

Supply chain management and marketing efficiency of onion

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ABSTRACT

Most of the onion produced in India comes from the states of Maharashtra, Gujarat, Uttar Pradesh and Karnataka though onion is also grown in Orissa, Tamil Nadu, Madhya Pradesh, Andhra Pradesh and Bihar. The quality of onion produce brought to the market by the farmers varies considerably from lot to lot. It is therefore highly essential to grade the produce brought to the market on scientific lines to get remunerative prices. This paper looks into these aspects of supply chain management in onion. Supply chain management refers to the management of the entire set of production, distribution and marketing processes by which a consumer is supplied with a desired product. The present study attempts to examine the market functions, marketing practices, value chain from the farmer to consumer in terms of handling, value addition, packaging, marketing cost, marketing margin and price spread for onion in Dindigul and Perambalur districts of Tamil Nadu in India.

Keywords: Supply chain management; value addition; market margin; marketing cost; price spread

INTRODUCTION

Supply chain management (SCM) refers to the management of the entire set of production, distribution and marketing processes by which a consumer is supplied with a desired product (Parimalarangen et al 2011). Marketing channel is referred as a path over which a commodity would pass as it moves from the farmers to the hands of the consumers. The length of the channel varies from commodity to commodity depending on the quantity to be moved, the form of consumer demand and degree of regional specialization in production as reported by Acharya and Agarwal (2009).

Onion is cultivated on 50,000 acres in Tamil Nadu. Though the onion requirement for Tamil Nadu is 7 lakh tonnes per year, the state produces only 3 lakh tonnes (Kolappan 2019).

The studies have found that producer's share in consumer's rupee is comparatively lower for perishable crops. Poor efficiency in the marketing channels and inadequate marketing infrastructure are

believed to be the causes of not only high and fluctuating product prices but also too little of the consumer's rupee realized by the farmer.

METHODOLOGY

In Tamil Nadu, Dindigul and Perambalur districts formed the study area. These two districts were purposively selected for the present study taking into consideration the maximum area under onion. In this study area, the commission agents played a major role in marketing of onion in Dindigul, Ottanchatram and Trichy markets (Kaul 1997). To find out the supply chain management at producer's level, a total of 120 sample respondents were selected which included 60 farmers and 60 intermediaries selected using random sampling procedure. The primary data were collected through personal interview method from the farmers and intermediaries with the help of a well-structured schedule.

Conventional analysis

Simple averages and percentages were worked out to analyze the reason for growing particular

variety, source of purchasing inputs, reasons for choosing particular shop, practice and criteria for grading at farm level, packaging materials used, means of transport, preference of market, marketing cost and problems. From traders, information on reasons for purchase from particular farmers, specifications before purchasing the commodity, facilities provided and problems faced was collected.

Price spread

Price spread in general is referred to as difference between price paid by the consumer and that received by the grower as per an equivalent unit of the commodity (Sidhu et al 2010). Price spread analysis estimates the share of different market functionaries in the consumer's rupee and this would facilitate the understanding of the relative efficiencies (Gadre et al 2012). Price spread was calculated using the following formula:

$$\text{Price spread} = \text{Consumer's price} - \text{Producer's price}$$

Market efficiency

Market efficiency is the degree of market performance. The movement of goods from producers to the ultimate consumers at the lowest possible cost consistent with the provision of services desired by the consumers is termed as efficient marketing (Murthy et al 2014).

The economic efficiency of markets was calculated with the help of marketing costs, margins and price spread by employing Shepherd's formula (Ramesh 2016):

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

where ME= Index of market efficiency, V= Value of goods sold or price paid by the consumer, I= Total marketing cost or marketing cost per unit

Hence effectiveness of market to perform various functions is considered as marketing efficiency.

RESULTS and DISCUSSION

Value chain starts from farmers' activities to the end with consumers of the produce. Good agricultural practices and maturity at harvest are the most important determinants of value chain because these are important for storage life and final quality of the produce.

Preference for cultivating a particular variety

The preference for growing a particular variety as perceived by the farmers was analyzed and the results are presented in the Table 1.

