production and productivity in India and world?

What are the quantities and values of onion being exported to other countries?

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\(^{15}\) The Hindu Business Line, “Onion exports likely to go up 2 lakh tonnes by March”, Dated February, 19, 2007.
What are the costs, returns and constraints to producers in production and marketing of onion?
What is the marketable and marketed surplus of onion?
What are the marketing channels in onion marketing and what price do growers receive from them?
What is the producer’s share in consumers’ rupee?
To what extent the onion growers are satisfied with the factors available for cultivation of onion and existing marketing system?

Hence, the present study is an attempt to provide answer to these questions and thereby to bring forth practical solution to the problems in production and marketing of onion in Erode District of Tamil Nadu.

1.3 REVIEW OF LITERATURE

In any study, the review of previous studies are considered as an important factor for getting a better understanding of the problem, methodology followed and to identify the unexplored part of the field of study. In this regard, reviews of some of the studies in the field of present study has been undertaken and are presented under the heads according to the objectives of the study.

1.3.1 TRENDS IN GROWTH OF AREA, PRODUCTION, PRODUCTIVITY AND EXPORT OF ONION

Prem S. Dahiya and K. Srinivas16 (1994) in their study found that there was a considerable improvement in the area, production and yield of onion during the periods from 1978-79 to 1991-92. Export of onion was estimated to 25 to 33 lakhs tonnes. The value of onion exports has gone up from Rs.11.2 crores (1978-79) to Rs.183.2 crores (1991-92) marking 1535.7 per cent increase. Lack of infrastructural development and assured supply of quality products impede the boosting export of onion.

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Praduman Kumar et al\textsuperscript{17} (1998) analysed the export marketing of onion. They found two main harvesting seasons for onions in India. The export of onion is highest among vegetables. NAFED is a canalizing agency for onion exports from India. In the case of onion export, private exporters have to register them with NAFED and to obtain no objection certificate. They concluded that Storage, grading, packing and transport are the main problems in exports.

K.K.Jain and Narinder Kumar\textsuperscript{18} (1999) in their study found that in the case of onion, India shared 17 per cent of its total area in the world, 11 per cent of the total production and 68 per cent in yield. India exported 386 thousand tonnes of onion which has constituted 9.55 per cent of its average production level during triennium ending 1995-96. India shared 12.5 per cent of total quantity of onion exports but received much lower revenue, which was 6.79 per cent of its total export value.

T.R.Shanmugam et al\textsuperscript{19} (2001) analysed about the scope for horticultural export in Tamil Nadu. The study found that Tamil Nadu’s share of onion production is 5.35 per cent of India’s production. The major export of onion is to the countries like Singapore, Sri Lanka, Maldives and Malaysia. Major problems for export marketing are absence of storage facilities, absence of suitable varieties for storage, lack of own transport facilities and high cost of transport.

H.N.Patil and A.C.Karpe (2001) in their study revealed that the volume of export of onions from India has increased from 1,76,800 metric tonnes in pre-globalization period of economy (1978-89) to 3,37,290 metric tonnes per annum in post-globalization period (1990-98). Export of onions to Bangladesh, Malaysia, Singapore, Sri Lanka, and UAE are advantageous to India. In terms of volume and value of export UAE (2,77,278 metric tonnes) and Malaysia (Rs.1170 lakh) are found to be the most potential countries for export of Indian onions. Nominal projection co-efficient (NPC) was used for analyzing the data.

L.B. Hugar\textsuperscript{20} (2002) found that exports of fresh onion from India was Rs.299.94 crores during 1999-2000 and it was predicted that the export during 2004-05 would be Rs.1110.15 crores by using Markov chain approach. It was also found that UAE was the major importer of Indian onion during 1999-2000 followed by Sri Lanka and other countries. He advocated that in order to capture higher share in the world trade, much emphasis needs to be laid on quality improvement of fresh onion apart from cost efficiency in its production, use of standard packing and simplification in exports procedures.

D. Sreenivasa Murthy and K.V. Subrahmanyam\textsuperscript{21} (2003) made a study with the objective to examine the present trend in the production and export of onion. Instability index analysis was used in this regard. From the study it is found that onion production has increased at a compound growth rate of 3.59 per cent per annum while the exports of fresh onion has increased at a compound growth rate of 5.20 per cent per annum indicating higher growth in export of onion.

S. Hymajyothi \textit{et al}\textsuperscript{22} (2003) in their analysis applied Coppock’s instability index and co-efficient of variation to measure the export of onion. In analysis of constraints in export of onion, Kendall’s co-efficient of concordance test was used. They observed that co-efficient of variation for quantity of onion export during 1970-71 to 1999-2000 was 29.86 per cent. It was also observed that lack of demand from importing countries, lack of export promotional measures and lack of infrastructural facilities as the major obstacles which impede the export of onion. They concluded that the growth in volume of export and export earnings unit value realization indicated a positive trend in onion exports.

A.R. Verma\textsuperscript{23} (2003) made an attempt to examine the export marketing of onion from India. Secondary data were used for this study. Compound growth rate was used for area, production and yield of onion. The growth behaviour was analysed with the help of

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using least square method. The study also extended to identify the constraints in onion
export. It was found that more internal demand, high ruling prices, inadequate post
harvest technology, poor packing material and minimum export price were the major
constraints in onion exports.

Malik et al\textsuperscript{24} (2003) conducted a study to examine the trends in area, production
and productivity of onion and the trends in export of onion. The study revealed that India
ranked first in area under onion cultivation in the world with 443.82 thousands hectares.
It was also found that the quantity and value of onion export from India decreased when
compare with other countries due to lack of timely transportation facilities, export barriers,
poor quality of products and absence of scientific storage facilities. The study suggested
to encourage the farmers to cultivate the exportable demanded varieties.

M.M.Hossain and S.N.Mishra\textsuperscript{25} (2003) made a study about export of onion and its
constraints. They found that Kalahandi district of Orrisa had huge exportable surplus
after meeting the domestic requirements. It was also found that inadequacy of quality
seed materials, no bargaining power of the small farmers, absence of farmers’ organizations,
inadequate credit/ price support facilities and lack of export promotional activities were
the major constraints in export marketing of onion.

