

## Garlic Trading - A Potential Agribusiness Venture in India

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### Abstract

Specialized commodity trading is gaining momentum in many parts of this nation. One such specialized trading is Garlic Trading. In respect of Garlic markets, India is having 21 important organized assembling wholesale markets. Among these organized wholesale markets, large number of private and unorganized markets is functioning in all the major garlic producing states. These markets handle a significant quantum of garlic bulbs and acts as a wholesale market in those regions and are becoming price takers. One such market is functioning over a long period of time in Tamil Nadu is the Vadugapatti Garlic wholesale Market of Theni District and the other one is Mettupalayam market wherein the Nilgiris Cooperative Marketing Society, Mettupalayam is one of the institution facilitates garlic marketing and supplies to Vadugapatti. Besides, Madhya Pradesh, Utter Pradesh and Rajasthan are the states supplying Garlic to Vadugapatti Wholesale Market of Tamil Nadu. Selected members of Vadugapatti Garlic Merchants Association have been interviewed following the Case Study Approach to study the garlic marketing practices prevalent among the sample farms. The study focused on the marketing channels prevalent in Garlic trading, price spread and marketing efficiency and the status of export of garlic to different countries from India. These are also presented and discussed in detail.

**Keywords:** Garlic trade; Garlic marketing; Marketing channels; Marketing efficiency; Price spread; Export of garlic

### Introduction

Garlic belongs to the family Alliaceae; genus *Allium* and species *sativum*. It is a herbaceous annual for the bulb production. The edible underground stem is the composite bulb made of numerous smaller bulbs or bulblets called cloves (5-30/bulb). Leaves have solid thin blades. Some varieties produce flower but these flower do not set seed. There are some varieties which produce vegetative bulbs on the top called bulbils. They are also used for propagation in some cases.

Garlic is consumed in every home and use in processing industry has a fairly constant market demand. Bulbs are easily stored for 5-6 months after harvest which favors long marketing season. Garlic is transported to the assembling centers in open bullock cart or tractor trolleys in open. It is also carried in jute bags in trucks. While loading the bags in trucks care should be taken in loading up to 5-6 bags height as over loading will damage the garlic bulbs in lower bags by pressure. Use of hooks should be avoided as it injures the bulbs /cloves and such bulbs when stored loose more weight and also rot easily. Garlic bulbs after reaching to the assembling centers are generally sold to the local traders for distribution to the consuming markets. These transactions usually take place with the help of commission agents. Exporters either buy their requirements directly from assembling centers through local commission agents or from wholesalers in the important assembling or regulated markets. Garlic is sold by open auction in regulated markets. In other markets sale often takes place by mutual negotiations which may either be direct between the buyer and seller

or through commission agents or brokers. In certain markets under cover system is also present. It is observed that in the markets adequate facilities for handling the produce like sheds/stores etc. are not present which ultimately results in increased loss. There is thus dire need to strengthen facilities at the assembling centers so as to handle the produce safely. There is considerable fluctuation in garlic price from year to year due to increased or decreased production. The prices of garlic are generally low during March to May due to peak period of arrivals which vary from Rs.30-40 per kg. There after prices of garlic increase and generally remain higher during the period of October to January. The rate prevailed during this period is normally more than Rs.100 per kg. Market support by Government is necessary to encourage farmers in continuing production of quality garlic every year.

### Dehydration of garlic

Some portion of garlic produce (surplus) is subjected to processing especially dehydration i.e. drying under controlled conditions of temperature and humidity. The dehydration is important because of the concentrated form, low cost convenience and easy transportability and dehydrated garlic in the form of powder etc., has become highly popular among the civilians, military forces, besides export. Garlic export makes excellent dehydrated products and it is used dry form has great scope particularly in foreign countries where there is scarcity.

### Export of garlic

India has been exporting for many years to the major importing countries like Qatar, Saudi Arabia, Zambia, UAF, Bahrain, Mauritius,

Kuwait, Bangladesh and Sri Lanka. The export has been ranging between 2-3 per cent of the total domestic production. The quantum of export of garlic has been fluctuating due to sudden change in the policy of garlic importing countries. China, France, Spain and Egypt are the major exporting countries. The country being at higher latitudes produce bigger cloved garlic is though not on big scale, It is picking up in northern hills and Nilgiris and Kodaikonal hills in view of increased demand in the export market. It is hoped that in the near future increase in area under those varieties having bigger cloves and have demand in the international market will be produced to the extent by 10-15 times easily. Hence, assessing the current trend in export of garlic becomes important and hence effort has been taken to present the export scenario in detail with the following specific objectives.

