



Marketing Efficiency and Marketing Constraints of Rice Fallow Maize in Guntur District of Andhra Pradesh

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ABSTRACT

Maize has the highest average national grain productivity followed by sorghum and bajra. In view of increased area and grain output, the present research paper is intended to analyse its marketing efficiency and marketing constraints. The net price received by the farmer is highest with Rs 800 per q/ha, the marketing costs and margins are lowest, the producers share in consumers rupee is 90.91 per cent and the marketing efficiency was highest with 10, in case of channel -1 i.e producer - marketed - consumer than other channels studied. Lack of remunerative price, lack of storage, lack of regulated markets and lack of procurement were identified as major constraints.

Key words : Maize, Marketing constraints, Marketing efficiency.

Maize (*Zea mays* L.) belongs to the family Poaceae. It is commonly called 'queen of coarse cereals' (Pant and Shyoraj Hada, 2004). It is the crop with highest per ha productivity with its world average yield of 27.8 q/ha, ranks first among cereals and is followed by rice, wheat and millets (Handbook of Agriculture). It is one of the most important cereal crops in the world grown over an area of 1,45,142 thousand hectares with a production of 7,05,293 thousand tons. About 65 per cent of maize produced in the world is used as animal feed, 27 per cent as human food and rest of 8 per cent as non-food industrial products and seed. Maize is the fourth largest food grain produced in India and one of the staple foods of poor family. India's share in world's area is only 4.69 per cent (6800 thousand tons) next to USA, China, Brazil and Mexico. Among the coarse cereals, it has the highest average national productivity (1.7-1.8 t/ha), followed by sorghum and bajra (Verma, 2007). About 55 per cent of the maize produced in the country is used in poultry/cattle feed, 38 per cent is used for human consumption, 6 per cent in the manufacture of starch and allied products and remaining one per cent as seed. Madhya Pradesh (14.56%), Andhra Pradesh (14.47%) and Karnataka (13.69%) are the largest maize producing states in India.

During the period between 2006 and 2009, its cultivation has been increased in many parts of Andhra Pradesh as a rice fallow crop replacing the traditional crops like black gram, sunhemp etc. In the context of its increased area and grain output, the present research article is aimed at analyzing the marketing efficiency of various channels for grain

maize as well as identifying the marketing constraints at sample farmers.

MATERIAL AND METHODS

A three stage sampling procedure *i.e.*, mandal, village and farmer level was followed for the purpose of selection of primary sampling units. The Guntur district was purposively selected for the study because it ranks first in rabi season rice fallow cultivation of maize during the period 2006 to 2009. Two mandals and six villages were selected finally for this study from the district taking in to consideration the highest area of maize cultivation in rice fallows. A sample of 120 farmers were randomly selected to elicit the information regarding the marketing constraints experienced by them. The study pertains to the rabi season of 2009-10. Marketing information of maize collected from sample farmers, village traders, wholesalers, retailers and marketed for computing

Marketing costs: $TC = C_p + \sum_i^n MC_i$

Where, TC = Total cost of marketing
 C_p = Costs incurred by producer in marketing
 MC_i = Marketing costs incurred by the i^{th} trader

$$\sum_i^n$$

Marketing margins:

$A_m = P_m - (P_b + M_c)$
 Where, A_m = Margin of middlemen or trader
 P_m = Selling price of trader
 P_b = Buying price of trader
 M_c = Marketing costs born by the trader

Producer's share in consumer rupee:

$$P = (P_F / P_R) \times 100$$

Where, P = Producer's share in consumer rupee

P_F = Price received by the farmer

P_R = Price paid by the consumer

Marketing efficiency:

Marketing Efficiency (ME) was calculated by the Acharya method. (Acharya and Agarwal, 2004)

$$MME = FP / (MC + MM) \quad \text{or}$$

$$MME = [RP / (MC + MM)] - 1$$

Where, MME = Modified measure of Marketing Efficiency

MM = Net marketing margins

FP = Net price received by the farmer

RP = Price paid by the consumer

MC = Total marketing costs

Kendall's coefficient of concordance was adopted for ranking the various constraints identified in the grain maize marketing (Kothari, 2008)

$$KC = \frac{\sum R_j^2 - \frac{(R_j)^2}{n}}{\frac{1}{12} K^2 (n^3 - n)}$$

$$\chi^2_{cal} = K(n-1) K_c \Sigma$$

Where, K_c = Kendall's Coefficient

K = No. of respondents assigning ranks.

n = No. of constraints ranked.

