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## An economic analysis of chickpea to estimate marketing channels, marketing cost, marketing margin and price spread in each channel of distribution in Kurnool district of Andhra Pradesh

**S Ramesh Naik and Mukesh Kumar Maurya**

### Abstract

The study is on marketing cost, marketing margin and price spread in each channel of distribution of chickpea in Kurnool district of Andhra Pradesh. The study was carried out in both conventional and functional analyses were employed to analyze the data and to arrive at valid conclusions. The data was collected using well-structured questionnaire from three different marketing channels.

Channel I: Producer → Consumer

Channel II: Producer → Village

Merchant/Retailer → Consumer

Channel III: Producer → Commission agent/Wholesaler → Village merchant/Retailer → Consumer

Finally the data is analyzed using a tabulation method along with a statistical tool.

**Keywords:** Chickpea, marketing cost, marketing margin, price spread

### Introduction

Chickpea (*Cicer arietinum* L.) is the largest produced food legume in South Asia and the third largest produced food legume globally, after common bean (*Phaseolus vulgaris* L.) and field pea (*Pisum sativum* L.). Chickpea is grown in more than 50 countries (89.7% area in Asia, 4.3% in Africa, 2.6% in Oceania, 2.9% in Americas and 0.4% in Europe). India is the largest chickpea producing country accounting for 64% of the global chickpea production. The other major chickpea producing countries include Pakistan, Turkey, Iran, Myanmar, Australia, Ethiopia, Canada, Mexico and Iraq. During the triennium 2004-2007, the global chickpea area was about 11.0 m ha with a production of 8.8 m tons and average yield of nearly 800 kg ha<sup>-1</sup>.

Chickpea is an important source of protein for millions of people in the developing countries, particularly in South Asia, who are largely vegetarian either by choice or because of economic reasons. In addition to having high protein content (20-22%), chickpea is rich in fibre, minerals (phosphorus, calcium, magnesium, iron and zinc) and β-carotene. Its lipid fraction is high in unsaturated fatty acids. Chickpea plays a significant role in improving soil fertility by fixing the atmospheric nitrogen. Chickpea meets 80% of its nitrogen (N) requirement from symbiotic nitrogen fixation and can fix up to 140 kg N ha<sup>-1</sup> from air. It leaves substantial amount of residual nitrogen for subsequent crops and adds plenty of organic matter to maintain and improve soil health and fertility. Because of its deep tap root system, chickpea can withstand drought conditions by extracting water from deeper layers in the soil profile. Chickpea is a cool season food legume and grown as a winter crop in the tropics and as a summer or spring crop in the temperate environments. It likes cool, dry and bright weather. Temperature, day length and availability of moisture are the three major abiotic factors affecting flowering. In general, flowering is delayed under low temperatures and also under short-days. Genetic variability exists in chickpea germplasm for response to variation in day length (photoperiod sensitivity) and also for response to variation in temperature (thermal sensitivity) and has been exploited in development of short-duration cultivars. Chickpea is sensitive to high (maximum daily temperature >35°C) as well as low (mean of maximum and minimum daily temperatures).

### Research Methodology

The study was conducted in Kurnool district of Andhra Pradesh which is one of the 31 districts of A.P. Kurnool district comprising 31 blocks among 1 block was selected. i.e., owk block was selected for the study.

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A list of 6 villages were selected randomly out of them. A list of all chickpea farmers/respondents is prepared with the help of head of the villages pradhan or head of each selected villages in the both block, there after farmers/respondents is categorized into categories on the basis of their land holding and then from each village 10% farmers were selected randomly from all the different size of farm groups. Data for the study was collected from all 100 farmers randomly i.e., 50 marginal farmers, 35 small farmers, 15 medium farmers. Tabulation method is used for analysis of data along with required statistical tools for the interpretation of the results.