## Objective

To assess the Garlic marketing practices prevalent in the study area.

To document the status of export of garlic to different countries from India.

## Design of the study

The objective of this paper is to document the marketing practices and export of Garlic in India and to document the supporting infrastructure available in the State of Tamil Nadu. To document the same, the data were collected from the secondary sources of both Central and State Government reports. The reports taken into account for collecting the details on export of Garlic are furnished as follows.

- Agricultural Statistics at a Glance 2012 of Directorate of Economics and Statistics, Ministry of Agriculture, Government of India, New Delhi
- Food and Agriculture Organization Web Site
- Indian Horticulture Data Base 2011 of National Horticulture Board, Government of India, New Delhi [1]
- Hort-Stat – 2008 of Government of Tamil Nadu, Chennai [2]

The data gathered for different periods with respect to export of garlic, assembling and trading centers for garlic and the importing institutions and states involved in garlic export and import were gathered from the above reports and the data were analyzed using Descriptive Statistics like Mean and the current change in the data in respect of export of Garlic over the base period was also documented to assess the technological and extension impact due to the Government Intervention through its planned programs in horticulture. The results of this analysis will be better utilized by the policy makers and the planners in horticulture and agriculture for further development of these sectors.

With respect to marketing of garlic, the traders are hailing from Vadugapatti Garlic Merchants Association, Vadugapatti which is one of the leading wholesale Garlic market functions twice in a week, particularly on Thursdays and Sundays throughout the year. The Vadugapatti Garlic Merchants Association has around 180 members to its credit whom are involved in trading of garlic. Among the 180 traders, the active members whom are involved in large scale transactions of garlic is numbering around 50. Among the 50 traders, only Five traders have been interviewed as a case study approach to identify the assembling centers in Tamil Nadu, Marketing channels in which the produce is moved and the price spread in garlic marketing. These are measured using the following formulae.

## Price spread analysis

Price Spread in general, is referred to as the difference between the price paid by the Consumer and the Price received by the Producers per unit quantity of the commodity. Price Spread analysis would estimate the share of different market intermediaries in the consumer rupee and this would often facilitate the understanding of the relative efficiencies otherwise of alternative channels in marketing

To analyze the Price Spread in the distribution of Garlic, the following formula is used.

$$Ps = (Pp / Cp) \times 100$$

Where,

Ps = Producer share in the consumer money expressed in per cent

Cp = Consumer's Price per unit of Garlic in Rupees

Pp = Producer's Price per unit of Garlic in Rupees. Similar approach was used by Sekhar et al. [3].

The price spread analysis involved computation of different marketing cost and marketing margin at each stage and their expression as a percentage to the consumer's rupee. The various costs incurred in the marketing process were considered for each of the identified channels and separate price spread was worked out. The profit margin for each market functionaries in the different marketing channels was computed by subtracting the price paid and the marketing cost incurred by them from the price received by him on the sale of the commodity. Thus the marketing costs and marketing margins were distinguished.

## Estimation of marketing efficiency

Marketing Efficiency is the degree of Market performance. The movement of goods from producer to the ultimate consumers at the lowest possible cost consistent with the provision of services desired by the consumer is termed as marketing efficiency or efficient marketing. To analyze the marketing efficiency, the formula adopted by Shepherd is used

$$ME = (V/I) - 1$$

Where,

ME = Marketing Efficiency Index

V = Value added to the output in the marketing system. Here it is referred to as

the consumers price per kg of Garlic

I = Input used in the marketing process. Here it is referred to as the Marketing

Costs incurred per kg of Garlic. Similar methodology was used by Sekhar et al., during 1998 [3].

The lower the value of marketing cost higher would be the efficiency

## Calkin's index

Calkin's index of marketing efficiency was estimated using the following formula:

$$ME=1+ [\text{Sum of profit or margin}/\text{Sum of Marketing Cost}]$$

The lower the value of the index, higher would be the efficiency.

## Results and Discussion

### Garlic markets and marketing in Tamil Nadu

Garlic is used in varied food preparations like chutneys, pickles, curry powders, curried vegetables, meat and meat product preparations, tomato ketchup, etc., The raw garlic is also used in second generation products like garlic powder, garlic salt, garlic vinegar, garlic cheese croutons, garlic potato chips, garlic bread etc. It has also been extensively used as a popular remedy for various ailments and psychological disorders since vedic period.

Cost of seed cloves and labor for planting and harvest makes the initial investment for garlic production high in comparison to some other vegetable crops. Garlic returns are highly dependent on how the produce of crop is marketed. Management and markets will determine the profitability of garlic for the producer (Bachmann and Hinman, 2008). Properly cured or dried garlic can be stored for a period up to three months in a standard warehouse so as to make marketing decisions with respect to creation of time and place utility.

