

*An Economic Analysis of Supply Chain
Management and Marketing Efficiency of
Onion in Tamil Nadu, India*

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Introduction

- ☺ Horticultural crops occupy around **13 per cent** of India's gross cropped area, producing **177.41 million metric tonnes** during 2005-06.
- ☺ In India Onion is produced in three major season's viz., **Kharif, late Kharif and Rabi.**
- ☺ Onion Area was increased from **301.9** thousand ha in 1990 to **530** thousand ha in 2005
- ☺ Onion Production qty increased from **3226.30** thousand tonnes to **5500** thousand tonnes in the above same period . Productivity of the remain same over the years.
- ☺ Yield of big onion is **25-30 tonnes/ha**, Small onion is **16-20 tonnes/ha**

Introduction

- ☺ Tamil Nadu is one of the largest producers of onion with annual production of **2.56 lakh tonnes** during the year 2004-05
- ☺ Area under onion was **26.49 thousand hectares** during the year 2004-05 in Tamil Nadu
- ☺ Though the net returns are high in vegetable production, farmers are taking vegetable production only as **small scale**.

Problem Focus

- ☺ This is due to Marketing of horticultural crops quite complex and risky due to the **perishable nature** of the produce, **seasonal production** and bulkiness.
- ☺ Poor efficiency in the marketing channels and inadequate marketing infrastructure are believed to be the cause of not only high and fluctuating product prices, but also **too little** of the **consumer rupee realized by the farmer**
- ☺ Hence, the technical and professional issues in supporting the **operation of supply chains** may include entire set of production, distribution, and marketing processes by which a consumer is supplied with a desired product.
- ☺ The present Study **highlight the supply chain management** of onion from producer to consumer.

Objectives

- to examine the market functions and marketing practices for onion in study areas;
- to find out value chain from the farmer to consumer in terms of handling, value addition, packing;
- to find out marketing cost, marketing margin and price spread for onion in study areas; and
- to suggest strategies to improve the efficiency of supply chain for onion in Tamil Nadu.

Sampling

Sample Size (Producers)

S.No	Districts	Villages	Samples per village	Total Number of Samples
1	Dindigul	2	15	30
2	Perambalur	2	15	30
Total Number of Sample				60

Sampling

Sample Size (Traders)

S.No	Traders	Dindigul	Perambalur	Total No of Samples
1	Commission Agents	10	10	20
2	Wholesalers	10	10	20
3	Retailers	10	10	20
	Total No of Traders	30	30	60

Sampling Procedure and Methodology

A total of **120 sample** respondents were selected for this study

Using random sampling procedure, **60 farmers** and **60 intermediaries** were selected

The **primary data** were collected through **personal interviews** from the farmers and market intermediaries with the help of well structured interview schedules.

Tools of Analysis

Conventional Analysis

Simple averages and percentages were worked out to analyze the data

Price Spread

Price spread analysis estimated the share of different market functionaries in the consumer's rupee

Price spread = Consumer price – Producer price.

Market Efficiency

Shepherd's formula,

$ME = V / I$ ME = Index of market efficiency

V= Value of goods sold or price paid by the consumer

I = Total marketing cost + margin

Results & Discussion of the Study

Behavior of Onion Growing farmers

Preference for Growing a Particular Variety

S. No	Characters	Small onion (N=45)		Bellary (N=15)	
		Total Number of Respondents	Percent	Total Number of Respondents	Percent
1	Physical characters	32	71.1	15	100.0
2	Pungency	42	93.3	14	93.3
3	High yielding	42	93.3	13	86.7
4	Drought resistant	11	24.4	11	73.3
5	Keeping quality	7	15.6	7	46.7
6	Pest and Disease Resistance	2	4.4	7	46.7

Source of Planting Material

S.No	Source	Total Number of Respondents	Percentage
1	Own seed farm	53	88.3
2	Private agencies	13	21.7
3	Neighbours	6	10.0
4	Government	1	1.7

Grading Practices at Farm Level

S.No	Particulars	Total Number of Respondents	Percentage to Total Number of Respondents
1	Yes	15	25
2	No	45	75
	Total	60	100

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S. No	Characters	Total Number of Respondents	
		Small	Bellary
1	Size	15 (33.33)	5 (33.33)
2	Colour	3 (6.67)	2 (13.33)
3	Freshness	6 (13.33)	3 (20.00)
4	Size, Colour and Freshness(SCF)	21 (46.67)	5 (33.33)
5	Total	45 (100)	15 (100)

Storage the Produce before Marketing

	Particulars	Total Number of Respondents	Percentage to Total Number of Respondents
1	Sale immediately after harvest	5	8.3
2	Store for 1-7 days (Small onion)	40	66.7
3	Store for 4-6 months (Bellary onion)	15	25
	Total	60	100