The farmers preferred to grow particular variety because of physical characters such as size, shape and freshness accounting for 71.1 and 100.00 per cent among the sample farmers of small and Bellary onion respectively. It was noted that 93.3 per cent of the farmers preferred pungency character for growing both types of onion. Total 93.3 per cent of small onion farmers opined that they preferred the high yielding character of the variety in short period of 85-90 days as compared to Bellary which needed 110-120 days duration. It was found that 46.7 per cent of the farmers each preferred the keeping quality and pest and disease resistance of Bellary onion. Compared to small onion, Bellary onion was preferred for high resistance to pests and diseases.

Source of planting material

Most of the farmers (88.3%) used their own planting material for next crop production; 21.7 per cent of the farmers purchased from private agencies. Generally farmers were purchasing seed material from the commission agents on credit basis and repayed after the harvest of the crop. Only 1.7 per cent farmers preferred to purchase from the government agencies (Table 2). They stored the bulbs in Pattarai (bamboo storage) for further seed purpose. But during the period of higher price and more demand in the market, they sold the onion immediately and purchased the seed material from private agencies whenever required.

Onion grading practices at farm level

Generally the Bellary onion farmers were practicing grading at farm level itself by size, separating very small sized onion in separate gunny bags. It was essential to grade the produce brought to the market to get remunerative prices. Only 25 per cent farmers had been grading the produce before marketing (Table 3). Rest 75 per cent were not doing so; they just removed the decayed bulbs from the fresh ones in the harvested lot and from stored onion before packing in gunny bags.

Storage of onion

The major factors influencing storage of onion are market price, economic condition of the farmers, government support by way of subsidy for storage

Table 1. Preference for growing a particular onion variety

Character	Small onion (n= 45)		Bellary onion (n= 15)	
	Number of respondents	Percentage	Number of respondents	Percentage
Physical appearance	32	71.1	15	100.0
Pungency	42	93.3	14	93.3
High yielding	42	93.3	13	86.7
Drought resistant	11	24.4	11	73.3
Keeping quality	7	15.6	7	46.7
Pest and disease resistance	2	4.4	7	46.7

Table 2. Source of planting material of onion

Source	Respondents	
	Number	Percentage
Own seed farm	53	88.3
Private agencies	13	21.7
Neighbourers	6	10.0
Government	1	1.7

Table 3. Onion grading practices at farm level

Practicing grading	Respondents	
	Number	Percentage
Yes	15	25
No	45	75
Total	60	100

structures etc. The stored onion is better preferred in the market and also fetches better price as compared to fresh onion. Usually Bellary onion farmers were practicing storage of the product in bamboo storage Pattarai and also in modern storage structures built of concrete walls and bricks. Table 4 shows that 25.0 per cent of total farmers, mainly the Bellary onion farmers had been practicing storage up to 6 months at the farm itself before marketing; 8.3 per cent were selling the product immediately in the market after harvest and 66.7 per cent small onion farmers were storing the product for 1 to 7 days before selling in the market.

Preference for marketing place

The data presented in Table 5 show that Dindigul farmers preferred to sell onion both in the

local as well as distant markets of Dindigul, Ottanchatram and Perambalur. It was found that 25 per cent of the farmers preferred to sell their produce in the local market whereas 75 per cent preferred to sell in distant markets.

Means of transport

Farmers used different means of transportation to visit the market with their produce (Table 6). These were lorries, tempo vans and bullock carts. Most used means of transport was lorry (50%) followed by tempo van (40%) and only 10 per cent used bullock carts.

Marketing cost and price spread

The marketing cost varies with the distance. Hence marketing cost was worked out separately for

Table 4. Duration of storage of the produce before marketing

Practice	Respondents	
	Number	Percentage
Stored for 1-7 days (small onion)	40	66.7
Stored for 4-6 months (Bellary onion)	15	25.0
Sale immediately after harvest	5	8.3
Total	60	100.0

Table 5. Preference for marketing place for onion

Market	Number of respondents			Percentage
	Dindigul		Perambalur	
	Dindigul	Ottanchatram		
Local market	3	12	0	25
Distant market	12	3	30	75
Total	15	15	30	100

Table 6. Means of transport used for transporting onion

Type of transport	Number of respondents		Percentage
	Dindigul	Perambalur	
Bullock cart	6	0	10
Tempo van	24	0	40
Lorry	0	30	50
Total	30	30	100

each market. Price spread is one of the important measures of market efficiency which indicates the share of the producer in the consumer's rupee. In case of onion it included the cost of marketing functions such as transportation, weighing, loading and unloading, storage, processing etc. The price spread for different marketing channels of onion for small and Bellary onion was studied. The commission agent played a major role in marketing of onion in Dindigul, Ottanchatram and Trichy markets.

