

An Economic Analysis of Post-harvest losses and Marketing of Groundnut (*Arachis hypogaea*) in Anantapur District of Andhra Pradesh

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Abstract:- Study on Post-harvest losses, marketing cost, marketing margin, marketing efficiency and price spread in groundnut. The study was conducted for the agricultural year 2019-2020. This paper is devoted to 77kg/ha Post-harvest losses occurs at various stages of operations and also several factors effecting for losses at farm level. These losses have a direct and negative impact on the income of both farmers and consumers. Three marketing channel were found in study area. Marketed surplus was worked out 88.14 per cent. The producer's share in consumer rupee was worked out 96.84, 81.63 and 76.37 per cent in channel - I, II and III respectively. The producers share in consumer rupee was inversely with number of intermediaries. The marketing cost came to Rs. of 161,430 and 504 in channel - I, II and III respectively. Marketing margin of middlemen in consumer rupee came to 840 and 860 in channel - II and channel - III respectively. The marketing cost and marketing margin were proportionate with number of intermediaries.

Keywords:- Marketing Cost, Marketing Margin Marketing Efficiency, Price Spread And Post-Harvest Losses.

I. INTRODUCTION:

Groundnut (*Arachis hypogaea*), is a species in the legume family. It is an annual herbaceous plant growing 30 to 50 cm (1.0 to 1.6 ft) tall. Groundnut is not only an important oilseed crop of India but also an important agricultural export commodity. India ranks first in groundnut acreage with 70 lakh hectares approximately and with an output of 80-85 lakh MT (in shell groundnuts), second in production. Although in various states of India groundnut is cultivated in (kharif, rabi and summer) all seasons, nearly 80% of acreage and production comes from kharif crop (June-October). The country has exported 664442.93 MT of Groundnuts to world for worth of Rs.5096.34 cores during 2019-20.

Groundnut contains protein, vitamin, amino acid, calcium, iron, Zinc and Boron. Kernels are also eaten raw roasted or sweetened. It is an important protein supplement in cattle and poultry ration. It is also consumed as confectionary product. Groundnut contains 46-52 % oil content and 22% protein. The protein in groundnuts is used in the manufacture of ardil, a synthetic fibre. While being a valuable source of all the nutrients, it is a low-priced commodity. All parts of this plant can be commercially used.

II. RESEARCH METHODOLOGY

Anantapur district was selected purposively for study due to 60 percentage area and production of groundnut in Andhra Pradesh. Out of 63 total block of Anantapur district, Kadiri and Mudigubba blocks was selected purposively on the basis of maximum area of production groundnut for present study. Five per cent villages from each of two selected blocks total 4 villages was randomly selected. From selected villages a groundnut growers list was prepared and divided in three groups viz. marginal & small (<1 ha), medium (1-2 ha) and large farms (> 2 ha). A random sample of 40 small farmers, 40 medium and 30 large farmers were selected randomly. Thus, 110 farmers were selected randomly from 4 selected villages in each category proportionately. The pretested schedules and questionnaire were used to collect primary data with help of personal interview. Two regulated market namely Kadiri and Anantapur were selected, where major quantity of produce of the selected villages are disposed off. The tools of analysis use in this study are descriptive statistic such as Averages and Percentages the relevant secondary data was collected from different sources i.e. books, journals, report and record of district and block head quarter, marketing institutions / agencies.

III. RESULT AND DISCUSSION

STAGES	Losses (Kg/ha)	Loss %	Cost %
1.Farm level losses			
Harvesting	6	7.8	305.45
Heaping	8	10.4	529.45
Threshing	10	13	509
Cleaning	7	9.09	356.4
Drying	2	2.6	102
Packing	2	2.6	102
Total losses at farm level	33	42.86	1680
2.whole shell losses			
Storage	10	13	509
Transit	4	5.12	204
Total losses at wholesale level	14	18.18	713
3.Processor level losses			
Storage	5	6.5	254.5
Transit	3	3.9	152.7
Grain scattering	8	10.39	407.3
Total losses at Processor level	16	20.78	814.5
4.Retail level losses			
Storage	4	5.12	204
Transit	6	7.8	305.45
Handling	4	5.12	204
Total losses at Retail level	14	18.18	713
Total Post harvest losses	77	100.00	3920

Table-1:- Estimation of Post –harvest losses at Different stages in Groundnut:

Farm Level Losses:

The estimated post-harvest losses per ha of food grains handled at different stages are presented in Table. These were estimated to be 77 kg/ha at the farm level. These losses were maximum due to faulty harvesting (6 kg/ha), Pod losses during the Heaping activity was estimated to be 8 kg/ha . The Threshing were mainly in the form of broken pods, which were slightly higher in threshing machine as compared to manual threshing. The threshing losses (10 kg/ha) were still higher when power threshers were used. However a majority of the large farmers preferred power threshers due to their cost and time advantage. The losses due to drying operation in grains were estimated to be 2 kg/ha. These were mainly due to use of traditional methods of drying by the farmers. The losses were noticed during loading and unloading of produce during transportation. The losses during cleaning/winning operation were estimated to be 7 kg/ha. The packing losses were estimated to be 2 kg/ha .