## Results and Discussions

The study was conducted in Kurnool district of Andhra Pradesh. The necessary data were collected from the sample farmers spread over one block in the above mentioned district. The present chapter is going to talk about the results and discussion for various objectives. The chapter is arranged in different sub-section according to objectives of the study. To work out price spread, marketing cost, marketing margin in different existing marketing channels.

### Marketing cost

The total cost incurred on marketing by various intermediaries involved in the sale and purchase of the commodity till it reaches the ultimate consumer was computed as follow:

$$C = C_f + C_{m1} + C_{m2} + C_{m3} + \dots + C_{mn}$$

Where,

C = Total cost of marketing

C<sub>f</sub> = Cost borne by the producer farmer from the produce leaves the farm till the sale of the produce, and

C<sub>mn</sub> = Cost incurred by the i<sup>th</sup> middlemen in the process of buying and selling.

### Marketing margin

This referred to the net share to the different marketing

Intermediaries for particular quantity of produce after deducting marketing costs from gross marketing margins at each stage of handling the commodity.

$$\text{Absolute margin} = Pr_j - (P_{pi} + C_{mi})$$

$$\text{Percent margin} = \frac{P_{pi} + C_{mi}}{Pr_j}$$

Where,

PR<sub>i</sub> = Sale price of the middleman

P<sub>pi</sub> = Purchase price of the middleman

C<sub>mi</sub> = Marketing cost Incurred by the middleman

### Producer's share in Consumer's Rupee

$$P_s = \frac{P_f}{P_c} \times 100$$

Where,

PS = Producer's share in Consumer's Rupee

PF = Price of the produce received by the farmer

PC = price of the produce paid by the consumer

### Price spread

It was calculated by taking difference between the price paid by the consumer and the price received by the producer.

$$\text{Price Spread} = \text{Total Marketing Cost} + \text{Total Marketing Margin}$$

### Marketing channels

Channel I: Producer → Consumer

Channel II: Producer → Village merchant/Retailer → Consumer

Channel III: Producer → Commission agent → Wholesaler → Consumer

Comparison of total marketing cost, total marketing margin, price spread, producer share in consumer rupee (%) and marketing efficiency in three different channels

Table 1: Value (Rs/quintal)

S. No.	Particulars	Channel - I	Channel - II	Channel - III
1	Producer sale price	5820	5820	5820
2	<b>Cost incurred by the producer</b>			
	Packing cost	5 (0.07)	5 (0.07)	5 (0.07)
	Packing material cost	7.5 (0.11)	7.5 (0.11)	7.5 (0.11)
	Transportation cost	20 (0.30)	20 (0.30)	20 (0.30)
	Market cost	8 (0.12)	8 (0.12)	8 (0.12)
	Labour cost	5 (0.07)	5 (0.07)	5 (0.07)
	Loading and unloading charges	10 (0.15)	10 (0.15)	10 (0.15)
	Weighing charges	5 (0.07)	5 (0.07)	5 (0.07)
	Miscellaneous charges	3 (0.04)	3 (0.04)	3 (0.04)
	Total cost (i to viii)	63.5 (0.98)	63.5 (0.98)	63.5 (0.98)
3	Net price received by producer	5756.5 (88.56)	5756.5 (88.56)	5756.5 (88.56)
4	Sale price of producer to commission agent	-	-	6500
5	<b>Cost incurred by the commission agent/Wholesaler</b>			
	Loading and unloading charges	-	-	10 (0.15)
	Packing cost	-	-	5 (0.07)
	Market fee	-	-	15 (0.23)
	Commission of trader	-	-	25 (0.38)
	Losses & Miscellaneous charges	-	-	3 (0.04)
	Total cost	-	-	58 (0.89)
8	Margin of commission agent	-	-	350 (5.39)
9	Sale price of commission agent to Village merchant	-	-	6850 (93.10)
10	<b>Cost incurred by Village merchant/Retailer</b>			
	Weighing charges	-	5 (0.07)	5 (0.07)
	Loading and unloading charges	-	10 (0.15)	10 (0.15)
	Town charges	-	25 (0.38)	25 (0.38)
	Carriage up to shop	-	15 (0.23)	15 (0.23)