Dindigul district

In Dindigul market, two channels were prevailing in marketing of onion.

These channels were classified as Dindigul channel I and Dindigul channel II.

Dindigul market channel I: The price spread of onion in Dindigul channel I is presented in Table 7. In this channel, producers, commission agents, wholesalers, retailers and consumers participated in the process of marketing.

Producer - Commission agent - Wholesaler - Retailer - Consumer

The average gross price received by the producer was Rs 725.00 and 987.00 per bag for small and Bellary onion respectively. The net price received by them per bag was only Rs 630.50 and 866.30 for small onion and Bellary onion respectively. The magnitude of marketing cost incurred by small onion growers amounted to Rs 94.50 per bag of onion or 9.3 per cent of the consumer's price. The marketing cost

Table 7. Price spread of onion for Dindigul market channel I (Rs/bag of 80 kg)

Component	Small onion		Bellary onion	
	Cost	per cent	Cost	per cent
Farmer				
Gross price received	725.00	71.1	987.00	74.8
Transport cost (20- 45 km)	20.00	2.0	20.00	1.5
Packing	0.00	0.0	0.00	0.0
Loading/unloading	2.00	0.2	2.00	0.2
Commission (10%)	72.50	7.1	98.70	7.5
Weighing charges	0.00	0.0	0.00	0.0
Spoilage	0.00	0.0	0.00	0.0
Marketing cost	94.50	9.3	120.70	9.1
Net price received	630.50	61.8	866.30	65.6
Wholesaler				
Purchase price	725.00	71.1	987.00	74.8
Transport cost (20-50 km)	24.00	2.4	24.00	1.8
Packing charges (gunny bag)	12.00	1.2	12.00	0.9
Loading/unloading	4.00	0.4	4.00	0.3
Toll charges	0.00	0.0	0.00	0.0
Weighing charge	0.00	0.0	0.00	0.0
Spoilage (2-3 kg/bag)	16.00	1.6	16.00	1.2
Marketing cost	56.00	5.5	56.00	4.2
Margin	59.00	5.8	117.00	8.9
Sale price	840.00	82.4	1160.00	87.9
Retailer				
Purchase price	840.00	82.4	1160.00	87.9
Transport cost (10-12 km)	12.00	1.2	12.00	0.9
Packing charges	0.00	0.0	0.00	0.0
Loading/unloading	6.00	0.6	6.00	0.5
Toll charges	0.00	0.0	0.00	0.0
Weighing charges	0.00	0.0	0.00	0.0
Spoilage	10.00	1.0	10.00	0.8
Marketing cost	28.00	2.7	28.00	2.1
Margin	152.00	14.9	1,32.00	10.0
Sale price	1,020.00	100.0	1,320.00	100.0
Price paid by the consumer	1,020.00	100.0	1,320.00	100.0
Price spread	295.00	-	333.00	25.2

incurred for Bellary onion amounted to Rs 120.70 and it accounted for 9.1 per cent of the consumer's price.

Among the various costs incurred by the onion growers, commission charges accounted for the major share of 7.1 and 7.5 per cent for small and Bellary onion respectively. The transport cost was calculated as Rs 20.00 per bag of 80 kg for an average distance of 45 km. The transport cost constituted the share of 2.0 and 1.5 per cent of the consumer's price for small and Bellary onion respectively. The total cost incurred by wholesalers for small and Bellary onion was Rs 56.00 per bag. Among these, transport cost and

spoilage loss were the major items of costs accounting for Rs 24.00 and 16.00 per bag respectively.