R_j = Rank total of columns j.

j = Ranks assigned 1 to n.

$$\chi^2_{cal} = K(n-1) K_c$$

RESULTS AND DISCUSSIONS

In the present study, marketing costs and margins for maize was worked out separately for different channels which were identified in the study area. The major channels identified in marketing of maize were

- 1) Channel I: Producer – Markfed (A.P. State cooperative marketing federation) – Consumer (Dairy farmer/Poultry farmer)
- 2) Channel II: Producer – Village Trader – Markfed (A.P. State cooperative marketing federation) – Consumer (Dairy farmer /Poultry farmer)

3) Channel III: Producer – Village Trader – Consumer (Poultry farmer)

4) Channel IV: Producer – Village Trader – Wholesaler – Consumer (Poultry farmer)

5) Channel V: Producer – Village Trader – Wholesaler – Retailer – Consumer (pop corn)

Marketing Costs, Margins and Price Spread of Maize in Different Channels

The table. 1 shows that the net price received by the producer farmer in the consumer's purchase price per quintal was more in case of Channel-I. The percentage share of the farmer in consumer's rupee was more in case of Channel-I followed by the Channel-III. The producer directly sold to the markfed in Channel-I where producer got procurement price announced by Govt *i.e.* Rs.840/ qtl.

Table. 2 shows that the marketing costs incurred in the channel-II were Rs.55 and marketing margin was Rs.65. Marketing costs and marketing margins in channel-III were Rs.32 and Rs.78, respectively. Marketing costs were more in channel-IV & V with Rs.60 and Rs.78 respectively, because of more number of intermediaries.

The Producer's share in the consumer's rupee was more in Channel-I means, the farmers were getting more percentage share in consumer's price by direct selling of their produce to markfed where they have got procurement price for maize (Table. 3). Channel-III was next best for getting highest percentage share in consumer's rupee where farmers have not incurred any marketing costs due to direct selling to village trader itself in the village. The Producer's share in the consumer's rupee was less in Channel-IV and lowest in Channel-V means, the farmers are getting less percentage share in poultry consumer's rupee because the most of the money was shared in the form of margins to the intermediaries involved (Pawar, 1998).

Marketing Efficiency:

The perusal of table 4 reveals that the marketing efficiency was highest in Channel-I *i.e.* 10, because of the absence of middlemen and costs incurred by the farmer and markfed were only the marketing costs here. The marketing efficiency was lowest in Channel-V *i.e.* 2.62, because of more number of intermediaries involved in this channel. The marketing efficiency was 5.90 and 5.33 in case of Channel-III and Channel-II respectively.

Table 1. Price spread of maize in different marketing channels (Rs/qttl)

S. No	Item	Chan-nel-I	% age to total	Chan-nel-II	% age to total	Chan-nel-III	% age to total	Chan-nel-IV	% age to total	Chan-nel-V	% age to total
1	Producers selling price	840	95.45	760	86.36	760		760		760	78.35
2	Expenses incurred by producer	40	4.54	-	-	-		-		-	
A	Weighing cost	5	0.57	-	-	-		-		-	
B	Packing material cost	15	1.70	-	-	-		-		-	
C	Packing cost	4	0.45	-	-	-		-		-	
D	Loading and unloading cost	8	0.91	-	-	-		-		-	
E	Transport cost	8	0.91	-	-	-		-		-	
3	Net price received by farmer	800	90.91	760	86.36	760	87.36	760	82.60	760	78.35
4	Village trader purchasing price	-		760	86.36	760	87.36	760	82.60	760	78.35
5	Expenses incurred by village trader	-		40	4.54	32	3.69	32	3.48	32	3.29
A	Weighing cost	-		5	0.57	5	0.57	5	0.54	5	0.51
B	Packing material cost	-		15	1.70	15	1.72	15	1.63	15	1.55
C	Packing cost	-		4	0.45	4	0.46	4	0.43	4	0.41
D	Loading and unloading cost	-		8	0.91	8	0.92	8	0.87	8	0.82
E	Transport cost	-		8	0.91	-	-	-	-	-	-
6	Net price received by village trader	-		840	95.45	870	100	850	92.39	850	87.63
7	Markfed purchasing price	840	95.45	840		-		-		-	
8	Expenses incurred by markfed	15	1.70	15		-		-		-	
A	Storage cost	8	0.91	8		-		-		-	
B	Spoilage cost	4	0.45	4		-		-		-	
C	Other expenses	3	0.34	3		-		-		-	
9	Net price received by markfed	880	100	880		-		-		-	
10	Wholesaler purchasing price	-		-		-		850	92.39	850	87.63
11	Expenses incurred by wholesaler	-		-		-		28	3.04	28	2.89
A	Storage cost	-		-		-		6	0.65	6	0.62
B	Market fee	-		-		-		10	1.15	10	1.03
C	Spoilage cost	-		-		-		4	0.43	4	0.41
D	Transport	-		-		8	0.87	8	0.82		
11	Net price received by wholesaler	-		-		-		920	97.82	920	94.84
12	Retailer purchasing price	-		-		-		-		920	94.84
13	Expenses incurred by retailer	-		-		-		-	18	1.85	
A	Transport cost	-		-		-		-		6	0.62
B	Cleaning cost	-		-		-		-		4	0.41
C	Wastage cost	-		-		-		4	0.41		
D	Processing cost	-		-		-		-		4	0.41
12	Consumer purchasing price	880	100	880	100	870	100	920	100	970	100
13	Price spread	80	9.52	120	13.64	110	12.64	160	17.39	210	21.65