Market Level Losses:

The total post-harvest losses at whole seller level were 14 kg/ha, storage losses at the whole seller level were 10 kg/ha. Important factors leading to storage losses were (i) non-availability of separate go downs for storage, (ii) poor storage structures, (iii) presence of rodents, insects and dampness, and (iv) improper drainage at storage places. The other component of post-harvest losses at this stage was transit losses of 4 kg/ha. The transit losses were more because of the use of unsuitable transport containers, negligent driving and rough roads.

Losses at the processor level were 16 kg/ha. Losses at the retail level were 14 kg/ha. The losses due to spoilage and multiple-handling of produce during retailing were 4 kg/ha. Losses at the retailer level due to storage were 4 kg/ha.

The total post-harvest losses worked out to be 77kg/ha. The losses were maximum at the farm level (33kg/ha) accounting for 42.86per cent ,for whole sellers(14 kg/ha) accounting for 18.18 per cent The losses at processor level was less than 20.78 per cent of the total losses. The losses at retail level were 18.18 per cent.

	Co-efficient	Standard Error	t Stat
Intercept	-0.5137421	0.521609448	-0.9849172
Age of Respondent	0.007477955	0.007477955	1.0542656
Education	0.040381305	0.02180377	1.8520331
Production	0.027530744	0.011625885	2.3680557
Weather	0.825163944	0.12763488	6.4689839
Type of Selling	0.660736253	0.115939308	5.6989839
Multiple R	0.814158613		
R Square	0.662854248		
Adjusted R Square	0.615810654		
F	Significance F		
14.09021295	<0.01		

Table-2: Factors Effecting for Post-harvest losses at Farm level

To study the influence of different socio-economic factors of farmers on post-harvest losses at the farm level, a multiple linear regression analysis was carried out. The estimated regression coefficients are presented in Table. The F-ratio was significant indicating thereby the good fit of the regression models. The post-harvest losses were positively and significantly conditioned by Age, Education, total production of Groundnut, area under irrigation, area under commercial crops and weather dummy. These losses in Groundnut increased with increase in output, adverse

weather conditions, and the areas under commercial crops and irrigation

Marketing of Groundnut:

Channel – 1: Producer → Consumers

Channel - II: Producer → Traders / Wholesaler → Retailer → Consumers

Channel - III: Producer → Processors / Oil trader’s → Consumers

Sl. NO	Particulars	Channel - I	Channel - II	Channel - III
1.	Producer sale price to consumer	5090	6199	6280
2.	Cost incurred by the producer			
I	Packing cost	16(0.31)	16(0.26)	16(2.54)
II	Packing material cost	30(0.6)	30(0.48)	30(0.47)
III	Transportation Cost	28(0.55)	28(0.45)	28(0.44)
IV	Cleaning and Dressing	15(0.3)	15(0.24)	28(0.44)
V	Loading and unloading charges	28(0.55)	28(0.45)	28(0.44)
VI	Weighing charges	24(0.47)	24(0.39)	24(0.39)
VII	Miscellaneous charges	20(0.4)	20(0.32)	20(0.32)
3.	Total cost (i-vii)	161(3.16)	161 (2.6)	174(2.77)
4.	Net priced received by the producer	4929(96.83)	4929(79.51)	4916(78.28)
5	Sale price of producer to Oil traders/Trader	-	5090(82.11)	5090(81.05)
6	Cost incurred by the Oil Trader/retailer			
I	Loading and unloading charges	-	28(0.45)	28(0.44)
II	Milling Cost	-	-	40(0.64)
III	Cleaning Cost	-	-	40(0.64)
IV	Weighing Cost	-	-	32(0.51)
V	Packing Cost	-	35(0.56)	22(0.35)
VI	Market fee	-	20(0.32)	26(0.41)
VII	Commision to village trader	-	28(0.45)	24(0.38)
VIII	Broker cost for sale of Produce	-	-	15(0.24)
IX	Miscellaneous Charges	-	20(0.32)	10(0.16)
X	Watchmen	-	-	10(0.16)
XI	Trader margin	-	360(5.80)	580(9.23)
7	Total cost	-	131(2.11)	247(3.93)
8	Sale price of trader to retailer	-	5581(90.03)	5917(94.12)
9	Cost incurred by the Retailer	-	-	-
1	sale price to wholesaler/commission agent	-	-	--
2	Cost incurred by the Retailer	-	-	-
I	Weighing charges	-	32(0.51)	-

II	Loading and unloading charges	-	28(0.45)	28(0.44)
III	Town Charges	-	30(0.48)	25(0.4)
IV	Carriage To shop		28(0.45)	20(0.32)
V	Miscellaneous charges	-	20(0.32)	10(0.16)
3	Total cost (i-vii)	-	138(2.22)	280(4.46)
4	Price spread	-	1270	1364
5	Consumers paid price	5090(100)	6199(100)	6280(100)
6	Producer share in consumer rupee(%)	96.84	81.63	76.37
7	Marketing efficiency	31.6	4.88	4.60

Table-3: Comparison of Different Marketing Channels.