The expenses incurred by retailer for marketing were Rs 28.00 per bag. Among these, transport charges and spoilage loss were the major shares amounting to Rs 12.00 and 10.00 respectively. The average price paid by the consumers was Rs 1,020.00 per bag for small and Rs 1,320.00 per bag for Bellary onion respectively.

Dindigul market channel II: The price spread of onion in Dindigul channel II is presented in Table 8. In

Table 8. Price spread of onion for Dindigul market channel II (Rs/bag of 80 kg)

Component	Small onion		Bellary onion	
	Cost	per cent	Cost	per cent
Farmer				
Gross price received	725.00	78.4	987.00	79.0
Transport cost (20- 45 km)	20.00	2.2	20.00	1.6
Packing	0.00	0.0	0.00	0.0
Loading/unloading	2.00	0.2	2.00	0.2
Commission charge (10%)	72.50	7.8	98.70	7.9
Weighing charges	0.00	0.0	0.00	0.0
Spoilage	0.00	0.0	0.00	0.0
Marketing cost	94.50	10.2	120.70	9.7
Net price received	630.50	68.2	866.30	69.3
Retailer				
Purchase price	725.00	78.4	987.00	79.0
Transport cost (12-15 km)	10.00	1.1	10.00	0.8
Packing charges (gunny bag)	12.50	1.4	12.50	1.0
Loading/unloading	6.00	0.6	6.00	0.5
Toll charges	0.00	0.0	0.00	0.0
Cleaning	1.00	0.1	1.00	0.1
Spoilage (2-3 kg/bag)	16.00	1.7	16.00	1.3
Marketing cost	45.50	4.9	45.50	3.6
Margin	154.50	16.7	217.50	17.4
Sale price	925.00	100.0	1250.00	100.0
Price paid by the consumer	1020.00	100.0	1320.00	100.0
Price spread	200.00	21.6	263.00	21.0

this channel producers, commission agents, retailers and consumers participated in the process of marketing.

Producer - Commission agent - Retailer - Consumer

In this channel the average gross price received by the producer was Rs 725.00 and 987.00 per bag for small and Bellary onion respectively. The net price received by them per bag was only Rs 630.50 and 866.30 for small onion and Bellary onion respectively. The magnitude of marketing cost incurred by small onion growers amounted to Rs 94.50 per bag of onion or 10.2 per cent of the consumer price. The marketing cost incurred for Bellary onion amounted to Rs 120.70 that accounted for 9.7 per cent of the consumer's price.

In this channel retailers purchased the onion directly from the commission agents. Thus there was reduction of handling expenses and margin of wholesalers in this channel. The expenses incurred by retailers for marketing was Rs 45.50 per bag. Among

these transportation charges and spoilage loss were the major shares amounting to Rs 10.00 and 16.00 respectively. The transport cost and spoilage are higher when the retailer purchases directly from the commission agent because of larger distance and handling of the product by themselves.

The average price paid by the consumer was Rs 925.00 per bag for small onion and Rs 1,250.00 for Bellary onion. Thus the average consumer price was lesser than channel I. The price spread was calculated as 200.00 and 263.00 per bag for small and Bellary onion respectively.

Ottanchatram market

In Ottanchatram market, two channels prevailed in marketing of onion which are classified as Ottanchatram channel I and Ottanchatram channel II.

Ottanchatram channel I: In this channel producers, commission agents, wholesalers, retailers and consumers participated in the process of marketing (Table 9):

Table 9. Price Spread of onion for Ottanchatram market channel I (Rs/bag of 80 kg)