Directorate of Marketing and Inspection (Ministry of Agriculture and Co-operation, Government of India) documented more than 15 major wholesale agricultural produce assembling markets involved in garlic marketing in different states of India (Table 3.1).

Sl. No	Name of the State	Name of the markets	Number of markets	Percentage to total
01	Andhra Pradesh	Hyderabad and Nizamabad	02	09.52
02	Gujarat	Kondal	01	04.76
03	Himachal Pradesh	Bilaspur	02	09.52
02	Madhya Pradesh	Mandsaur, Neemuch, Ratlam,	07	33.33
03	Maharashtra	Mumbai	01	04.76
04	Tamil Nadu	Chennai, Mettupalayam and Vadugapatti	03	14.29
05	Uttar Pradesh	Eath, Farukhabad, Bhoagaon, Kuraoli	04	19.06
06	West Bengal	Bara Bazaar	01	04.76
	Total Number of Wholesale Markets		21	100.00

**Table 1:** Major garlic wholesale markets in India.

The above Table revealed that India is having 21 important organized assembling wholesale markets for garlic. Among these organized wholesale markets, large number of private and unorganized markets is functioning in all the major garlic producing states. These markets handle a significant quantum of garlic bulbs and acts as a wholesale market in those regions. One such market is functioning over a long period of time in Tamil Nadu is the Vadugapatti of Theni District and the other one is Mettupalayam market wherein the Nilgiris Cooperative Marketing Society, Mettupalayam is one of the institution facilitates garlic marketing and supplies to Vadugapatti also. Madhya Pradesh State is enriched with seven wholesale markets for garlic (33 Per Cent) followed by Uttar Pradesh had four Wholesale markets for garlic. All these markets contribute to the Vadugapatti garlic market.

### Wholesale garlic auction market at Vadugapatti

Vadugapatti is a small panchayat town located five kms away from the Horticultural College and Research Institute, Periyakulam and it is three km away from Periyakulam Town. Lack of essential market characteristics did not hinder this market to emerge as a hub for garlic marketing in South India due to its historical links and consistency in market functionaries.

### The history of Vadugapatti garlic market

While tracing the historical developments of this market, it is more than 150 years old market and started with sale of small quantity of

garlic. A group of people who cultivated garlic in and around Kodaikanal hills initially brought small quantity of garlic to Vadugapatti while they attended functions / visited relatives at Vadugapatti. At the same time, the labor force migrated from this village to Kodaikanal hills to be engaged in garlic (Malaippoondur) cultivation used to bring the garlic in gunny bags. The market intermediaries were able to trace back the possible quantity of sale a century ago, which would be around 50 to 70 tonnes a week. In recent times, this market has grown enormously and handling as high as 350 tonnes a week and about 50 wholesalers are involved in this market. Initially a small group of wholesalers are involved in this marketing as they had links with the garlic producers whom are relatives to them. However, this situation has been improving as one could find a mix of people engaged in the garlic wholesale marketing. This private market functions twice in a week. That is on Thursdays and Sundays.

### Marketing channels involved in the distribution of garlic

Marketing channel is defined as the path in which the produce travels from producer to the ultimate consumer through the involvement of intermediaries like wholesalers, commission agents and the traders. These details are analyzed in respect of garlic distribution and the same are presented in Table 2.

Table 2 revealed that the garlic marketing has commanded its distribution through six important channels. Among the six channels, the channel – I commands direct marketing in the local town area of Kodaikanal.

Sl.No	Channel number	Marketing channel prevalent in garlic marketing
01	I	Producers ? Consumers
02	II	Producers ? Commission Agent (Vadugapatti) ? Wholesaler Cum Retailers ? Retailers ? Consumers
03	III	Producers ? Commission Agent (Mettupalayam) ? Wholesaler Cum Retailers ?Retailers ? Consumers
04	IV	Producers ? Primary Wholesalers (Other States) ? Secondary Wholesalers (Vadugapatti) ? Wholesalers cum Retailers ? Retailers ? Consumers
05	V	Producer (China) ? Wholesaler cum Importers ?Commission Agents (Vadugapatti) ?Wholesaler cum Retailers ? Retailers ? Consumers
06	VI	Producers ? Primary Wholesalers ? Commission Agents (Vadugapatti) ? Wholesaler cum Retailers ? Retailers ?Consumers

**Table 2:** Marketing channels prevalent in distribution of garlic.

During the peak tourist arrival, the garlic is distributed directly to the consumers. The producers of Garlic from Kodaikanal send the garlic through the regular service so as to reach the same to the Vadugapatti market. The Commission Agents at Vadugapatti received the produce and conduct open auction on Thursdays and Sundays every week. The wholesalers cum Retailers used to attend the open auction and take the title of goods to their place and the same was distributed to the Retailers and Consumers. This channel is designated as Channel – II. The price spread in garlic marketing is analyzed and the results are presented in Table 4 and Table 5.