D.P. Malik et al\textsuperscript{26} (2004) in their study indicated that significant increase was
recorded in area, production and productivity in all countries during the period 1980-2000.
The state-wise analysis reveals that all major onion producing states registered positive
and significant growth in area, production and productivity of onion in India. The quantity
and value of onion export from India decreased at the rate of 2.82 and 5.21 per cent per
annum, respectively. Further, the decline in export of onion to different countries was
observed except Malaysia. The productivity of onion is extremely low in comparison to
the countries like Egypt and China. There is a need to develop high yielding and area

\textsuperscript{24} Malik, D.P., Kumar Sanjay, Luhach, M.S. and Dhanda Sunil, “Status of Production and Export of Onion
in India”, ibid, 2003, pp.161-162

\textsuperscript{25} Hossain, M.M. and Mishra, S.N., “Potentials of Kalahandi District of Orrisa in Exporting of Onion and
its Constraints there of”, ibid, 2003, pp.163-164

\textsuperscript{26} Malik, D.P., Kumar, Sanjay and Hooda, B.K., “An Economic Analysis of Production and Export of
specific varieties. The study suggested that Government should popularize the improved production technology among the cultivators through effective extension system. Marketing, financial, storage and processing facilities need to be strengthened. Cultivators should be encouraged to grow export oriented good quality varieties of onion. Market survey of potential importing countries should be done and export promotion policies should be liberalized.

Pramod Kumar et al\textsuperscript{27} (2006) made an analysis of performance of onion exports from India. The secondary data was used for the period from 1980 to 2004. Markov Model was used for analyzing export potential of Indian onion. It was found from the study that the total exports increased from 1.94 lakh tons in 1980 to 7.60 lakh tons in triennium ending 2004. Malaysia, Sri Lanka, UAE and Bangladesh have emerged as major importing nations of Indian onion in terms of value by the year 2004. The study concluded that there is a need to expand the export market of onions and also look for avenues where higher price realization is possible. There is also a need to have long term and stable policy towards export of onion. The supply of onion for exports could be increased through increased production by way of reduction in post harvest losses. An adequate policy support is needed to take the available technology to the farmers.

S.Nehru et al\textsuperscript{28} (2008) in their study they found that the share of India’s agricultural exports in world agricultural exports has been declining since 1985 from more than 1 per cent due to challenges posed by other developing countries. The value of agricultural exports has increased from Rs.2509.36 crores in 1985-86 to Rs.13269.42 crores in 1994-95 in pre-WTO period. In the post-WTO period, it has increased from Rs.20344 crores to 38066 crores. The study concluded that India should take effective steps towards expanding export markets throughout the world. It suggested that awareness should be created in the minds of producers and exporters regarding quality products and price structure of the international markets.


C. Murthy et al. (2008) made a study about spatial and temporal price variation of onion. The study revealed that seasonal indices of prices of onion showed seasonality in all markets. Onion farmers rushed their produce for sale immediately after harvest. This clearly indicated that the prices of onion were mainly influenced by their arrivals in these markets. They suggested that the farmers could reap the benefit of higher prices for onion only by making storage until the prices increases.

1.3.2 PRODUCTION AND MARKETING OF ONION

P.K. Dhillon and Veena Goel (1993) reported that most of the farmers bring their produce to the market and prefer to sell it on the same day or during the same period instead of taking it back because of pressing monetary needs, lack of storage facilities, want of space in the market and other consideration. As a result, the farmers are not in a position to realize fruitful prices to their onion. They suggested that the farmers should store the onion until the good price would come.

S.M. Mundinamani and H. Basavaraja (1993) in their article revealed that substantial finance is required for marketing of agricultural commodities. Though the finance is required for a short period, in the absence of credit facility from the institutional agencies, farmers particularly the small farmers depend upon informal sources. This practice forces the cultivators to sell their produce through the agent who has arranged such facilities irrespective of the fact that whether they get good price or not. This practice would give scope for cheating the cultivators. They suggested that there is a greater need to consider the cost of marketing as a part of production credit.

M.S. Shyamasundar and M.V. Srinivasa Gowda (1994) in their study revealed that in onion production, area under the crop, human labour and plant protection chemicals

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had significant effect on the returns and these variables explained 98 per cent of the variability in returns. The study further indicated that on small and pooled farms, human labour had a significant influence on the gross revenue. A Cobb-Douglas production function was employed in this regard.

S.N.Mishra et al\textsuperscript{33} (1995) conducted a study on production and marketing of onion. They estimated the cost of production of onion as Rs.97 per quintal and production of onion per hectare as 80 quintals. The study has identified three marketing channels operating in onion marketing. Producer received maximum share in consumer’s rupee in channel-I (86.67\%). They highlighted that Lack of infrastructural facilities, Institutional credit and illiteracy as the major marketing constraints. The study suggested that the marketing efficiency could be improved by establishment of storage facilities, regulation of sale price of onion by the government and providing credit facilities to the poor farmers.

H.N.Atibudhi\textsuperscript{34} (1997) in a study found that the average yield of onion per hectare was 7,685 kgs. 13.56 per cent of the total production was used for home consumption and 86.44 per cent was the marketable surplus. This study suggested that in order to improve the marketable surplus, post harvest loss of onion has to be minimized.

K.L.Jadav et al\textsuperscript{35} (1997) in their paper revealed that the average cost of marketing per quintal as Rs.140.50 for onion among various vegetables. They also identified that the cost of packing and transport as the major problems in marketing of onion. They suggested that adequate packing materials and efficient transport system may be provided by the government for facilitating farmers to get good return to their produces.

K.A.Khunt\textsuperscript{36} (1997) conducted a study on economic evaluation of production and marketing of vine vegetables. This study attempted to workout cost of cultivation of selected vegetables, estimating marketing cost, margin and price spreads and to identify

the problems faced by the vegetable growers. He concluded that high market margin and price spread calls for intervention of Government in vegetable marketing either through cooperative marketing societies or regulating the vegetable marketing process.

S.P.Gupta and N.S.Rathore\textsuperscript{37} (1998) found that two marketing channels were operating in the marketing of vegetables. The channel-II was the best for prices of vegetables. The authors opined that lack of resources, technical Know-how, non-availability of good quality seeds are some important problems in production of vegetables and lack of regulated markets, cold storage and grading facilities, high marketing margins are major constraints in vegetable marketing.

Deepak Shah and A.Narayanamoorthy\textsuperscript{38} (1998) have estimated the production and marketing cost of onion. They found that the proportion of production cost to total cost was 80 to 85 per cent. Price spread analysis was used to determine the level of pricing efficiency. The producer’s share in the domestic market and export market was estimated as 45 per cent and 25 per cent respectively. The study concluded that onion producers are mostly exploited by the middlemen and other market functionaries.