Component	Small onion		Bellary onion	
	Cost	per cent	Cost	per cent
Farmer				
Gross price received	920.00	82.1	1,096.00	80.6
Transport cost (5-15 km)	10.00	0.9	10.00	0.7
Packing	0.00	0.0	0.00	0.0
Loading/unloading	2.00	0.2	2.00	0.1
Entry fees	0.60	0.1	0.60	0.0
Commission (10%)	92.00	8.2	109.60	8.1
Spoilage	0.00	0.0	0.00	0.0
Marketing cost	104.60	9.3	122.20	9.0
Net price received	815.40	72.8	973.80	71.6
Wholesaler				
Purchase price	920.00	82.1	1,096.00	80.6
Transport cost (25-100 km)	35.00	3.1	35.00	2.6
Packing charges (gunny bag)	10.00	0.9	10.00	0.7
Loading/unloading	6.00	0.5	6.00	0.4
Weighing and labour work	2.00	0.2	2.00	0.1
Spoilage (2-3 kg/bag)	22.00	2.0	22.00	1.6
Marketing cost	75.00	6.7	75.00	5.5
Margin	55.00	4.9	69.00	5.1
Sale price	1,050.00	93.8	1,240.00	91.2
Retailer				
Purchase price	1,050.00	93.8	1,240.00	91.2
Transport cost (10-12 km)	15.00	1.1	15.00	0.9
Packing	0.00	0.0	0.00	0.0
Loading/unloading	3.00			
0.5	3.00	0.4		
Toll charges	0.00	0.0	0.00	0.0
Weighing charges	0.00	0.0	0.00	0.0
Spoilage (0.5-1 kg)	12.00	0.9	12.00	0.7
Marketing cost	30.00	2.5	30.00	2.1
Margin	42.00	3.8	92.00	6.8
Sale price	1,120.00	100.0	1,360.00	100.0
Price paid by the consumer	1,120.00	100.0	1,360.00	100.0

Producer - Commission agent - Wholesaler - Retailer - Consumer

In this case the average gross price received by the producer was Rs 920.00 and 1,096.00 per bag and the net price received by them per bag was only Rs 815.40 and 973.80 for small and Bellary onion respectively.

The marketing cost incurred by small onion growers amounted to Rs 104.60 per bag of onion or 9.3 per cent of the consumer's price. The marketing cost incurred for Bellary onion amounted to Rs 122.20 or 9.0 per cent of the consumer's price. Among the various costs, commission charges accounted for the

major share of 8.2 and 8.1 per cent for small and Bellary onion respectively. The transport cost was Rs10.00 per bag of 80 kg for an average distance of 15 km. The transport cost constituted the share of 0.9 and 0.7 per cent of the consumer's price for small and Bellary onion respectively.

The total cost, transport cost and spoilage loss incurred by the wholesalers and retailers were same for both types of onion. Total cost incurred by wholesalers for small and Bellary onion was Rs 75.00 per bag. Among these, transport cost and spoilage loss were the major items of costs accounting for Rs 35.00 and 22.00 per bag respectively. The expenses incurred by retailer for marketing were Rs 30.00 per bag. The

Table 10. Price spread of onion for Ottanchatram market channel II (Rs/bag of 80 kg)

Component	Small onion		Bellary onion	
	Cost	per cent	Cost	per cent
Farmer				
Gross price received	920.00	85.2	1,096.00	85.0
Transport cost (5-15 km)	10.00	0.9	10.00	0.8
Packing	0.00	0.0	0.00	0.0
Loading/unloading	2.00	0.2	2.00	0.2
Entry fees	0.60	0.1	0.60	0.0
Commission (10%)	92.00	8.5	109.60	8.5
Spoilage	0.00	0.0	0.00	0.0
Marketing cost	104.60	9.7	122.20	9.5
Net price received	815.40	75.5	973.80	75.5
Retailer				
Purchase price	920.00	85.2	1,096.00	85.0
Transport cost (15-25 km)	18.00	1.7	18.00	1.4
Packing charges (gunny bag)	12.00	1.1	12.00	0.9
Loading/unloading	6.00	0.6	6.00	0.5
Weighing and labour work	2.00	0.2	2.00	0.2
Spoilage (2-3 kg/bag)	22.00	2.0	22.00	1.7
Marketing cost	60.00	5.6	60.00	4.7
Margin	100.00	9.3	134.00	10.4
Sale price	1,080.00	100.0	1,290.00	100.0
Price paid by the consumer	1,080.00	100.0	1,290.00	100.0
Price spread	160.00	14.8	194.00	15.0

transport charges and spoilage loss were the major shares amounting to Rs 15.00 and 12.00 respectively. The average price paid by the consumer was Rs 1,120.00 per bag for small onion and Rs 1,360.00 per bag for Bellary onion respectively.