The Garlic imported from China is received by the Wholesalers cum Importers at Rajasthan and other states through Tibeth and the same are distributed to Vadugapatti, Tamil Nadu and the same was received by the Commission Agents cum Wholesalers of Garlic Merchants Association at Vadiugapatti and then it was subjected to open auction and other traders received the produce and are distributed to other pockets.

### Sources of supply of garlic to the Vadugapatti wholesale market

Garlic is procured from different parts of the state (Madhya Pradesh, Uttar Pradesh, Gujarat, Bihar and Himachal Pradesh) and also as imports from China through Nepal. Farmers also bring their produce to this market for sale. Wholesalers get seven per cent commission from the farmers and help them to sell their produce. Trucks are the main sources of transportation and in general trucks with 16 tonnes of capacity are employed for economic handling. Cost of transportation ranges from Rs 10 to 12 per kg depending upon the distance from the buying markets. Trucks take a long trip and reach the market yard a day prior to the auction and male laborers are actively engaged in unloading the garlic received from different states. A bag may weigh around 100 kg and the different types of packing materials like gunny, polythene and transparent nylon net bags are used. The quantity of garlic on an average supplied per annum to Vadugapatti wholesale market is analyzed and the details are presented in Table 3.

Sl. No	Sources of supply	Quantity supplied per annum in tonnes	Price per Kg	Percentage to total
01	Kodaikanal, Tamil Nadu	1912.000	90.00	64.33
02	Ooty, Coonoor, Tamil Nadu	244.000	70.00	08.21
02	Madhya Pradesh	288.000	80.00	09.69
03	Himachal Pradesh	192.000	80.00	06.46
04	Gujarat	096.000	60.00	03.23
05	Rajasthan	080.000	60.00	02.70
06	Other States	160.000	50.00	05.38
		2972.000	70.00	100.00

**Table 3:** Sources of supply of garlic to the Vadugapatti wholesale market.

Table 3 revealed that the garlic received to Vadugapatti wholesale market is from five important sources. The potential sources are Kodaikanal, The Nilgiris, Madhya Pradesh, Himachal Pradesh, Gujarat, Rajasthan and other states. The total quantity of garlic arrived to the Vadugapatti market is arrived at 2972 tonnes. Out of which 64 per cent of the supplies were made from Kodaikanal alone and the same is followed by the Nilgiris contributed only to the level of eight

per cent. Put together, the supply of garlic to the Vadugapatti wholesale market is arrived at 72 per cent and the remaining 28 per cent was contributed by different states like Himachal Pradesh, Madhya Pradesh, Gujarat and Rajasthan.

Immediately after the arrival, garlic bags are untied and the process of cleaning and grading is started for next day's sale. In general, female

laborers are engaged in cleaning. The cleaned whole and uniform garlic lots are displayed on the floor and kept ready for the bi-weekly auction.

### Grading and pricing of garlic in Vadugapatti wholesale market

Two types of garlic are dealt in the market in terms of its color. They are smoked and white. Among the types, there are different

grades of garlic starting from malformed, small, broken cloves to premium garlic. During the visit to Garlic Market during the first week and third week of December 2013, the price range for different grades and their price is analyzed and the details are presented in Table 4.

Sl. No	Name of the garlic grades	Garlic grade	Price range of grade per Kg
01	Kodaikanal – Malai Poondu	I	170 – 220
02	The Nilgris – Malai Poondu	II	140 – 160
03	Himachal Pradesh	IIIA	090 – 120
04	Himachal Pradesh	IIIB	080 – 100
05	Rajasthan and Gujarat	IVA	060 – 080
06	Rajasthan and Gujarat	IVB	050 – 060
05	Broken Cloves and Malformed	V	030 – 040

