

An Economic Analysis of Production of Groundnut (Arachis Hypogaea) in Anantapur District of Andhra Pradesh

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Abstract:- The Present study entitled “An Economic Analysis of production of groundnut in anantapur district of Andhra Pradesh” was conducted in year 2018-2019. The study made use of a multistage sampling and random sampling technique to select 120 respondents among those selected villages. Data for the study were collected with the aid of a well- structured questionnaires. This study revealed that at overall level, per hectare cost of cultivation, gross income, net income farm investment income, cost of production and input and output ratio of groundnut was worked out. Data collected were analyzed using tabulation method along with required statistical tool. The results indicated that The cost incurred by small, medium and large farms (Rs.63537.0/ha),(Rs.61115.0/ha) and (Rs.59455.0/ha) respectively. The gross return obtained per hectare by small, medium and large was (Rs.83130/ha), (Rs.85575/ha) and (Rs.89487/ha) respectively. And net return per hectare small, medium, large farms (Rs.22693/ha), (Rs.27060/ha) and (Rs.32432/ha) respectively. Input- Output ratio per hectare was small(1:1.37), medium(1:1.46), large(1:1.56) respectively. The measures of farm profit that were Rs.86064/ha. Net income Rs.27395/ha, farm business income 34747/ha, farm investment income Rs.41415/ha, Family labour income Rs.38012.46/ha.

Keywords:- Groundnut , Cost and Return, Input Output Ratio.

I. INTRODUCTION

Groundnut is one of the major commercial oil seed crop in India and ranked first in area and second in production in the world. This area constitutes approximately one tenth of the total cultivated area in India. India occupies a prominent position, both in regard to acreage and production of oilseed crops in the world. India is one of the largest producers of oilseeds in the world

and occupies an important position in the Indian agricultural economy. Groundnut is called as the ‘king’ of oilseeds. It is one of the most important food and cash crops of our country. While being a valuable source of all the nutrients, groundnut is a low-priced commodity. Groundnut is also called as wonder nut and poor man’s cashew nut. Groundnut is one of the most important cash crops of our country. It is a low priced commodity but it has a valuable source of all the nutrients.

II. RESEARCH METHODOLOGY

Districts Anantapur was selected purposively, because of highest area under groundnut in Andhra Pradesh. All the 63 block of Anantapur districts was arranged in ascending order according to area under groundnut cultivation and block namely Bathalapalli and Kothacheruvu from top was selected for this study. A list of 6 villages were selected randomly out of them. A list of all the groundnut growers of the selected 6 villages was prepared and divided in three groups viz. marginal (below 1 ha), small (1-2 ha) and other (medium and large) farms (above 2 ha). The number of large farms was very less hence medium and large farms were merged altogether. A random sample of 55 small farms, 45 medium and 20 large farms were selected randomly. Thus, 120 farmers were selected randomly from 6 selected villages in each category proportionately. this data were collected through personal interview using pre structured schedule, the data thus collected were subjected to tabular analysis and statistical tools.