Ottanchatram channel II

The price spread of onion in Ottanchatram channel II is presented in Table 10. In this channel producers, commission agents, retailers and consumers participated in the process of marketing.

Producer - Commission agent - Retailer - Consumer

The average gross price received by the producer was Rs 920.00 and Rs 1,096.00 per bag and net price received per bag was only Rs 815.40 and 973.80 for small and bellary onion respectively. The marketing cost incurred by small onion growers amounted to Rs 104.60 per bag of onion or 9.7 per cent of the consumer's price and it was Rs 122.20 or 9.5 per cent for Bellary onion. In this channel retailers purchased the onion directly from the commission agents. Thus there was reduction in handling expenses and margin of wholesalers in this channel. The total

cost, transport cost and spoilage loss incurred by the retailers were same for both types of onion. The expenses incurred by retailer for marketing were Rs 60.00 per bag.

Among these transport charges and spoilage loss were the major shares amounted to Rs 18.00 and 22.0 respectively. The transport cost and spoilage were higher when the retailers purchased directly from the commission agents because of higher transport distance and handling of the product by them.

The average price paid by the consumers was Rs 1,080.00 for small and Rs 1,290.00 per bag for Bellary onion respectively. Thus the average consumer's price was lesser than channel I. The price spread was calculated as 160.00 and 194.00 per bag for small and Bellary onion respectively.

Trichy market (Perambalur)

Farmers in and around Perambalur area were selling their produce in Trichy market. There were two channels prevailing in Trichy market. These were classified as Trichy channel I and Trichy channel II.

Table 11. Price spread of small onion for Trichy (Perambalur) market channel I (Rs/bag of 80 kg)

Component	Small onion	
	Cost	per cent
Farmer		
Gross price received	500.00	67.6
Transport cost (25-45 km)	18.00	2.4
Packing	0.00	0.0
Loading/unloading	1.00	0.1
Commission charges (7%)	35.00	4.7
Weighing charges	1.00	0.1
Spoilage	0.00	0.0
Marketing cost	55.00	7.4
Net price received	445.00	60.1
Wholesaler		
Purchase price	500.00	67.6
Transport cost (50-75 km)	22.00	3.0
Packing charge (gunny bag)	15.00	2.0
Loading/unloading	4.00	0.5
Weighing and labour work	0.00	0.0
Spoilage (2-3 kg/bag)	12.00	1.6
Marketing cost	53.00	7.2
Margin	67.00	9.1
Sale price	620.00	83.8
Retailer		
Purchase price	620.00	83.8
Transport cost (10-12 km)	15.00	2.0
Packing	0.00	0.0
Loading/unloading	2.50	0.3
Toll charges	0.00	0.0
Weighing charges	0.00	0.0
Spoilage (0.5-1 kg/bag)	6.00	0.8
Marketing cost	23.50	3.2
Margin	96.50	13.0
Sale price	740.00	100.0
Price paid by the consumer	740.00	100.0
Price spread	240.00	

Trichy channel I: The price spread of onion in Trichy channel I is presented in Table 11. In this channel producers, commission agents, wholesalers, retailers and consumers participated.

Producer - Commission agent - Wholesaler - Retailer - Consumer

The market existed only for small onion in this market. The average gross price received by the producers was Rs 500.00 and the net price received per bag was only Rs 445.00. The magnitude of marketing cost incurred by growers amounted to Rs 55.00 per bag or 7.4 per cent of the consumer's price.

Among the various costs incurred by the growers, commission charges were Rs 35.00 with a share of 4.7 per cent. The transport cost was Rs 18.00 per bag of 80 kg for an average distance of 45 km and it was 2.4 per cent of the consumer's price. The total cost incurred by wholesalers was Rs 53.00 per bag. Among these transport cost and spoilage loss were the major items of costs accounting for Rs 22.00 and 12.00 per bag respectively. The expenses incurred by retailer for marketing were Rs 23.50 per bag. Among these transport charges and spoilage loss were the major shares amounting to Rs 15.0 and 6.0 respectively. The average price paid by the consumer was Rs 740.00 per bag.