**Table 4:** Grading and pricing of garlic in Vadugapatti market.

Table 4 revealed that five grades of garlic is prevailing in the Vadugapatti Garlic wholesale market. Kodaikanal Malaippoondu was ranked as number one Grade and it is capable of fetching Rs 170 to 220 per kg. Though there were different grades available within the Malaippoondu, it is decided based on the size of the cloves. But the same was not discussed here as the wholesale market has different grades at national level. The Grade – II goes to the Nilgiris Malaippoondu which is less in size when compared to the Malaippoondu of Kodaikanal one and it is capable of fetching Rs 140 to Rs 160 in the wholesale market. The Garlic of Himachal Pradesh ranked three and allotted the Grade – III which is capable of fetching the price of Rs 80 to Rs 120 for two different grades viz., IIIA and IIIB and the Grade IV Garlic is drawn from Rajasthan and Gujarat which is priced at Rs 50 to 80 for two grades viz., IVA and IVB and the broken cloves and the malformed ones were priced at Rs 30 to Rs 40 and being

ranked the last grade. Every grade of Garlic has its own consumers and hence such grading is categorized and practiced.

Price information published by the AGMARKNET is based on Theni and Koyambedu (Chennai) reference markets for garlic in Tamil Nadu. However, the data consistency and periodicity are high for Theni Market. Theni market price must be influenced by the price prevailed in Vadugapatti Wholesale Garlic market.

### Price spread in garlic marketing

Price spread is said to be a composite of various costs incurred and margin of intermediaries in the various processes, such as those of assembling, processing, storage, transport and retailing. How these are varying between the identified marketing channels in respect of garlic marketing is analyzed and the results are presented in Table 5.

Sl. No	Particulars of Cost	Amount (Rs/Kg)	Per Cent
<b>Producer</b>			
01	Producers' Price	100.00	83.33
1.1	Marketing Cost		
1.1.1	Cleaning and Drying Charges	02.60	
1.1.2	Packing and Loading Charges	00.80	
1.1.3	Cost of Labor in Selling	16.00	
1.1.4	Miscellaneous Expenses	00.60	
	Marketing Cost at Producers' Level	20.00	16.67
1.2	Marketing Margin	00.00	
02	Consumer		

2.1	Sale Price to the Consumer	120.00	100.00
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**Table 5:** Price spread in garlic marketing through channel – I.

Table 5 revealed that the Channel – I is capable of offering the produce directly to the consumers. In this channel, the producer is able to get Rs 100 per kg of Garlic which is accounted for 83 per cent to the consumers' rupee. The remaining 17 per cent is incurred towards the marketing cost per kg of garlic. The farmer arranges the produce for direct selling in the town areas and he earns little income for immediate cash need. The remaining lots were released slowly to the Vadugapatti wholesale market established for the purpose. In the

marketing channel – II, the garlic is sent to the Vadugapatti wholesale market. The produce is received by the Commission Agent cum Wholesalers and then the wholesalers do the cleaning, grading and packing in gunnies and made available for the open auction on Thursdays and Sundays. The Wholesaler cum Traders from different places assemble the market on those days and bid the produce and take the title of goods to their locale for further distribution and sale (Table 6).

Sl. No	Particulars of Cost	Amount (Rs/Kg)	Per Cent
01	Producer		
01	Producers' Price	80.00	47.06
1.1	Marketing Cost		
1.1.1	Packing Charges	00.60	
1.1.2	Loading Charges	00.70	
1.1.3	Transportation Cost	08.30	
1.1.4	Miscellaneous Expenses	00.40	
	Marketing Cost at Producers' Level	10.00	05.88
1.2	Marketing Margin	10.00	05.88
02	Commission Agent		
2.1	Procurement Price by the Commission Agent	100.00	58.82
2.2	Marketing Cost		
2.2.1	Assembling Charges	02.50	
2.2.2	Auctioning Charges	02.00	
2.2.3	Miscellaneous Charges	01.50	
	Marketing Cost at Commission Agent cum Wholesaler Level	06.00	
2.3	Marketing Margin to the Commission Agent	14.00	08.24
03	Wholesaler cum Retailer		
3.1	Purchase Price Incurred by the Wholesaler cum Retailer	120.00	67.65
3.2	Marketing Cost		
3.2.1	Loading and Unloading Charges	03.00	
3.2.2	Transportation Charges	03.50	
3.2.3	Watch and Ward Charges	01.00	
3.2.4	Miscellaneous Cost	02.50	
	Marketing Cost to the Wholesaler cum Retailer	10.00	
3.3	Marketing Margin to the Wholesaler cum Retailer	20.00	11.76
3.4	Sale Price to the Retailer	150.00	85.29

04	Retailer		
4.1	Procurement Price by the Retailer	150.00	85.29
4.2	Marketing Cost to the Retailer		
4.2.1	Transportation Charges	03.00	
4.2.2	Miscellaneous Charges	02.00	
4.2	Marketing Cost to the Retailer	05.00	
	Marketing Margin to the Retailer	15.00	08.82
5	Sale Price to the Consumer and the Consumer's Price	170.00	100.00

**Table 6:** Price spread in garlic marketing through channel – II. Producers ? Commission agent (Vadugapatti) ? Wholesaler cum retailers ? Retailers ? Consumers.