I.Sathyasundaram\textsuperscript{39} (1998) has indicated that India is the major producer of onion next to China. He also stated that the fluctuation in prices was the main post harvest problem faced by farmers. The factors contributed to low price of onion include delayed crop during lean season, fall in exports because of poor quality and lack of control over the grades and qualities of the produce. The suggestions given are: (i) Farmers should be educated and trained to adopt new practices and also scientific storages facilities, (ii) Incentives should be provided to producers of high quality and graded onions, and (iii) Cooperative societies should be involved in onion production and marketing. The government should initiate measures to ensure price stability and long term export policy.


R.L. Shiyan et al. (1998) attempted to analyse the marketing of vegetables. They found that marketing of vegetables possessed more problems when compared to other agricultural commodities as they have a high degree of perishability, high proportion of retailers’ margin and concentration of trade in few hands. The marketed surplus was more than 90 per cent of the total vegetable production. They concluded that lack of proper storage facilities and disorganized marketing system in the study area resulted into lion’s share of retailers’ margin and higher proportion of marketing cost.

S.C. Mohapatra (1999) in his study, identified that the cost of production of onion per hectare as Rs.17,949. Human labour cost is accounted as the major cost among the total cost of production. He also found that there are three marketing channels in onion marketing. The study was also extended to analyse the price spread and marketing efficiency of onion. He concluded that the major constraint in production and marketing of onion are the non-availability of adequate institutional credit facilities at right time.

R.L. Shiyan and B.H. Kakadia (1999) in their study found that the price of onion during peak production period is low when compared with lean period prices. They suggested that the farmers should store the onion until the prices would rise. They also identified that inappropriate storage facility is the major cause and they suggested that the creation of storage facilities, extending marketing finance and fixing of minimum support price by government would be helpful to farmers.

H.N. Atibudhi (1999) made an another study to find out the post-harvest management of onion. He found that 22.60 per cent of onion has been lost at the farmers level due to lack of knowledge of proper storage and handling. This loss is a huge quantity and reduces the net income of the farmers substantially. He suggested that horticultural department has to educate the farmers about the post-harvest management practices of onion.

R.L. Shiyani and B.H. Kakadia (1999) studied the credit requirement for production and marketing of onion. It was concluded from the result of the study that the average requirement of production credit in the study area was Rs.38,629. Human labour, seed, miscellaneous cost, chemical fertilizers and irrigation charges were the major items of operation cost. They suggested that due to huge marketing cost, the bankers should come forward and extend timely and adequate production credit as well as marketing finance for the benefit of farmers.

Ravikesh and Manish K. Singh (1999) made an attempt to estimate marketing cost, margin and price spread in onion marketing. They found that producer’s share of consumer’s rupee was poor. They suggested that cooperative marketing system should be adopted in onion marketing in order to increase the producer’s share in consumer’s rupee.

Deepak Shah (1999) identified that cost of production of onion per hectare was 10642.78 and total marketing cost was Rs.24.95 per quintal. He also identified that producer’s share in consumer’s price was 46.97 per cent. He advocated that inadequate storage facility during the harvest would force the farmers to market their produce immediately. He suggested that establishment of storage and market infrastructure would increase the price for onion.

A.K. Kostha and M.R. Chandrakar (1999) made a study about Economics of production and marketing of vegetable crops. The study computed per quintal Input Cost, Marketing cost and Returns of sampled vegetable farms. It has also identified the constraints in production and marketing of vegetable crops. The major problems in marketing of vegetables in this study area were absence of regulated market, lack of cold storage facility, price variation, malpractices by commission agents and non-availability of credit facilities by regulated financial institutions.

Rajivmehta and R.K.Kamra\textsuperscript{48} (1999) advocated that onion production in the country has been increasing year by year and it has doubled during the past two decades. Onion has seasonality in its price behaviour. Generally price of onion decreases at the time of production season and price increases due to inflationary trend in non-production seasons. They suggested that the farmers should store the onion to get good prices.

V.S.Anitha Nirmala \textit{et al}\textsuperscript{49} (1999) study was designed to analyse the factors influencing the marketable surplus of select agricultural commodities, \textit{viz.}, onion and chillies, the methods of storage practiced and the selling behaviour of farmers. The study clearly showed that the size of production was the major determinant of the size of marketable surplus of onion and chillies. They found that very few farmers utilize the storage facilities. They suggested that storage may be popularized among the farmers in the localized onion cultivation areas in order to get remunerative price for onion.

Molla Alemayehu and B.R.Atteri\textsuperscript{50} (2000) found that November to May is the harvesting period of onion crop in major onion growing states of India. Huge arrivals during the period of harvest played an important role in causing high fluctuation of prices of onion. They suggested that the seasonality in prices could be reduced by proper integration of production in various parts of the country by establishment of orderly marketing system.

P.Amuthan \textit{et al}\textsuperscript{51} (2000) found that the total cost of cultivation of small onion per hectare was Rs.40,356.96 in season I and Rs.41,091.55 in season II. The net return of onion increased because of storage of two months and which was analysed with the help of multiple linear regression analysis. They suggested that the Lack of storage and the lack of organized marketing system are the major problems in marketing of onion.

Vigneshwara Vermudy\textsuperscript{52} (2000) in his study found that there are two marketing channels operating in the onion marketing and sale through commission agents-cum-wholesalers is the most popular. The producer’s share in consumer’s rupee was only 65 per cent. He also found that diseases, inadequate irrigation facilities, non-availability of high-yielding varieties, lack of proper organized marketing system and non-availability of proper storage facilities are the major problems in production and marketing of onion.

A.D.Naik and \textit{et al}\textsuperscript{53} (2001) have conducted a study on marketing of onion. The study focused on marketing channels, marketing cost, marketing margins and price spread of onion. They found that there are two marketing channels in onion marketing. Cost of marketing of onion was high in channel two due to higher transportation and packing charges.

S.Z.Khadase \textit{et al}\textsuperscript{54} (2001) in their study of factors governing the flow of marketable surplus, they identified the production, marketable and marketed surplus of jowar. They found a positive relationship with the size of holdings and retentions, where as there is a negative relationship with the kind of payment and home consumption.

DVLNV Prasad Rao\textsuperscript{55} (2001) found that marketing cost incurred by the producers amounted between 9 to 10 per cent of consumers’ cost. He also found that inadequate roads, lack of storage, inadequate packing and transportation facilities are the major problems faced by the producers and intermediaries in the study area for marketing of vegetables.