	Miscellaneous charges	-	5 (0.07)	5 (0.07)
	Total cost	-	60 (0.92)	60 (0.92)
12	Village merchant Margin	-	500 (7.69)	500 (7.69)
13	Sale price of Village merchant/Retailer to consumer	-	7060 (100)	7350 (100)
14	Price spread	680 (10.46)	1240 (19.08)	1530
15	Consumer paid price	6500	7060	7350
16	Producer share in consumer rupee	89.54	82.44	79.18
17	Marketing Efficiency (in %)	9.55	5.69	4.80

Comparison of total marketing cost, total marketing margin, price spread, producer's share in consumer rupee (%) and

marketing efficiency in three different channels among chickpea growers with different size of farm

**Table 2:** Marketing efficiency in three different channels among chickpea growers with different size of farm

S. No.	Particulars	Channel-I	Channel-II	Channel-III
1	Total marketing cost	63.5	123.5	121.5
2	Total marketing margin	550	1050	1550
3	Price spread	680	1240	1550
4	Producers share in consumer rupee (%)	89.54	82.44	79.18
5	Marketing efficiency	9.55	5.69	4.80

From the above table it revealed that the through channel-I, the total marketing cost was Rs.63.5/q, total marketing margin Rs.550/q, price spread rs.680/q, producers share in consumer rupee (%) was 89.54 with a marketing efficiency 9.55. Through channel – II, the total marketing cost was Rs.123.5/q, total marketing margin Rs.1050/q, price spread

rs.1240/q, producer's share in consumer rupee (%) was 82.44 with a marketing efficiency 5.69. Through channel – III, the total marketing cost was Rs.121.5/q, total marketing margin Rs.1550/q, price spread rs.1550/q, producer's share in consumer rupee (%) was 79.18 with a marketing efficiency 4.08.

**Table 3:** Anova

Source	Df	Sum of squares	Mean sum of squares	F <sub>cal</sub>	F <sub>tab</sub> 5%	Result	S. Ed. (±)	C. D. 5%
Size group	2	48572361.64	37569421.63	9.45	10.32	NS	827.54	1452.34
Particulars	4	6452178394.51	5463189475.42	7.96	10.32	NS	749.28	1652.34
Error	8	496255017.65	842574366.54					
TOTAL	14							

From the above annova table, it can be evident that the size of the group was 2 with the degrees of freedom, particulars was 4 with an error value of 8, accounting to a total of 14. The sum of squares of the group size was 48572361.64 which has mean sum of squares 37569421.63. The F<sub>cal</sub> was 9.45 whereas F<sub>tab</sub>, at 5% level of significance was 10.32, it revealed that F<sub>cal</sub> was lesser than F<sub>tab</sub> and depicts that it was non-significant with Standard deviation value of 827.54 and Critical Difference at 5% was 1452.34. The particulars had sum of the squares as 6452178394.51, with mean value of 5463189475.42. The F<sub>cal</sub> was 7.96 whereas F<sub>tab</sub>, at 5% level of significance was 10.32, it revealed that F<sub>cal</sub> was lesser than F<sub>tab</sub> and depicts that it was non-significant with Standard deviation value of 749.28 and Critical Difference at 5% was 1652.34.

### Conclusion

Its concluded that price spread and marketing margin in different marketing channels revealed that net returns were high in regulated marketing channel i.e channel – I and low in local markets i.e channel – III. Producer share in consumer rupee and marketing efficiency were high in regulated markets and low in local markets. Major constraint in local market was Lack of information about government scheme and subsidies and non-availability of quality seedling locally. Among the three marketing channels identified in Kurnool regulated market, the Channel-II, i.e. Producer- Village merchant/Retailer-Consumer was found more popular in marketing of chickpea. The prices of chickpea have not been influenced by the arrivals in Kurnool market. The maximum prices of Bengal gram were observed during the month of February. Thus, the sellers prefer these months for selling chickpea in Kurnool market.

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