Table 12. Price spread of small onion for Trichy (Perambalur) channel II market (Rs/bag of 80 kg)

Component	Small onion	
	Cost	per cent
Farmer		
Gross price received	500.00	73.5
Transport cost (25-45 km)	18.00	2.6
Packing	0.00	0.0
Loading/unloading	1.00	0.1
Commission (7%)	35.00	5.1
Weighing charges	1.00	0.1
Spoilage	0.00	0.0
Marketing cost	55.00	8.1
Net price received	445.00	65.4
Retailer		
Purchase price	500.00	73.5
Transport cost (10-25 km)	16.00	2.4
Packing charge (gunny bag)	15.00	2.2
Loading/unloading	5.00	0.7
Weighing and labour work	0.00	0.0
Spoilage (2-3 kg/bag)	12.00	1.8
Marketing cost	48.00	7.1
Margin	132.00	19.4
Sales price	680.00	100.0
Price paid by the consumer	680.00	100.0
Price spread	180.00	26.5

Trichy channel II: In this channel (Table 12) producers, commission agents, retailers and consumers participated in the process of marketing.

Producer - Commission agent - Retailer - Consumer

The average gross price received by the producers was Rs 500.00 per bag. The net price received by them per bag was only Rs 445.00. The magnitude of marketing cost incurred by growers amounted to Rs 55.00 per bag or 8.1 per cent of the consumer's price.

In this channel retailers purchased the onion directly from the commission agents. Thus there was reduction in handling expenses and margin of wholesalers. The expenses incurred by retailers for marketing were Rs 48.00 per bag. Among these transport charges and spoilage loss were the major shares amounting to Rs 16.00 and 12.00 respectively. The transport cost and spoilage were higher when the retailers purchased directly from the commission agents because of

higher transport distance and handling of the products by them. The average price paid by the consumers was Rs 680.00 per bag. Thus the average consumer price was lesser than channel I. The price spread was calculated as Rs 180.00.

Marketing cost incurred in different channels of onion

The cost incurred by marketing intermediaries in marketing was worked out and the results are presented in Table 13. The average marketing cost of intermediaries was highest in Ottanchatram channel I with Rs 209.60 and 227.20 per bag followed by Dindigul channel I with Rs 178.50 and 204.70 per bag for small and Bellary onion respectively. The same was lowest in Trichy market channel II with Rs 103.00. The marketing cost was higher in Ottanchatram because of high transportation cost for both farmers and traders, entry fees, higher commission charges and loading and unloading charges in this market. In Trichy market only 7 per cent of the total sale price was collected as commission as compared to 10 per cent in other two markets.

Table 13. Marketing cost of intermediaries for small and Bellary onion (Rs/bag of 80 kg)

Cost incurred by	Dindigul market				Ottanchatram market				Trichy market	
	Channel I		Channel II		Channel I		Channel II		Channel I	Channel II
	Small	Bellary	Small	Bellary	Small	Bellary	Small	Bellary	Small	Small
Producer	94.50	120.70	94.50	120.70	104.60	122.20	104.60	122.20	55.00	55.00
Wholesaler	56.00	56.00	-	-	75.00	75.00	-	-	67.00	-
Retailer	28.00	28.00	45.50	45.50	30.00	30.00	60.00	60.00	23.50	48.00
All intermediaries	178.50	204.70	140.00	166.20	209.60	227.20	164.60	182.20	145.50	103.00

Table 14. Marketing margin of intermediaries in different channels of small and Bellary onion (Rs/bag of 80 kg)

Margin of	Dindigul market				Ottanchatram market				Trichy market	
	Channel I		Channel II		Channel I		Channel II		Channel I	Channel II
	Small	Bellary	Small	Bellary	Small	Bellary	Small	Bellary	Small	Small
Wholesaler	59.00	117.00	-	-	55.00	69.00	-	-	67.00	-
Retailer	152.00	132.00	154.50	217.50	40.00	90.00	100.00	134.00	96.50	132.00
All Intermediaries	211.00	249.00	154.50	217.50	95.00	159.00	100.00	134.00	163.50	132.00

Marketing margin of intermediaries of onion

The market margin of the intermediaries in onion marketing (Table 14) was found to be highest in channel I of Dindigul with Rs 211.00 and 249.00 for small and Bellary onion respectively followed by Trichy channel I for small onion with Rs 163.50 per bag. The market margin was found to be lowest in Ottanchatram market with Rs 95.00 for small onion in channel I and Rs 134.00 for Bellary onion in channel II.