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S. No	Techniques Available for storage Practices	Total Number of Respondents			
		Small	%	Bellary	%
1	Pattarai (bamboo storage structures) for 4-6months (Bellary onion) Bamboo mats	26	57.78	15	100
2	Field level Storage for 1-7 days (Small onion)- Kuccha floor	8	17.78	-	-
3	concrete storage structure- Pucca floor	6	13.33	-	-
4	Cold storage(0-2°C)	-	-	-	-
5.	Controlled Atmosphere	-	-	-	-
6	Sale immediately after harvest	5	11.11	-	-
	Total	45	100	15	100

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Techniques	Kg/Qtl	Percentage Loss
Kuccha floor	19	19.66
Pucca floor	10	10.06
Bamboo mats	9	9.19

Preference of Marketing Place

S.No	Market	Percent
1	Local Market	25
2	Distant Market	75
3	Total	100

Means of Transport

S.No	Means	Total Number of Respondents		Percent
		Dindigul	Perambalur	
1	Bullock carts	6	0	10
2	Tempo Van	24	0	40
3	Lorry	0	30	50
	Total	30	30	100

Marketing Cost in Dindigul Market

(Rs/bag of 80 kg)

Sl. No	Particulars	Dindigul Market D-C-I : P-CA-W-R-C D-C-II: P-CA-R-C			
		D-C-I		D-C-II	
		Small	Bellary	Small	Bellary
1	Cost incurred by the producer	94.5	120.7	94.5	120.7
2	Cost incurred by the wholesaler	56.0	56.0	-	-
3	Cost incurred by the retailers	28.0	28.0	45.5	45.5
4	Total Marketing Cost of the Intermediaries	178.5	204.7	140.0	166.2

Marketing Cost Oddanchatram in Market

(Rs/bag of 80 kg)

Sl. No	Particulars	Oddanchatram Market			
		O-C-I		O-C-II	
		Small	Bellary	Small	Bellary
1	Cost incurred by the producer	104.6	122.2	104.6	122.2
2	Cost incurred by the wholesaler	75.0	75.0	-	-
3	Cost incurred by the retailers	30.0	30.0	60.0	60.0
4	Total Marketing Cost of the Intermediaries	209.6	227.2	164.6	182.2

Marketing Cost in Trichy Market

(Rs/bag of 80 kg)

Sl. No	Particulars	Trichy Market	
		T-C-I	T-C-II
		Small	Small
1	Cost incurred by the producer	55.0	55.0
2	Cost incurred by the wholesaler	67.0	-
3	Cost incurred by the retailers	23.5	48.0
4	Total Marketing Cost of the Intermediaries	145.5	103.0

Marketing Cost – Producer (Market wise)

(Rs/bag of 80 kg)

S. No	Particulars	Dindigul		Ottanchatram		Perambalur	
		Rs/bag	%	Rs/bag	%	Rs/bag	%
1	Transport cost	20	19.61	10	10	18	25.71
2	Packing	0	0	0	0	0	0
3	Loading and Unloading	2	1.96	2	2	1	1.43
4	Entry fee	0	0	0.6	0.6	0	0
5	Commission charge	80	78.43	87.5	87.5	50	71.43
6	Weighing charge	0	0	0	0	1	1.43
	Total Cost	102	100	100.1	100	70	100

Marketing Margin of Intermediaries in Dindigul Market

(% /bag of 80 kg)

S.No	Particulars	Dindigul Market			
		D-C-I		D-C-II	
		Small	Bellary	Small	Bellary
1	Margin of the wholesaler	5.8	8.9	-	-
2	Margin of the retailers	14.9	10.0	16.7	17.4
	Total Margin of the Intermediaries	20.7	18.9	16.7	17.4

Marketing Margin of Intermediaries in Oddanchatram Market

(% /bag of 80 kg)

S.No	Particulars	Oddanchatram Market			
		O-C-I		O-C-II	
		Small	Bellary	Small	Bellary
1	Margin of the wholesaler	4.9	5.1	-	-
2	Margin of the retailers	3.8	6.8	9.3	10.4
	Total Margin of the Intermediaries	8.7	11.9	9.3	10.4

Marketing Margin of Intermediaries in Trichy Market

(% /bag of 80 kg)

S.No	Particulars	Trichy Market	
		T-C-I	T-C-II
		Small	Small
1	Margin of the wholesaler	9.1	-
2	Margin of the retailers	13.0	19.4
	Total Margin of the Intermediaries	22.1	19.4

Total Marketing Margin of Intermediaries (Market wise)

(% /bag of 80 kg)