A. V. Gadre \textit{et al}\textsuperscript{56} (2002) observed that losses in storage and transport of onion were 3.68 per cent in small size farms, 1.83 per cent in medium size farms and 1.58 per cent in large size farm of the total production of onion. At the overall level, the losses were

\begin{thebibliography}{99}
\end{thebibliography}
observed to the extent of 2.53 per cent. This has showed that post-harvest losses in white onion were reduced with increase in farm size. Total marketed surplus was 110.16 quintal per hectare (78.19%) in small group, 131.84 quintal per hectare (92.06%) in medium group and 140.84 per hectare (93.67%) in large group. It was also observed that the production of white onion on sample farms was 144.91 quintals per hectare, of which 89.23 per cent was marketed surplus. The marketing system for white onion was in the hands of marketing functionaries to the extent of 93 percent. The percentage share of marketing margins in consumer price paid was 11.56, 31.99, 29.57 and 28.88 per cent in Channel I, II, III and IV respectively. The marketing efficiency (ME) was much higher in Channel I (84) than that of Channel II (2.19), Channel III (2.38) and Channel IV (2.46). It was suggested that the white onion cultivators should streamline marketing strategy to minimize the role of marketing functionaries to harness better from white onion cultivation.

W.D. Lesly et al57 (2002) in their observations revealed that the cost of cultivation varied from Rs.93,000 - 165,000/hectare including family labour. Out of that highest cost was recorded for weed control (18%) followed by land preparation (15%), nursery management (15%), harvesting (15%), irrigation, pest control, fertilizers and seed materials. They suggested that if the farmers follow the recommendations given by the department of Agriculture, they could be able to maximize the yield with a low level of cost of production to get high profit margin.

J.M. Talathi and others58 (2002) conducted a study on economics of rabi vegetable cultivation and marketing. The study attempted to estimate cost and returns, identifying agencies involved in marketing of vegetables and the problems faced by the vegetable growers. From the study they identified the functioning of two channels in the marketing of vegetables and Rs.76 was paid by the growers as marketing cost when they sell through channel-I. The study suggested that the farmers’ problems/constraints in production and marketing of vegetables have to be solved with due care and policy backups at Government level.

S.R.Balappa and L.B.Hugar\textsuperscript{59} (2003) in their paper made an attempt to analyse various components of production and marketing cost, marketing channels adopted by farmers for disposing of onion, producer’s share in consumer’s rupee and price spread in respect of onion. They found that human labour as the major cost among production of onion. They also stated that market intermediaries charge huge amount as their margin. The suggestion given in the study was to develop farmers’ market for vegetables in general and onion in particular.

T. Elenchezhian and S. Kombairaju\textsuperscript{60} (2004) attempted to study the marketing efficiency of major vegetables. The study revealed that the nature of vegetables, lack of proper storage and processing facilities, lack of market information, and presence of many middlemen in vegetable market lead to a wide range of fluctuation in prices that affected both farmers and consumers. Using Shepherd Index, the marketing efficiency was measured and the marketing cost function analysis facilitated to evaluate the relative contribution of various factors to the marketing cost. They suggested that the distance between farm and market and labour cost for post harvest operations have positively influenced the marketing cost for small onions.

B.Ganeshkumar, et al\textsuperscript{61} (2004) conducted an investigative survey on marketing of various agricultural commodities. In that survey they found that onion cultivation was affected due to lack of regulated market, existence of monopoly market by wholesaler/ retailers, lack of efficient transport facilities and high pressure of insect-pests and disease during rainy season.

A.R.Verma et al\textsuperscript{62} (2004) made a study about production and constraints in onion marketing. They found that the average cost of cultivation of onion per hectare was Rs.22,931.96. Among 80 sample farmers, 62 farmers expressed high price of seed and


fertilizers as the major problems in production and 71 farmers expressed the non-availability of adequate storage as the major problem in marketing of onion.

Muhammad Iqbal Marwat et al\textsuperscript{63} (2004) made a study on the existing marketing channels and problems faced by onion growers. The study reveals that the majority (76\%) of the sample growers sold onion in Dir District, 7\%, in other places in NWFP, while the remaining 17\% sold in Punjab and Sindh. Bulk of the produce (53\%) of onion was sold through arthi (commission agent), while 25\% was sold to beoparis and the remaining were sold to consumers, retailers and wholesalers. It was found that a small fraction of onion was retained within Dir and the rest being exported to off – Dir markets. Thus approximately 95 \% onion was exported to other places in NWFP, Punjab and Sindh. The study identifies that before reaching to the ultimate consumers the onion produce passes through a number of channels. These include village beoparies, retailers, wholesalers and arthies/commission agents. Due to one or the other reasons the growers were bound to sell their produce through commission agents. This practice has increased the marketing cost and reduced the bargaining power of the onion growers in the sample area. The study recommended that the formation of Farmer Associations will reduce the role of the middlemen and will minimize dependence of the farmers on them.

A Tamil magazine Naveena velanmai\textsuperscript{64} (Modern Farming) (2004) contains an article about small onion production in new technology. This article described that sowing of small onion in Tamilnadu being made between the months of September to October. It was also stated that the average cost of production of small onion per acre was Rs.19,450 and the average gross return would be Rs.55,550. The suggestion given in this article is that the transplantation system would provide good return to farmers than the traditional method of seed bulb sowing.

Taiwo Alimi and A.B. Ayanwale\textsuperscript{65} (2005) in their study revealed that output price followed by input price were ranked highest among the various risk sources in onion production. Onion producing farmers were poor in the use of risk reducing strategies to


the extent that no risk reducing strategy exists for market risk. Reason for non-use of some risk reducing strategies is either that they are not available or difficult to implement. The most popular risk reducing strategy used was crop enterprise diversification. It is suggested that agricultural policy makers should encourage among onion farmers about the use of formal insurance and cooperative marketing.

Muhammad Zulfiqar et al\textsuperscript{66} (2005) in their study identified beoparies, wholesalers, commission agents and retailers are the intermediaries in onion marketing. It has been reported that the producer gets only 40 per cent on average of the consumer rupee for onion crops. Share in the onion is distributed in the ratio of 14 per cent by beopary, 21 per cent wholesaler, 5 per cent by commission agent and 20 per cent by retailer. The steps recommended for improving the functioning of vegetable markets in terms of improved marketing margins for growers and reduce physical losses include: Proper physical marketing facilities, adequate storage facilities, strictly enforced grading and standardization, availability of processing facilities, marketing credit and free flow of information.