Sl. No	Particulars	Size of farm groups			Sample average
		Small	Medium	Large	
1.	Hired labour	8000 (12.59)	7650 (12.51)	7450 (12.53)	7700 (12.54)
2.	Machinery labour charges	1800 (2.83)	1650 (2.69)	1600 (2.69)	1683.3 (2.73)
3.	Cost of seed	11000 (17.31)	10450 (17.09)	10300 (17.32)	10583.3 (17.24)
4.	Cost of manures	4500 (7.08)	4350 (7.11)	4175 (7.02)	4341.6 (7.07)
5.	Cost of fertilizers	7920 (12.46)	7745 (12.67)	7550 (12.69)	7738.3 (12.60)
6.	Cost of irrigation charges	3100 (4.87)	2600 (4.25)	2400 (4.03)	2700 (4.38)
7.	Cost of plant protection	4375 (6.88)	4250 (6.95)	4175 (7.02)	4266.6 (6.95)
8.	Interest on working capital @ 8%	3007 (4.73)	2950 (4.82)	2735 (4.60)	2897.3 (4.71)
9.	Depreciation on fixed capital	2200 (3.46)	2095 (3.42)	2025 (3.40)	2106.6 (3.42)
10.	Land revenue paid to government	0 (0)	0 (0)	0 (0)	0 (0)
11.	Rental value of owned land	10000 (15.73)	10000 (16.36)	10000 (16.81)	10000 (16.3)
12.	Interest on fixed capital @ 11%	4135 (6.50)	4025 (6.58)	3900 (6.55)	4020 (6.54)
13.	Family labour charges	3500 (5.50)	3350 (5.48)	3145 (5.28)	3331.6 (5.42)
14.	Total cost of cultivation	63537.0 (100)	61115.0 (100)	59455.0 (100)	61369.0 (100)

Table 1:- Resource use and Cost and Cultivation of Groundnut crop per hectare in different Size of Farms Group

Table 1 Reveals that cost and returns in groundnut cultivation in different size of farms group. Among different size of farms groups, the total cost of cultivation incurred by the small farms were high (Rs.63537/ha) as compared to medium (Rs. 61115/ha) and large farms (Rs.59455/ha). Sample average for total cost of cultivation was Rs. 61369/ha in different size of farms group. The gross returns obtained per hectare by small size farms were high (Rs.83130/ha) as compared to medium and large size farms (Rs.85575/ha and Rs. 89487/ha) respectively. The net returns per hectare obtained by small size farms were (Rs.22693/ha) as compared to medium and large size farms

(Rs.27060/ha and Rs.32432/ha) respectively. The yield was highest in case of large size farms (18.3qtls/ha) as compared to medium (17.5qtls/ha) and small size farms (17qtls/ha) respectively. Average cost of production per quintal was Rs.3338.8/qtl. Gross returns per hectare was Rs.86064. Input-Output ratio was highest in large size farms (1:1.37) followed by medium size farms (1:1.46) and lowest in small size farms group (1:1.56). This makes the sample average for input-output ratio was (1:1.46) in different size of farms.

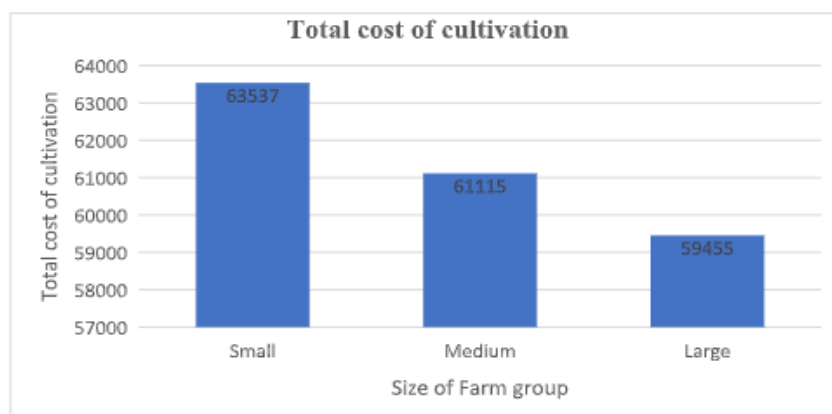


Fig 1:- Anova for resource use and cost of cultivation for groundnut crop in different size of farm groups

Source	d. f.	S.S.	M.S.S.	F. Cal.	F. Tab. 5%	Result	S. Ed. (±)	C.D. at 5%
Size group	2	648318.15	324159.08	22.24704491	3.40	S	98.559	203.426
Particular	12	386237080.97	32186423.41	2208.95498	2.18	S	47.346	97.723
Error	24	349701.18	14570.88	-	-	-	-	-
TOTAL	38		-	-	-	-	-	-