Farmer's share in consumer's rupee

The farmer's share in the consumer's price of onion varied between 60.10 to 75.50 per cent (Table 15). It was found to be higher in Channel II of all the three markets (Dindigul, Ottanchatram and Trichy) than channel I because of direct purchase of onion by retailers from commission agents. But this type of marketing channel was not common. More than 70 per cent of onion was marketed through wholesalers to retailers from commission agents. Therefore channel I was important for getting better idea about farmer's share in consumer's rupee. The farmer's share was found to be highest in channel II of Ottanchatram market with 75.5 per cent for both small onion and Bellary onion. This was followed by Dindigul market channel II with 69.3 per cent for small onion. Farmer's

share in consumer's rupee was lowest in channel I of Trichy market with the share of 60.1 per cent for small onion.

Marketing efficiency

The results of the analysis of indices of marketing efficiency in the six marketing channels prevailing in three different markets are presented in Table 16. The index of marketing efficiency was highest for channel II of all the three markets (Dindigul, Ottanchatram and Trichy) because of direct purchase of onion by retailers from commission agents. Among these marketing efficiency was highest in Ottanchatram market followed by Dindigul and Trichy markets. Marketing efficiency was highest in channel II of Ottanchatram market (4.08 each) for small and Bellary onion respectively. The market efficiency was found to be lowest in channel I of Trichy market with the index of 2.39 for small onion.

CONCLUSION

Onion being a highly perishable vegetable is to be marketed within a short span of time. Therefore a systematic package of practices in onion production will greatly improve productivity and enable the growers to reap maximum benefit. Establishing a cooperative

Table 15. Farmer's share in consumer's rupee in selected marketing channels of small and Bellary onion (Rs/bag of 80 kg)

Component	Dindigul market				Ottanchatram market				Trichy market	
	Channel I		Channel II		Channel I		Channel II		Channel I	Channel II
	Small	Bellary	Small	Bellary	Small	Bellary	Small	Bellary	Small	Small
Farmer's price (net selling price)	630.50	866.30	630.50	866.30	815.40	973.80	815.40	973.80	445.00	445.00
Consumer's price (purchase price)	1,020.00	1,320.00	925.00	1,250.00	1,120.00	1,360.00	1,080.00	1,290.00	740.00	680.00
Farmer's share in consumer's rupee (%)	61.8	65.6	68.2	69.3	72.8	71.6	75.5	75.5	60.1	65.4

Table 16. Indices of marketing efficiency in the selected marketing channels of small and Bellary onion (Rs/bag of 80 kg)

Component	Dindigul market				Ottanchatram market				Trichy market	
	Channel I		Channel II		Channel I		Channel II		Channel I	Channel II
	Small	Bellary	Small	Bellary	Small	Bellary	Small	Bellary	Small	Small
Value of goods sold (consumer's price)	1,020.00	1,320.00	925.00	1,250.00	1,120.00	1,360.00	1,080.00	1,290.0	740.0	680.0
Total marketing cost	178.50	204.70	140.00	166.20	209.60	227.20	164.60	182.20	145.50	103.00
Market margin	211.00	249.00	154.50	217.50	95.00	159.00	100.00	134.00	163.50	132.00
Total marketing cost + market margin	389.50	453.70	294.50	383.70	304.60	386.20	264.60	316.20	309.00	235.00
Index of marketing efficiency (1/4)	2.62	2.91	3.14	3.26	3.68	3.52	4.08	4.08	2.39	2.89

marketing society exclusively for onion trade will replace the domination of middlemen like pre-harvest contractors and high commission charges incurred from the farmers in this trade. Introduction of a chain of storage and transportation facilities will solve the problem of distress sale of onion.

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