Sl. No	Particulars	Channel-I		Channel-II	
		Small	Bellary	Small	Bellary
1	Dindigul Market	20.7	18.9	16.7	17.4
2	Oddanchatram Market	8.7	11.9	9.3	10.4
3	Trichy Market	22.1	-	19.4	-

Farmers share in Consumer Rupee in Dindigul Market

(Rs/bag of 80 kg)

S.No	Particulars	Dindigul Market			
		D-C-I		D-C-II	
		Small	Bellary	Small	Bellary
1	Farmer's price (Net Selling Price)	630.5	866.3	630.5	866.3
2	Consumer's price (Purchase Price)	1020.0	1320.0	925.0	1250.0
3	Farmers share in Consumer Rupee (%)	61.8	65.6	68.2	69.3

Farmers share in Consumer Rupee in Oddanchatram Market

(Rs/bag of 80 kg)

S.No	Particulars	Oddanchatram market			
		O-C-I		O-C-II	
		Small	Bellary	Small	Bellary
1	Farmer's price (Net Selling Price)	815.4	973.8	815.4	973.8
2	Consumer's price (Purchase Price)	1120.0	1360.0	1080.0	1290.0
3	Farmers share in Consumer Rupee (%)	72.8	71.6	75.5	75.5

Farmers share in Consumer Rupee in Trichy Market

(Rs/bag of 80 kg)

S.No	Particulars	Trichy Market	
		T-C-I	T-C-II
		Small	Small
1	Farmer's price (Net Selling Price)	445.0	445.0
2	Consumer's price (Purchase Price)	740.0	680.0
3	Farmers share in Consumer Rupee (%)	60.1	65.4

Farmers share in Consumer Rupee (Market wise)

(% /bag of 80 kg)

Sl. No	Particulars	Channel-I		Channel-II	
		Small	Bellary	Small	Bellary
1	Dindigul Market	61.8	65.6	68.2	69.3
2	Oddanchatram Market	72.8	71.6	75.5	75.5
3	Trichy Market	60.1	--	65.4	--

Indices of Marketing Efficiency in Dindigul

(Rs/bag of 80 kg)

S.No	Particulars	Dindigul Market			
		D-C-I		D-C-II	
		Small	Bellary	Small	Bellary
1	Value of Goods sold (Consumer price)	1020.0	1320.0	925.0	1250.0
2	Total Marketing Cost	178.5	204.7	140.0	166.2
3	Market margin	211.0	249.0	154.5	217.5
4	Total Marketing Cost + Market margin	389.5	453.7	294.5	383.7
5	Index of Marketing Efficiency (1/4)	2.62	2.91	3.14	3.26

Indices of Marketing Efficiency in Oddanchatram Market

(Rs/bag of 80 kg)

S.No	Particulars	Oddanchatram market			
		O-C-I		O-C-II	
		Small	Bellary	Small	Bellary
1	Value of Goods sold (Consumer price)	1120.0	1360	1080	1290.0
2	Total Marketing Cost	209.6	227.2	164.6	182.2
3	Market margin	95.0	159.0	100.0	134.0
4	Total Marketing Cost + Market margin	304.6	386.2	264.6	316.2
5	Index of Marketing Efficiency (1/4)	3.68	3.52	4.08	4.08

Indices of Marketing Efficiency in Trichy Market

(Rs/bag of 80 kg)




S.No	Particulars	Trichy Market	
		T-C-I	T-C-II
		Small	Small
1	Value of Goods sold (Consumer price)	740.0	680.0
2	Total Marketing Cost	145.5	103.0
3	Market margin	163.5	132.0
4	Total Marketing Cost + Market margin	309.0	235.0
5	Index of Marketing Efficiency (1/4)	2.39	2.89

Indices of Marketing Efficiency (Market wise)

(Rs/bag of 80 kg)

Sl. No	Particulars	Channel-I		Channel-II	
		Small	Bellary	Small	Bellary
1	Dindigul Market	2.62	2.91	3.14	3.26
2	Oddanchatram Market	3.68	3.52	4.08	4.08
3	Trichy Market	2.39	--	2.89	--

Policy Recommendations

-  Awareness must be created among farmers on systematic storage to reduce loss and enhance duration of storage.
-  The Commission agents though provide loading, unloading and weighing services, steps have to be taken to reduce the commission charges as they do not possess title for the produce and take risk at any point of time.
-  Developing cold storage closer to the major onion markets will help to stabilize onion prices as at present farmers are compelled to sell immediately or within one to 1-7 days of storage.

Policy Recommendations

- As the number of intermediaries was less, the marketing cost declined considerably. This indicates the need to organize onion growers and link them with large consumers like hotels, restaurants, hospitals besides advising the farmers to sell in the farmers markets or other terminal markets.
- Organizing the growers will also lead to more and more contract cultivation and when the produce is systematically stored will help them with better bargaining options.