A. Ali et al\textsuperscript{67} (2005) made a study to determine profitability of potato, onion and tomato in Mastung, Kalat, Pishin and Killa Saifullah districts of upland Balochistan. From all the four districts, totally 90 farmers were interviewed. The cost of production of onion was Rs. 12,386 per hectare. In the production cost of onion, the inter-culture had the highest share followed by seed, irrigation and fertilizer application etc.

D.S. Navadkar et al\textsuperscript{68} (2005) revealed in their study showed that 30.79 per cent of the area of study was being used for vegetable cultivation among total area. They also found that commission charges, Transportation cost and packing materials are the major components of marketing cost. The major problems in marketing of vegetable was due lack of cold storage facility in the vegetable production areas.


A. Prasad\textsuperscript{69} (2006) made an article about problems in Indian agriculture. He advocated that there was a wide fluctuation in the prices of different agricultural products leading to uncertainty and helpless condition of farmers. There must be an assured and remunerative marketing policy for vegetables. He also referred that major problems in marketing of agricultural produces was inadequate market information. He suggested that commodity exchanges and Future markets, Agricultural and Processed Food Product Development Authority and Commodity board etc. must provide information on domestic and international markets demand and prices of agricultural products.

CC Eze and E Anumihe\textsuperscript{70} (2006) measured market structure using gross margin analysis and the productive efficiency using the production function analysis. The study revealed that the respondents had 15 years experience in onion marketing. Trading stock and transportation have contributed to the highest total variable cost with 82.48 per cent and nine percent respectively. The study found that variables such as trading stock, transportation cost, educational attainment, marketing experience, index of relative importance of onion in the food system and storage and security were found to have positive and significant effect on sales receipts of the onion marketers.

Jema Haji\textsuperscript{71} (2007) advocated that traders capture a significant proportion of the marketing surplus due to market power and audacity to absorb risk with this share varying along the degree of perishability and across cities. In general, the results of this study reveal the existence of considerable economic inefficiency in production, poor contract enforcement, and imperfect competition in the marketing of vegetables. The findings of this study indicate the need for Governmental and/or Private institutions interventions to improve the production and marketing performance of vegetables by providing the necessary institutional support to the small farmers in the study areas.


Mari et al\textsuperscript{72} (2007) in their paper estimated production function to measure the degree of returns to scale for onion, tomato and chilies. Functional form of the Cobb-Douglas function was used with three inputs: land, labour and capital. Sum of the coefficients on these inputs measures the degree of homogeneity, which determines whether the production function is constant, increasing or decreasing returns to scale. Ordinary least square method was used for estimating the production function. The t-test was applied for testing the null hypothesis that degree of homogeneity equals 1. Null hypothesis was maintained at 5 per cent significance level for each of onion, tomato and chilies crops. These results indicated that the production function has constant returns to scale for these crops.

Harsimranjeet Kaur and Meenakshi Gupta\textsuperscript{73} (2008) in an article described about problems and strategies in production and marketing of fruits and vegetables in India. They inferred that horticultural crops are highly perishable in nature. About 30 per cent of the produces were getting wasted due to lack of proper facilities in production and marketing of them.

U.S. Bose et al\textsuperscript{74} (2008) in their study stated that among various commercial vegetable crops, onion is used throughout the year. They found that cost of cultivation of onion per hectare was Rs.30,512 and the net income per hectare was Rs.83,071 in inorganic cultivation. They also found that the cost of cultivation of Rs.42,137 per hectare and net income per hectare was Rs.65,800 in organic cultivation of onion.

A.M. Rajput et al\textsuperscript{75} (2008) made an attempt to analyse the economics and constraints in the production of onion. Multistage stratified random sampling method was used for the selection of villages and onion producers. The primary data were collected from 50 farmers during 2004-05 and the analysis showed that on an average cost of cultivation of onion per hectare was Rs.23,772. Unremunerative prices during the peak season and lack of storage facilities were reported to be the important constraints in onion marketing.


\textsuperscript{73} Harimranjeet Kaur and Meenakshi Gupta, “Problems and Strategies in Production and Marketing of Fruits and Vegetables in India”, Agricultural Situation in India, Vol.LXIV, No.12, 2008, p.621


Hag Hamed Abdelaziz (2008)\textsuperscript{76} conducted a study on economics of onion production. The Cobb-Douglas production function was used to measure the input and output relationship. The main findings of the study indicated that irrigation, fertilizer and family size variables were highly significant and the rest of the variables were insignificant but positively affected onion production. The analysis of the cost items indicated that the costs of land preparation, fertilizer, labour and irrigation were the most important cost items in onion production. The study recommended that the onion production is profitable only when there is the provision of inputs for cultivation at the proper time and good storage facilities. These could be given to farmers through farmers' agricultural cooperative societies.

T.M Kudi et al (2008)\textsuperscript{77} studied economic analysis of garlic production. The analytical tools employed include descriptive statistics, net farm income and transformed Cobb-Douglas production function analysis. The net farm income analysis shows that garlic production was profitable. The production function analysis reveals that a unit increase in seed, labour, land, chemicals and fertilizer provides an extra yield of 0.1217, 0.1189, 9.38, 0.168 and 1.328 respectively. The study also found that labour, chemicals and land were over utilized for garlic production with efficiency ratios greater than one (5.3, 1.9 and 2.69) while, seed and fertilizer were underutilized in garlic production with efficiency ratios of less than one (0.167 and 0.60). The sum of the elasticity indicates a decreasing return to scale (0.90). The study identified the major constraints in garlic production which include inadequate fertilizers, chemicals, storage and transportation facilities. It was recommended that a proper training may be given to farmers about the adoption of new technologies related to garlic production.

\subsection*{1.3.3 PRICE SPREAD AND MARKETING EFFICIENCY}

M.S. Shyamasundar and others\textsuperscript{78} (1995) in their study analysed the price spread in marketing of onion. The results of price spread analysis indicated that among the four

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channels in onion marketing, producers got the highest net price per quintal in channel – II i.e. 72.45 per cent of the consumer’s rupee.