Table 2

In the above Anova table, in due to size group degrees of freedom is 2, sum of squares is 648318.15, mean sum of squares is 324159.08, F. Calculated value is 22.24704491, F. tabulated value @ 5% is 3.40, result is significant, standard deviation is 98.559 and cumulative deviation @ 5% is 203.426. In due to particulars degrees

of freedom is 12, sum of squares is 386237080.97, mean sum of squares is 32186423.41, F. Calculated value is 2208.95498, F. tabulated value is 2.18, result is significant, standard deviation is 47.346 and cumulative deviation @ 5% is 97.723. In error degrees of freedom is 24, sum of squares is 349701.18 and mean sum of squares is 14570.88.

Sl. No	Particulars	Size of Farms Group			Sample Average
		Small	Medium	Large	
1	Total Cost of Cultivation	63537	61115	59455	61369
2	Yield in quintals per hectare	17	17.5	18.3	17.6
3	Gross Returns per hectare	83130	85575	89487	86064
4	Net Returns per hectare	22693	27060	32432	27395
5	Cost of Production per Quintal	3555.1	3343.7	3117.7	3338.8
6	Input –Output Ratio	1:1.37	1:1.46	1:1.56	1:146
7	Price Per Quintal	3534	3215	3001	3250

Table 3:- Cost and Returns in groundnut per hectare in different Size of Farms Group

Table 3 reveals that the gross returns obtained per hectare by large size farms were high (Rs.83130/ha) as compare to medium size farms (Rs.85575/ha) and large size farms (Rs.89487 /ha) respectively. This makes sample average for gross returns was Rs.86064/ha in different size of farms group. Farm business income in small, medium and large size of farms group were Rs.30328/ha, Rs.34435/ha and Rs.34979/ha respectively. Sample average for farm business income was Rs.34747/ha in different size of farm group. The Net returns per hectare obtained by small size farms were low (Rs.22693/ha) as compared to medium (Rs.27060/ha) and large size farms (Rs.32432/ha)

respectively. Sample average for net returns was (Rs.27395/ha) in different size of farm group. Family labour income in small, medium and large size of farm groups were (Rs.3500/ha , Rs.3350/ha and Rs.3145/ha) respectively. Sample average for family labour income was (Rs.3331.6/ha) in different size of farm groups. Input-Output ratio for small, medium and large size of farm groups were (1:1.37, 1:1.46, 1:1.56) respectively. The sample average for input-output ratio was 1:1.46 in different size of farms.

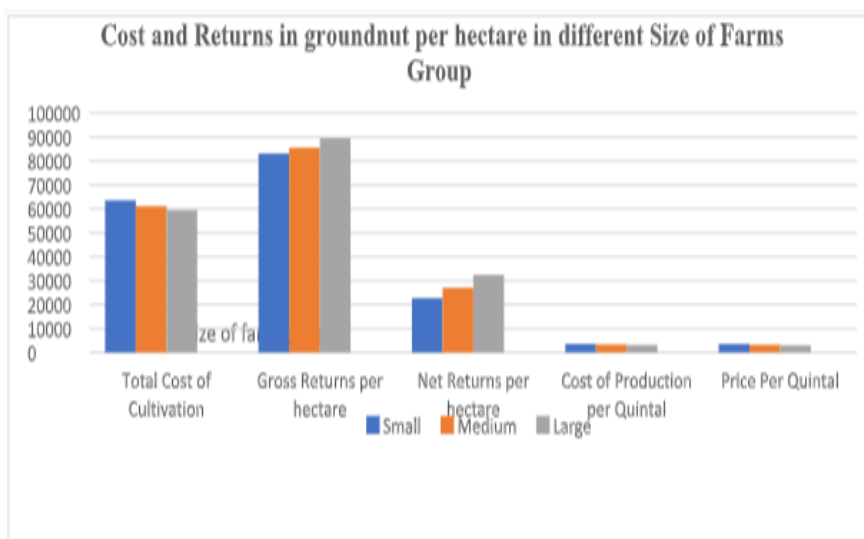


Fig 2:- Anova for cost and returns in groundnut crop in different size of farm groups