Table 6 revealed that the producer is receiving Rs 80 per kg of garlic in the Channel – II while the consumer's price per kg of garlic is at Rs 170 which is accounted for 47 per cent. The wholesaler cum retailers' purchase price is arrived at Rs 120 per kg which is accounted for 67.65 per cent to the Consumer's rupee and the retailer takes the good at Rs 150 per kg and arranges to sell the garlic at Rs 170 per kg. Even at Vadugapatti market itself, the Commission Agent cum Wholesalers used to sell the produce locally at Rs 170 per kg.

With respect to marketing cost, the commission agent cum wholesaler does assembling and auctioning of the produce and incur Rs 6 per kg of garlic as marketing cost and the margin generated by

him was arrived at Rs 14 per kg. The wholesaler cum Retailer has incurred Rs 10 as marketing cost and taken the margin of Rs 20 per kg. Among different functionaries, the wholesaler cum retailer takes higher margin in distribution of garlic to the consumers.

### Marketing efficiency in garlic marketing

Marketing efficiency is defined as the ratio of output (Consumers' Price) to the input (Marketing Cost). In this study, the consumer price is varied from channel to channel and hence the same were worked out using the Kalkins Index and the results are presented in Table 7.

Marketing Channel	Value of Output (Consumers' Price)	Input (Marketing Cost )	Marketing Efficiency Ratio (O/I)
<b>Shepherd Method</b>			
I	120.00	20.00	06.00
II	170.00	31.00	05.48
<b>Kalkins Index</b>			
Marketing Channel	Marketing Margin	Marketing Cost	Marketing Efficiency
I	10.00	10.00	02.00
II	59.00	31.00	02.90

**Table 7:** Marketing efficiency in distribution of garlic.

Table 7 advocated that an increase in the marketing efficiency ratio would represent improved efficiency and vice versa. A reduction in the cost for the same level of satisfaction or an increase in satisfaction at a given cost would result in an improvement of efficiency. When comparing the data delineated in the Table 3.7 one could understand that the Channel – II found to be the efficient one. Because, the Channel – II fulfilled the requirements of several functionaries in the marketing channel and keep them satisfied.

### Garlic trading practices in India

Trading of Garlic included both import and export from India. In this section, the export of spices, import scenario of spices, export of

garlic and import of garlic into India and the state wise importers available in India are analyzed and the details are presented in this section.

### Export of spices from India

While discussing on the status of Garlic export, the overall status of spices need to be assessed as a prelude so that the percentage of garlic export on total spices trade could be understood and the special efforts can be taken to bridge the demand supply gap if any which will in turn facilitate minimizing the productivity gap. In this respect, the export of spices from India is analyzed and the results are presented in Table 8.

Sl. No	Particulars of spices	Quantity traded in lakh tonnes	Percentage to total
01	Garlic and Methi	19.61	27.01
02	Green Chilli	10.16	13.99
03	Dried Chillies	02.18	03.00
04	Red Chillies	01.45	02.00
05	Coriander Seed	07.26	10.00
06	Turmeric	02.90	03.99
07	Ginger	02.18	03.00
08	Betel Leaves	01.45	02.00
09	Cumin Seeds	01.45	02.00
10	Others	23.97	33.01
	Total	72.61	100.00

**Table 8:** Quantity of spices traded from India during 2012-13 (Source: NHM update – 2012-13).

Table 8 revealed that the quantity of spices traded from India is arrived at 72.61 lakh tonnes. Among this, Garlic and methi is accounted to be 27 per cent to the total export of spices followed by Green Chilli exported from India to the tune of 10.16 lakh tonnes which is accounted for 14 per cent to the total spices export from India. The third important commodity is Coriander seed which is exported to the tune of 7.26 lakh tonnes which is accounted for 10 per cent to the total spices export from India. Though there is scope for further promotion of export on spices, the Spices Board should conduct the study on enhancing the export potentials of spices from India through the Research and Development efforts with reputed firms involved in horticultural research especially the spices.

The status of Indian export and import of spices is further discussed in the ensuing section. When we compare the quantity of spices exported during 2002-03 and during the year 2011-12, an increase in the spices export is found to be to the level of 175 per cent in terms of quantity of spices exported and the export value during the same period is registered with 706 per cent increase (Table 9). The efforts taken by the Spices Board for enhancing such quantum jump in the export is commendable [4].