N.K. Yadav and D.C. Pant (1995) made an article about price spread of early grown onion. They found that marketing cost incurred by both onion growers and sellers was higher (Rs.74.83 per quintal) in the case of worst road facilities while compared with good road facilities (Rs.68.42 per quintal). Transport was the main marketing cost which has accounted about 38 per cent of the total marketing cost. The study also revealed that producers received only 30 per cent share of consumer’s price. They suggested that in order to get good price and yield for onion, the planting should be done during the months between Novembers to December.

C. Sen and R. P. Maurya (1998) in their study of marketing of vegetables in Sewapuri block, they found that the price spread accounted for more than 33 per cent of the price paid by the consumers for the major vegetables. They suggested that in order to reduce the price spread, producers are to be given various measures such as marketing their vegetables through co-operatives, increased facilities of processing, cold storage and grading of vegetables and rationalization of various marketing charges.

D. S. Thakur (1998) in an article about agricultural marketing efficiency, pointed out that the farmers hardly get less than the half of the consumer’s price of the agricultural commodities. He also advocated that low price is the major problem in marketing of agricultural produces. He suggested that the commission charges are to be reduced in view of huge marketed surplus of vegetables at present.

Kiran Sankar Chakraborthy (2005) studied the marketing cost and margins in transaction of agricultural produces. It was found from the study that the farmer’s share in the consumer’s price in vegetable market was between 44.38 to 54.63 per cent with a

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total average of 50.13 per cent only. Therefore, it was stated that nearly 50 per cent of every rupee in price goes to marketing setup including transportation cost.

Pramod Kumar et al\textsuperscript{83} (2005) observed that producer's share in consumer's rupee was the maximum in channel-I (96.95%) since the farmers sold the onion to consumer, directly followed by channel-II (81.82%) and channel-III (65.50%). The total marketing margin ranged from 8.96 per cent (channel-III) to 12.55 per cent (channel-II). Marketing efficiency of onion was estimated by using shepherds formula. The marketing efficiency of onion worked out to 1.90 which is quite low. This is because of high marketing margins and marketing costs. The channel-I (31.81) was most efficient followed by channel-II (15.87) and channel-III (1.90). They concluded that three storage pattern for onion were used by the producers i.e. kuccha floor, pucca floor and bamboo mats. The marginal farmers used kuccha floor followed by bamboo mats and pucca floor. The highest quantity being stored on bamboo mats method followed by kuccha floor and pucca floor. The per quintal storage cost of onion for 5 months was highest on marginal farms followed by small and medium farms. It is observed that storage cost was highest on bamboo mats followed by kuccha floor and pucca floor.

B.L. Sharma and D.C. Pant\textsuperscript{84} (2006) analysed the price spread and Problems in marketing of onion. The study revealed that producers retained 8.41 per cent of onion for seeds, followed by home consumption and for later use in that year. In onion marketing, three marketing channels are operating in the study area and highest quantity was routed through local traders and commission agents (Channel – II). The packing materials and transportation cost were the major components of marketing costs. The producers’ share in consumers’ rupee for onion among different channels is:


\textsuperscript{84} Sharma, B.L. and Pant, D.C., “Price Spread and Problems in Marketing of Onion in Agro-Climate Zone II-A of Rajasthan", Agricultural Marketing, Vol.XLV, No.1, April-June, 2006, pp.8-11
<table>
<thead>
<tr>
<th>Channel</th>
<th>Percentage of Cultivators</th>
<th>Percentage of Producers’ Share in Consumers’ Rupee</th>
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<tr>
<td>I</td>
<td>6.66</td>
<td>96</td>
</tr>
<tr>
<td>II</td>
<td>75.00</td>
<td>54</td>
</tr>
<tr>
<td>III</td>
<td>18.34</td>
<td>48</td>
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They suggested that in order to remove all the problems faced by the producers in marketing of onion, the proper storage facilities and marketing facilities should be provided.

M.S.Aitawade et al\(^{85}\) (2006) studied the marketing costs, marketing margin, price spread and the problems faced by the farmers in marketing of rabi onion. They found that per quintal cost of marketing was Rs.65.86. The transport cost, packaging costs and commission charges were the major costs in marketing of onion. The producer’s share in consumer’s rupee was 63 per cent. The major problems faced by the onion growers in marketing were identified as high transport cost, high commission charges, price variation in market and lack of market information. The study suggested that the State Government may provide storage facilities to the growers at low cost and regularize the transport charges to safeguard the interests of the onion growers.

A.G.Ghumatkar et al\(^{86}\) (2006) found that there are four marketing channels operating in garlic marketing. In the case of marketing cost, commission charges, transportation and packing materials are the predominant of all which put together accounted for 95.55 per cent. The price received by the producer in channel – IV was highest (Rs.2,414.09) as compared to other channels. Producer’s share in consumers rupee was also high (93.50 %) in channel – IV.

A.K.Randev\(^{87}\) (2008) in his study found that there were seven channels operating in fruits and vegetable markets and also studied producer’s share in consumer’s price.

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It was arrived that producer’s share of consumer’s rupee was 45.63 per cent. He suggested that adequate infrastructure for marketing has to be established by government for increasing the producers’ share in consumers’ price.

A.R. Verma\textsuperscript{88} (2008) made a study to estimate various marketing costs and margins. A multi-stage random sampling technique was used to select a sample of farmers. The study revealed that the onion growers sold their onion produce through three marketing channels. The marketing cost was highest in channel-III than the other channels. The producers received the maximum share of consumer’s rupee in channel-I as there was no intermediary between the producers and consumers. It is evident from the study that inadequate storage facilities, lack of organized markets and lower price due to seasonal glut are the main problems faced by the onion growers in the study area.

1.4 IMPORTANCE OF THE STUDY

An overview of the studies reviewed above shows that most of studies pertain to onion, vegetables, ginger and garlic. No study on farmers’ attitude in production and marketing could be traced out. More over not a single comprehensive study for onion crops covering various aspects such as cost, net returns, constraints in onion cultivation, marketable and marketed surplus, marketing cost, marketing margin, marketing efficiency, price spread, marketing problems, trends in area, production, and productivity in India and world and also country wise exports in terms of volume and value.

Therefore, the study differs from the earlier studies in respect of its scope, nature, contents and the area covered. The present study is thus significant and it is expected to be useful not only to the growers of onion in the Erode District of Tamil Nadu but also to onion traders in different places, Government and the Policy makers in better understanding of the present way of onion marketing. The result of the analysis of this study would be useful to the onion growers to minimize the cost and will provide ways for getting more return.