Source	d. f.	S.S.	M.S.S.	F. Cal.	F. Tab. 5%	Result	S. Ed. (±)	C.D. at 5%
Size group	2	13750325.78	6875162.89	0.874003372	4.46	NS	2290.020	4726.602
Particular	4	16754585829.97	4188646457.49	532.4806388	3.84	S	1773.842	3661.210
Error	8	62930309.99	7866288.75	-	-	-	-	-
TOTAL	14		-	-	-	-	-	-

Table 4

In the above Anova table, in due to size group degrees of freedom is 2, sum of squares is 13750325.78, mean sum of squares is 6875162.89, F. Calculated value is 0.874003372, F. tabulated value @ 5% is 4.46, result is not significant, standard deviation is 2290.020 and cumulative deviation is @ 5% is 4726.602. In due to particulars, degrees of freedom is 4, sum of squares is

16754585829.97, mean sum of squares is 4188646457.49, F. Calculated value is 532.4806388, F. tabulated value @ 5% is 3.84, result is significant, standard deviation is 1773.842 and cumulative deviation is 3661.210. In error, degree of freedom is 8, sum of squares is 62930309.99 and mean sum of squares is 7866288.75.

Sl. No	Cost concepts	Size of farm group			Sample Average
		Small	Medium	Large	
1	Cost A1	45902	43740	42410	44017.3
2	Cost A2	55902	53740	52410	54017.3
3	Cost B	60037	57765	56310	58037
4	Cost C	63537	61115	59455	61369

Table 5: Cost concepts in Groundnut crop per hectare in different Size of Farms Group

Table 5 reveals that cost concepts on different size of farms group per hectare. CostA1 was highest in small size farms (Rs.45902/ha) followed by medium size farms (Rs.43740/ha) and large size farms (Rs.42410/ha) respectively. Cost A2 in small, medium and large size of farms group was Rs.55902/ha, Rs.53740/ha and Rs.52410/ha respectively. Cost B was highest in small size farms (Rs.60037/ha) and lowest in large size farms

(Rs.57765 /ha) as compared to medium size farms (Rs.55165/ha) respectively. Cost C was highest in small size farms (Rs.63537/ha) and lowest in large size farms (Rs.61115/ha) as compared to medium size farms (Rs.59455/ha) respectively. Sample average for Cost A2, Cost B and Cost C was Rs.54017.3/ha, Rs.58037/ha and Rs.61369/ha in different size of farms group.

Sl. No	Particulars	Size of farm group			Sample Average
		Small	Medium	Large	
1	Gross Income	83130	85575	89487	86064
2	Farm Business Income	30328	34435	39479	34747
3	Farm investment income	36828	41085	46332	41415
4	Net Returns	22693	27060	32432	27395
5	Family Labour Income	3500	3350	3145	3331.6
6	Input output Ratio	1:1.37	1:1.46	1:1.56	1:1.46

Table 6:- Measures of Farm profitability in Groundnut crop per hectare in different Size of Farms Group

Table 6 reveals that the gross returns obtained per hectare by large size farms were high (Rs.83130/ha) as compare to medium size farms (Rs.85575/ha) and large size farms (Rs.89487 /ha) respectively. This makes sample average for gross returns was Rs.86064/ha in different size of farms group. Farm business income in small, medium and large size of farms group were Rs.30328/ha, Rs.34435/ha and Rs.34979/ha respectively. Sample average for farm business income was Rs.34747/ha in different size of farm group. The Net returns per hectare obtained by small size farms were low (Rs.22693/ha) as compared to

medium (Rs.27060/ha) and large size farms (Rs.32432/ha) respectively. Sample average for net returns was (Rs.27395/ha) in different size of farm group. Family labour income in small, medium and large size of farm groups were (Rs.3500/ha , Rs.3350/ha and Rs.3145/ha) respectively. Sample average for family labour income was (Rs.3331.6/ha) in different size of farm groups. Input-Output ratio for small, medium and large size of farm groups were (1:1.37, 1:1.46, 1:1.56) respectively. The sample average for input-output ratio was 1:1.46in different size of farms.