Sl. no	Particulars	Channel-I	Channel-II	Channel-III
1	Total marketing cost	161(100)	430(33.86)	504(36.95)
2	Total marketing margin	000	840(66.14)	860(63.05)
3	Price spread	161(100)	1270(100)	1364(100)
4	Producer share in consumer rupee (%)	96.84	81.63	76.37
5	Marketing efficiency	31.61	4.88	4.60

Table-4: Comparison table for Three Different Channels.

The total marketing cost in channel-I was Rs.161/quintal, price spread Rs.161/quintal, producer share in consumer rupee 99.84, marketing efficiency 31.61 percentage and there is no total marketing margin. The total marketing cost in channel-II was Rs.430/quintal, total marketing margin Rs.840/quintal, price spread

Rs.1270/quintal, producer share in consumer rupee 79.51 and marketing efficiency 4.88 percentage. The total marketing cost in channel-III was Rs.504/quintal, followed by total marketing margin Rs.860/quintal, price spread Rs.1364/quintal, producer share in consumer rupee 78.48 and marketing efficiency 4.60 percentage.

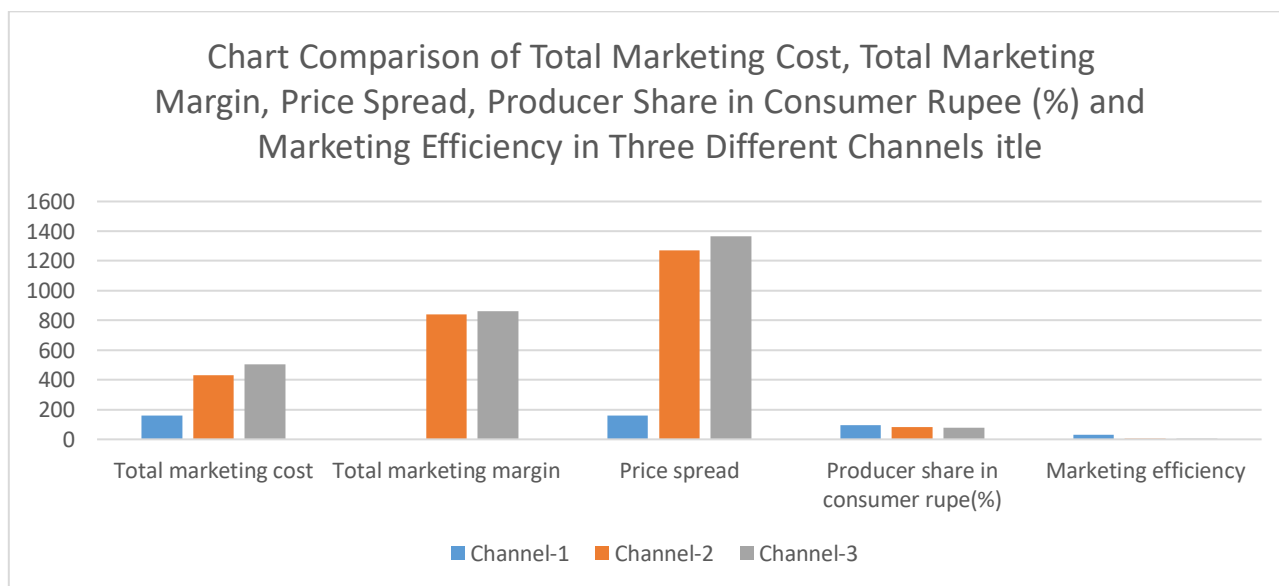


Fig- 1:- Comparison Table for Different Channels.

IV. CONCLUSION

The study was based on intensive enquiry of 110 farmers of the selected villages in the block. It was concluded that, the regression model explained approximately 66 per cent variations in the total post-harvest losses in Groundnut. The F-ratio was significant indicating thereby the good fit of the regression models. The post-harvest losses were positively and significantly conditioned by Age, education, total production of Groundnut, area under

irrigation, area under commercial crops and weather dummy. These losses in Groundnut Directly related with output, adverse weather conditions, and the areas under commercial crops and irrigation, the percentage of marketable surplus was increased with the increase in size of farm. Marginal and small group of farmers sold higher quantity of their produce through village trader (channel - III). Total marketing margin, marketing cost and consumer price were increased with increase in number of intermediaries (i.e. channel -I II and III), there is inverse

relationship between marketing efficiency, Producers share in consumer rupee with the involvement of intermediaries in the marketing channel.

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