Source: Farm survey data

Table 2. Marketing costs and margins of different marketing channels

Particular	Chan- nel-I	% age to total	Chan- nel-II	% age to total	Chan- nel-III	% age to total	Chan- nel-IV	% age to total	Chan- nel-V	% age to total	
Market- ing Costs	a. Producer	40	73.73	-	-	-	-	-	-	-	
	b. Village Trader	-	-	40	73.73	32	100	32	53.33	32	41.03
	c. Markfed	15	27.27	15	27.27	-	-	-	-	-	
	d. Wholesaler	-	-	-	-	-	28	46.66	28	35.89	
	e. retailer	-	-	-	-	-	-	-	18	23.08	
	Total	55	100	55	100	32	100	60	100	78	100
Market- ing Margins	a. Producer	-	-	-	-	-	-	-	-	-	
	b. Village Trader	-	-	40	61.54	78	100	58	58	58	43.94
	c. Markfed	25	100	25	38.46	-	-	-	-	-	
	d. Wholesaler	-	-	-	-	-	42	42	42	31.82	
	e. Retailer	-	-	-	-	-	-	-	32	24.24	
	Total	25	100	65	100	78	100	100	100	132	100

Table 3. Producer's share in consumer's rupee in different channels

Particular	Channel-I	Channel-II	Channel-III	Channel-IV	Channel-V
Net price received by the farmer (Rs/qttl)	800	760	760	760	760
Producer's share in consumer's rupee (percentage)	90.91	86.36	87.36	82.60	78.35

Constraints in maize marketing:

The χ^2 calculated value of Kendall's Coefficient of concordance (29.39) was greater than the table value (12.592) at 5 per cent level of significance. It was concluded that the value was significant and that all the interviewed retailers were in agreement in ranking the constraints. The ranking given to the constraints like lack of remunerative price, lack of adequate storage facilities, lack of regulated market near mandal and lack of Govt. procurement agency were the major marketing problems faced by the maize growers in the study area (Table. 5).

Conclusions

The result from the present study showed that marketing efficiency was highest in Channel-I and it was lowest in Channel-V. Producer's share in

consumer rupee also highest in Channel-I whereas it was lowest in Channel-V. Major marketing constraints identified were lack of remunerative price, lack of adequate storage facilities, lack of regulated market near mandal and lack of Govt. procurement agency.

Proper market information and market intelligence should be made available to the farmers. There is a strong need for the government to keep an eye over the market arrangement, enforcement of regulated market activities; and facilitating cold storage in the study area. Efforts may be profitable to the growers, if they were linked directly with the processors like poultry feed or cattle feed manufactures or beverage manufactures. Further it could be suggested for value addition and export market for better profits commodity through contract farming.

Table 4. Marketing efficiency of different channels in maize marketing

Particulars	Channel-I	Channel-II	Channel-III	Channel-IV	Channel-V
FP (Net price received by the farmer)	800	760	760	760	760
MC (Total Marketing Cost)	55	55	32	60	78
MM (Net marketing margins)	25	65	78	100	132
ME (Marketing Efficiency)	10	5.33	5.90	3.75	2.62

Table 5. Ranks assigned to the constraints faced by farmers in maize marketing

S. No.	Constraint	ΣR_j	Mean rank	% age to total
1	Lack of remunerative price	249	2.07	30.83
2	High transportation charges	558	4.65	5.83
3	Lack of Govt. agency to buy maize at procurement price	398	3.32	12.5
4	Late payment	518	4.32	7.5
5	Lack of regulated market near mandal head quarters	364	3.03	17.5
6	Lack of price information	784	6.53	3.33
7	Lack of adequate storage facilities	311	2.59	22.5

K_c = Kendall's Coefficient = 0.041

$\chi^2_{cal} = K (n-1) k_c = 29.39$

$\chi^2_{tab} (6 \text{ d.f.}) = 12.592$

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