Sl.No	Year	Export quantity in thousand tonnes	Export value in crores	Import quantity in thousand tonnes	Import value in crores
01	2002-03	277.02	1635.49	121.28	586.44
02	2010-11	762.71	8043.47	113.38	1556.11
03	2011-12	931.26	13175.52	124.33	2102.17
% Change in 2011-2012 over 2002-03		(+) 175.33	(+) 705.60	(+) 02.51	(+) 258.46

**Source:** Agricultural Statistics at a Glance – 2012

**Table 9:** Indian export and import of spices during different periods.

Table 9 revealed that though the export is increased on one side, the import of spices which are essential for the Indian consumers is also found to be increased between the period 2002-03 and 2011-12 which is arrived at 2.50 per cent and the import value found to be increased to the tune of 258 per cent [5]. The import value of spices between these period is exorbitantly rose from the level of 586 crores is mainly due to the inflationary problems. It is true while examining the

quantity of spices imported and hence the Indian spices board should concentrate more on the need based spices to produce in the Indian environ to minimize the import of spices. Similarly, the researcher is interested in assessing the quantum of garlic imported in to India over a period of time is also important and hence these details are analyzed and the results are presented in Table 10.



Sl.No	Year	Quantity in tonnes	Value Rs in lakhs	Percentage to total spices import
01	2008-09	185.000	048.25	00.22
02	2009-10	125.000	073.50	00.18
03	2010-11	115.000	116.10	00.13
04	2011-12	310.000	220.05	00.28
05	2012-13	095.000	105.30	00.07
Percentage Change during 2012-13 over 2008-09		(-) 48.65	(+) 118.75	

**Table 10:** Quantity of garlic imported into India over a period of time (Spices Board, Cochin 2012).

Table 3.10 revealed that the garlic imported in to India is found to be decreased between the period 2008-09 and 2012-13 [6]. The quantity of garlic imported in to India showed a declining trend to the tune of 49 per cent. It is a good sign that India is progressing towards fulfilling the essential spice like garlic towards self-sufficiency. Thanks to the Spices Board and the Indian Farmers who have really dedicated to fulfill the nation's requirement in respect of Garlic. Though the import of Garlic in terms of value is on the increase, it is not burdening the nation due to smaller amount. However, the spices board in future should take active steps to reduce the import of spices and save the foreign exchange and the benefit of import should be

made available to the Indian farmers through announcement of better prices for the produce particularly the Garlic so that the farmers will be motivated to produce higher.

### Major exporting countries of garlic in the world

It is right time to assess the major countries who are exporting garlic in the globe. This information will reveal the status of which nation is leading in production of garlic so that the surplus quantity be exported to other countries. The details of export quantity country wise are analyzed and the results are presented in Table 11.

Sl. No	Name of the Country	Quantity Exported in Tonnes	Value of Export in	Sl. No
01	China	1254382.00	1222300.00	61.75
02	Argentina	89123.00	233406.00	11.79
03	Spain	66983.00	211638.00	10.69
04	Netherlands	17606.00	61706.00	03.12
05	France	12263.00	55374.00	02.80
06	Chile	10041.00	27590.00	01.39
07	Mexico	12221.00	23225.00	01.17
08	Italy	4380.00	20698.00	01.05
09	United States of America	6949.00	17544.00	00.89
10	Germany	3379.00	17309.00	00.87
11	Egypt	5656.00	11916.00	00.60
12	United Kingdom	3154.00	8138.00	00.41
13	India	6916.00	7820.00	00.40
14	Other Countries	49885.00	60715.00	03.07
	World Total	1542938.00	1979379.00	100.00

**Table 11:** Major exporting countries of garlic in the world during 2011; source : UN comtrade.

Table 11 revealed that there were several countries exporting garlic. Total garlic exporting countries is found to be more than 100 nations across the globe. However, special effort has been taken to assess the top 10 nations contributing higher quantity of export of garlic to

different nations. Among the Garlic exporting nations, China is the leader capable of exporting 12.54 lakh tonnes of garlic to the total garlic export which is arrived at 62 per cent. Second place goes to Argentina which is capable of exporting 0.89 lakh tonnes which is

accounted for 11.80 per cent to the total export. Third rank goes to Spain in terms of exporting garlic to different nations. Spain has exported 0.67 lakh tonnes which is accounted for 10.69 per cent to the total export of garlic in the globe.