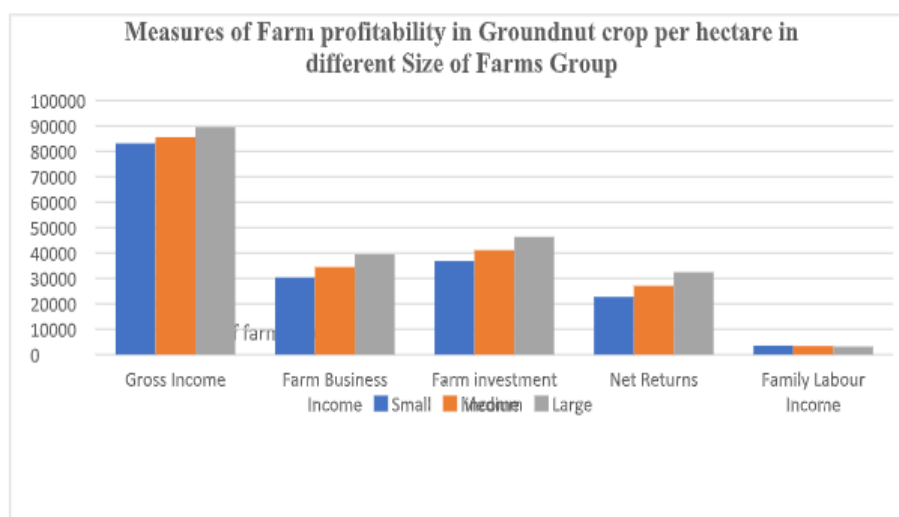


Fig 3:- Anova Measures of Farm profitability in Groundnut crop per hectare in different Size of Farms Group

Source	d. f.	S.S.	M.S.S.	F. Cal.	F. Tab. 5%	Result	S. Ed. (±)	C.D. at 5%
Size group	2	118937492.80	59468746.40	12.98943596	4.46	S	1747.043	3605.897
Particular	4	10935016442.27	2733754110.57	597.1190935	3.84	S	1353.254	2793.116
Error	8	36625914.53	4578239.32	-	-	-	-	-
TOTAL	14							

Table 7

In the above Anova table, in due to size group degrees of freedom is 2, sum of squares is 118937492.80, mean sum of squares is 59468746.40, F. Calculated value is 12.98943596, F. tabulated value @ 5% is 4.46, result is significant, standard deviation is 1747.043 and cumulative deviation @ 5% is 3605.897. In due to particulars degrees of freedom is 4, sum of squares is 10935016442.27, mean sum of squares is 2733754110.57, F. Calculated value is

597.1190935 , F. tabulated value is 3.84 result is significant, standard deviation is 1353.254 and cumulative deviation @ 5% is 2793.116. In error degrees of freedom is 8, sum of squares is 36625914.53 and mean sum of squares is 4578239.32.

III. CONCLUSION

The production of groundnut has increased largely due to productivity increase and increase in the area under the crop. The acreages under groundnut not influenced by improvement in the productivity but it largely depended on the other factors like rainfall and price of this crop. The cropping pattern was dominated by groundnut crop followed by groundnut, red gram maize and paddy. Resource use structure in groundnut was found to be varied among the size groups. Production cost of groundnut was varied according to size groups of holding. The per hectare cost of cultivation of groundnut was the highest on small size farms and lowest on large size farm. Among which rental value of land, hired human labour, fertilizers, manures, seeds were the major items of cost. The cost of cultivation varied among the size groups of groundnut growers.

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