1.5 OBJECTIVES OF THE STUDY

The objectives of the present study are

1. To review the trends in growth of area, production, productivity and export of onion.
2. To analyse the cost, returns and problems in production of onion
3. To assess marketable and marketed surplus of onion, price spread and marketing efficiency of different channels.
4. To examine the farmers’ satisfaction about the marketing system, marketing functions and problems in marketing of onion.
5. To offer suitable suggestions to overcome production and marketing problems and efficient marketing system for onion marketing.

1.6 HYPOTHESES

There is no significant positive compound growth rate in area used for production of onion among the onion producing Countries in the world.

There is no significant positive compound growth rate in production of onion among the onion producing Countries in the world.

There is no significant positive compound growth rate in productivity of onion among the onion producing Countries in the world.

There is no significant positive compound growth rate in area used for production of onion among the onion producing States in India.

There is no significant positive compound growth rate in production of onion among the onion producing States in India.

There is no significant positive compound growth rate in productivity of onion among the onion producing States in India.

There is no significant positive compound growth rate in export of onion in volume (quantities) to various Countries.

There is no significant positive compound growth rate in export of onion in value to various Countries.
There is no significant relationship between the demographic variables of respondents’ viz., Age, Education, Occupation, Family Income, Area of land holding, Farm experience, Experience in onion cultivation and Extent of land used for onion cultivation and opinion of farmers about the availability of factors in cultivation of onion.

There is no significant relationship between the demographic variables of respondents viz., Age, Education, Occupation, Family Income, Nature of family, Size of family, Number of jobholders in the family, Family Members engaged in agriculture, Area of land holding, Farm experience, Experience in onion cultivation, Extent of land used for onion cultivation and Block and satisfaction of farmers about the existing onion marketing system in Erode District of Tamil Nadu.

1.7 OPERATIONAL CONCEPTS

Productivity

Productivity is a measure of the efficiency of production in the form of an average, expressing the total output of onion divided by the total area of land used for the production of onion.

 Marketable Surplus

The marketable surplus is the residual left with the farmer after meeting his family consumption, farm requirements, social and religious payments.

Marketed Surplus

Marketed surplus is that quantity of the produce, which the farmer actually sells in the market, irrespective of his requirements for family consumption, farm requirements, social and religious payments.

Price Spread

The price spread is the difference between the price paid by the consumer and the price received by the producer. The difference reflects the marketing cost shared by different intermediaries and margin taken by them.
Marketing efficiency

Marketing efficiency means the movement of goods from producers to consumers at the lowest possible cost, consistent with the provisions of the services desired by the consumer.

1.8 SCOPE OF THE STUDY

This study is undertaken to examine the onion production, marketing practices and problems in Erode District of Tamil Nadu. Onion is grown in most of the districts in the State of Tamil Nadu. This study confines only to Erode district as this district is the third largest area and second in yield of onion production among the districts in the State. This study is an attempt to examine the production and marketing of onion in Erode district. The scope of this study is confined to production and marketing problems of the onion growers of Erode district of Tamil Nadu.

This study aims to analyse about marketable and marketed surplus, price spread and producers’ share in consumer rupee, and to examine the opinion of the onion cultivators about the existing marketing system in relation to socio-economic factors like age, educational status, size of the family, number of members in the family, number of members in the family engaged in agriculture, gross annual income from all sources, occupation, size of land holding, extent of land used for onion cultivation.

This study also intends to cover the area, production and productivity of onion in Country-wise and State-wise. Exports of onion from India in terms of volume and value of are also analysed.

1.9 PERIOD OF THE STUDY

The study includes both primary and secondary data. The primary data has been taken into consideration about production and marketing of onion pertaining to the production year 2008-09 of Rabi season. The secondary data of study covers a period of twenty years from 1990-91 to 2009-2010 in reviewing state wise area, production, productivity and Export of onion to various countries.
1.10 METHODOLOGY AND TOOLS

1.10.1 SAMPLING DESIGN

This is an empirical research based on survey method. The present study is confined to Erode District keeping in view that this district ranks fourth in area of onion cultivation with an area of 2,026 hectares. Then a Multi-Staged random sampling has been adopted for the study.

SELECTION OF THE AREA

The Erode district consists of sixteen blocks. Out of 16 blocks in the district (As per the records of District Statistical Office), four blocks namely, Sathyamangalam, (249 hectares), Thookanaicken Palayam (433 hectares), Bhavani (161 hectares) and Ammapettai (565 hectares) are purposively chosen at the first stage as these four blocks accounted for higher proportion (69.49 per cent)\(^{89}\) of the total area of onion cultivation of the district.

SELECTION OF THE REVENUE VILLAGES

In the selected four blocks, there are 87 revenue villages (Sathyamangalam block 30, Thookanaicken Palayam block 15, Bhavani block 18 and Ammapettai block 24). Onion is cultivated only in 61 revenue villages (Sathyamangalam block 17, Thookanaicken Palayam block 12, Bhavani block 11 and Ammapettai block 21). In order to select a representative sample, a list of villages where at least ten hectares of land area used for onion production during the year 2008-09 has been collected from the records of Agricultural Departments of the representative blocks. As per this list, there are 41 villages and all these villages are considered for the present study (Sathyamangalam block 13, Thookanaicken Palayam block 10, Bhavani block 7 and Ammapettai block 11).\(^*\)

SELECTION OF SAMPLE FARMERS

To select the onion producing farmers, a list of farmers who produce the onion with at least \(\frac{1}{2}\) acre of land during the year 2008-2009 of Rabi season is prepared with the

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\(^*\) See Appendix - C
help of Block Development officials and Village Administrative officers. As per this list, it is found that there are 1327 onion producers in the selected 41 villages.

For the purpose of selection of sample farmers, it is decided to select 50 per cent of the farmers from each selected 41 villages by using simple random sampling technique (lottery method) which accounted for 664 onion producers and this is considered adequate and representative.

The data are collected by survey method. The farmers are interviewed personally with the help of well designed and pre-tested interview schedule* for its suitability through a Pilot study. Owing to non-response to some questions and non-cooperation of the sample farmers, 84 farmer respondents have been ignored and only 580 sample farmers are considered for the further analysis. Such selected 580 sample farmers included 213 (36.72 per cent) from Thookanaicken Palayam Block, 151 (26.03 per cent) from Ammapettai Block, 125 (21.55 per cent) from Sathyamangalam Block and 91 (15.69 per cent) from Bhavani Block.