In terms of exporting of Garlic, India is ranked in 13th place capable of exporting to the tune of 0.50 lakh tonnes which is accounted for 0.40 per cent to the total global export in garlic. Though it is too low, India should take appropriate efforts to enhance the productivity in Garlic and the export share should be increased. India should learn the progressiveness of China on Garlic production and export and the same should be infused in the Indian context to reach the level of number one nation in garlic export. The area expansion,

technology adoption, technology dissemination are the important areas the Indian institutions should take on large scale.

### Importers of garlic in India

The exporters and the importers are the pillars in meeting the national needs of any commodity. Unless the people will face lot of difficulties for basic products like food, wood, fiber, fuel and other associated products. The exporters are of product specific or food commodity specific, spices specific and other non-edible and engineering product related traders. In our study, the importers state wise spread over in the length and breadth of our nation is analyzed and the results are documented in Table 12.

Sl. No	Name of the State	Number of Importers	Percentage to Total
01	Andhra Pradesh	02	06.06
02	Gujarat	08	24.24
03	Madhya Pradesh	02	06.06
04	Maharashtra	05	15.15
05	Rajasthan	03	09.09
06	Tamil Nadu	07	21.22
07	Uttar Pradesh	01	03.03
08	New Delhi	02	06.06
09	West Bengal	02	06.06
10	Karnataka	01	03.03
	Total	33	100.00

Table 12: State wise importers of garlic in India.

Table 12 revealed that there were 33 importers who are involved in importing the garlic into India whom is spread over in 10 different states. The State of Gujarat had eight importers followed by Tamil Nadu is blessed with Seven importers who are actively involved in importing the garlic in to India. During the year 2012-13, only 95 tonnes of garlic have been imported into India due to the policy measures with India. India has restricted the import quantities to the greater extent and permits only the most essential one. During the year 2011-12, the garlic import was pegged at 310 tonnes and the Government of India has restricted the same and they imposed the conditions to the importers to restrict the garlic import.

### Summary and Conclusions

In respect of markets, India is having 21 important organized assembling wholesale markets for garlic. Among these organized wholesale markets, large number of private and unorganized markets is functioning in all the major garlic producing states. These markets handle a significant quantum of garlic bulbs and acts as a wholesale market in those regions. One such market is functioning over a long period of time in Tamil Nadu is the Vadugapatti of Theni District.

The garlic marketing has commanded its distribution through six important channels. Among the six channels, the channel – I commands direct marketing in the local town area of Kodaikanal.

During the peak tourist arrival, the garlic is distributed directly to the consumers. The producers of Garlic from Kodaikanal send the garlic through the regular service so as to reach the same to the Vadugapatti market. The Commission Agents at Vadugapatti received the produce and conduct open auction on Thursdays and Sundays every week. The wholesalers cum Retailers used to attend the open auction and take the title of goods to their place and the same was distributed to the Retailers and Consumers.

The garlic received to Vadugapatti wholesale market is from five important sources. The potential sources are Kodaikanal, The Nilgiris, Madhya Pradesh, Himachal Pradesh, Gujarat, Rajasthan and other states. Five grades of garlic is prevailing in the Vadugapatti Garlic wholesale market. Kodaikanal Malaippoondur was ranked as number one Grade and it is capable of fetching Rs 170 to 220 per kg.

When we compare the quantity of spices exported during 2002-03 and during the year 2011-12, an increase in the spices export is found to be to the level of 175 per cent in terms of quantity of spices exported and the export value during the same period is registered with 706 per cent increase. Though the export is increased on one side, the import of spices which are essential for the Indian consumers is also found to be increased between the period 2002-03 and 2011-12 which is arrived at 2.50 per cent and the import value found to be increased to the tune of 258 per cent. The quantity of garlic imported in to India showed a declining trend to the tune of 49 per cent. It is a good sign that India is

progressing towards fulfilling the essential spice like garlic towards self sustainability.

## Recommendations

The Vadugapatti wholesale garlic market is suffering from space constraints and the road infrastructure also needs a top priority and hence the Town Panchayat of Vadugapatti can explore the possibilities of creating integrated storage cum market yard for garlic separately with the support of Garlic Merchants Association, Vadugapatti.

The Farmers' Retail Market in the foot hill town may be established for the producer-consumer advantage by establishing Commodity Interest Groups and the CIGs can run the retail outlet on their own for higher percentage share by minimizing the role of middlemen in the name of product specific outlet (Spices Retail Outlet) and the Fruits and Vegetable Store on the lines of Pazhamudhir Nilayams established

in different cities which had been accepted by all sections of the consumers and hence the same may be practiced in the foot hill towns.

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