SELECTION OF INTERMEDIARIES

Onion producers in the study area are marketing the onion through Local Market, Brokers/ Commission Agents, and Wholesalers. Therefore, these three functionaries are considered for the study. Based on the information provided by the sample farmers, 120 marketing intermediaries from four blocks are purposively selected. The selected intermediaries consist of 60 local market retailers, 25 brokers / commission agents and 35 wholesalers.

1.10.2 SOURCES OF DATA AND TOOLS USED

The present study is based on both primary and secondary data. The first hand information has been collected from both onion growers (580) and market intermediaries (120) through interview schedule*.

The necessary secondary information has been collected from the Directorate of Economics and Statistics, New Delhi, National Horticultural Research and Development

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* See Appendix - A
* See Appendix - B
Foundation, Nasik website, United States Department of Agriculture website, Food and Agriculture Organisation of the United Nations website, India stat.com, the Office of the Erode District Horticulture, Erode and District Statistical Office, Erode.

The Library of Tamil Nadu Agricultural University, Coimbatore, the Library of Tamil Nadu Agricultural College and Research Centre, Madurai, the Library of Madurai Kamaraj University, Madurai, the Library of Bharathidasan University, Tiruchirapalli, the Library of Annamalai University, Chidambaram and the Library of Periyar University, Salem have been visited for the collection of information on previous studies. The Data relating to the introduction and other theoretical portions have been collected from various journals and books.

The researcher has visited each and every sample farms to collect information and the primary data from each respondent with three other assistants. Observation is also applied for the collection of information about the behaviour and attitude of the sample farmers.

1.10.3 TECHNIQUES OF ANALYSIS

The data collected from the primary source are analysed with various statistical tools.

The Country-wise and State-wise trends in growth of area, production, productivity of onion, and export volume and export value of onion to various countries from India are analysed with mean, standard deviation, co-efficient of variation and compound growth rates.

**Standard Deviation**

$$SD = \sqrt{\frac{\sum(X - \overline{X})^2}{(n-1)}}$$

Where

- $X$ = each score
- $\overline{X}$ = the mean or average
- $n$ = the number of values
Compound Growth Rates

\[ Y = ab^t \]

Where,

- \( Y \) = Input (area, production, productivity and export of onion in year ‘t’)
- \( a \) = Constant
- \( b \) = regression coefficients
- \( t \) = time elements in years

Cost and Return is measured with the help of Cobb-Douglas production function. To identify the Marketable surplus, multiple regression analysis is employed. Also to compute Marketing efficiency, the methods like Shepherd’s, and Acharya and Agarwal methods are used. Price-spread is computed for each channel to identify the most efficient one.

The influence of various personal, socio-economic and other variables related to the opinion of farmers about the availability factors in cultivation of onion and satisfaction of farmers about the existing onion marketing system in Erode district are analysed with the help of Analysis of Variance (ANOVA), Chi-Square Test, ‘Z’ test and contingency co-efficient.

Factors motivating farmers to cultivate onion, onion cultivation problems, Reasons for selection of channel by farmers to sell their onion and Marketing problems in onion marketing are analysed with Simple and Garret Ranking Techniques.

Garrett Ranking Technique

\[
\text{Per cent position} = \frac{100 (R_{ij} - 0.5)}{N_j}
\]

Where

- \( R_{ij} \) = Rank given for the \( i^{th} \) factor by the \( j^{th} \) Respondents
- \( N_j \) = Number of factors are ranked by \( j^{th} \) respondents
By referring the Garrett ranking table, the per cent position is converted into scores. Then for each factor, the scores of each farmer are added and then mean value is calculated. The factors having highest mean value is considered to be the most important.*

Thus the general plan of analysis ranges from simple percentages to compound growth rates.

1.11 LIMITATIONS OF THE STUDY

Though the study has been conducted scientifically with all possible efforts to reduce the possible errors, it is not free from limitations. Some of them are as follows:

1. The most important limitation of this study is that it confines to the farmers in Erode District of Tamil Nadu and intermediaries residing in Erode, Gobichettipalayam, Bhavani, Anthiyur, Sathyamangalam and Coimbatore. Hence, the general application of the results may be restricted only to similar socio-economic environment.

2. In the case of data, it pertains to data collected for the agricultural year 2008-09. Production and marketing details of quantity and price may vary from year to year. However, all possible efforts have been made to make it more relevant.

3. Onion producers do not keep records for costs, prices, storage quantity and returns of onion. So they are not able to furnish exact data. Therefore, a careful effort has been made to cross check the information provided by them based on their recall memory.

4. In the present study, there are 121 illiterate farmers. They may not have provided their opinion, satisfaction and problems properly. The commission agents, brokers, retailers and wholesalers generally provide incorrect information about their marketing practices. However, an utmost care is taken to obtain authentic information from them.

5. The study is based on primary data and interview schedule has been used to gather the required data. So limitations regarding primary data obviously apply and interview schedule has its own limitation.

6. This study is related to the Rabi season (November to February) of 2008-09 only. Therefore, the findings may not be suitable to the future period.

* See Appendix - E
7. The size of the sample is restricted only to 600. Therefore, the limitations in the sampling methods are applicable.

8. The information about the revenue villages and onion producing farmers are provided by Village Administrative Officers and their assistants. However, all possible efforts have been made in ensuring the details with the District Statistical Records.

9. Secondary data has been collected from many sources such as websites, publications and annual reports of government departments. The absence of data in source is filled with the help of other sources. Therefore, the authenticity of data is based on the information furnished in the particular sources.

1.12 CHAPTER SCHEME

Introduction, Statement of the problem, Review of relevant literature, Importance of the study, Objectives of the study, Hypotheses, Scope of the study, Period of the study, Methodology and tools, Limitation of the study and Chapter scheme are discussed in the first (Introduction) Chapter.

The second chapter is concerned with trends in growth of area, production, productivity and export of onion.

The third chapter attempts to find the costs and returns, farmers’ satisfaction about the factors available for production of onion and problems in production of onion.

The fourth chapter deals with producers’ surplus, marketing channels, marketing cost, price spread and marketing efficiency in onion marketing.

The fifth chapter is devoted to measures the level of satisfaction of farmers about the existing onion marketing system and the problems in marketing of onion.

The last chapter summarizes the important findings in the previous chapters in summary form. This chapter ends with suggestions for the improvement of farmers’ satisfaction, awareness about the modern production and marketing methods of onion, suggestions for further research and conclusion.