



Estimation of Costs and Returns of Groundnut in Vizianagaram Districts of Andhra Pradesh, India

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Authors' contributions

This work was carried out in collaboration between both authors. Both authors read and approved the final manuscript.

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ABSTRACT

Groundnut crop is one of the important oil seed crop grown in Vizianagaram district. Though the Groundnut is cultivated on small area but it contributes sizable share in total earnings of the cultivator. However, yield and profit from Groundnut cultivation is uncertain because it is very sensitive and it badly affects from extreme climatic conditions so it requires special attention.

The marketing of Groundnut from producer to consumer also involves various activities like transportation, loading, and storage, etc. During this process of marketing the quality as well as quantity of Groundnut get damaged and lost. The Groundnut growers face number of problems at each stage of production, marketing, and distribution like lack of technical knowledge, lack of market intelligence, inadequate transportation, and major market yard facilities.

The socio-economic characteristics of farmers i.e., size of family, educational status, land utilization pattern, cropping pattern and fixed capital investment were studied. The standard cost concepts i.e., cost 'A', and cost 'B', cost 'C' was used in present study.

Majority of groundnut respondents (36%) had farming experience of 2 – 9 years, about 37% had 10

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to 20-year experience, 16% had 21-to-30-year experience, while 09% of the respondents had between 31 to 35-year experience of groundnut production. The mean years of farming experience was 17 years. This is an indication that more farmers are embracing production of the crop due to its profit advantage.

The total owned area is observed between 0.1-0.9 hectares of land, about 40% had 1 – 2 hectares, 22% had between 2 – 4 hectares and 07% had 4 – 10 hectares and none hold above 10 hectares. The average farm size is 1.5 hectares.

The cost A of groundnut cultivation was observed to be Rs.118560, Rs.115543, Rs.111606 and Rs.110040 per hectare of marginal, small, semi-medium, and medium land holding farmers.

Cost B it is the summation of Cost A, Rental Value of owned land and interest on value 67.89 of owned fixed capital.

It is observed as Rs.100281, Rs.97489, Rs.93760 and Rs.92036 per hectare of groundnut production in marginal, small, semi-medium and medium land holding farmers and the average value of cost B is Rs.95892 per hectare.

To find Cost C1 is the summation of Cost B and imputed value of family labor, family labor cost is given to be an Rs.7500, Rs.7550, Rs.7700 and Rs.8000 and got a solution of Rs.107781, Rs.105039, Rs.101460 and Rs.100036 per hectare.

Cost C2 it includes Cost B + 10 per cent of cost B. as managerial charges as calculated as a result Rs.118560, Rs.115543, Rs.115543 and Rs.110040 and the total input cost is also considered a cost C.

Keywords: Groundnut; income; employment; agronomic conditions kernels.

1. INTRODUCTION

India is the second largest groundnut oil producing country in the world, next to China. During 2018. India occupied about 13 per cent (5.8 million ha.) of world's oilseeds area, 5.2 per cent (25.2 million tons) of world's oilseeds production and 18 per cent of world's edible oil consumption. In the agricultural economy of India, oilseeds are very important, next to food grains in terms of area, production and value.

Groundnut is an income and employment oriented commercial crop and very much helpful for manufacturing vegetable oils [1,2]. The groundnut seed oil content varies from 44 to 50 per cent, depending upon the varieties and agronomic conditions. Its oil finds extensive use as a cooking medium, both as refined oil and "Vanaspati ghee". It is also used in soap-making and in manufacture of cosmetics, lubricants, olein, stearin and their salts. Kernels are also eaten raw. roasted or sweetened [3,4]. Groundnut Kernels have about 26.0 per cent protein, 47.5 per cent fat and 18.6 per cent carbohydrates, and they are rich in calcium, phosphorus, iron along with vitamin A, B and E. The Hand Picked and Selected (HPS) type of groundnut kernels are exported to other countries. The residual oilcake contains 7 to 8 per cent N, 1.5 per cent P₂O₅ and 1.2 per cent K₂O and can be used as a manure. It is important protein supplement in cattle and poultry rations. It

is also consumed as a confectionary product. Its cake can be used for manufacturing artificial fiber [5,6].

The haulms (plant stalks) are fed (green, dried or silage) to livestock. Groundnut shell is used as fuel for manufacturing coarse-boards and cork substitutes [7,8].

Groundnut is grown on a large scale in almost all the tropical and sub-tropical countries of the world.

The total world groundnut production is about 36.66 million tonnes from 21.8 million hectares (2016). The major groundnut producing countries are China, India, Nigeria, USA, Indonesia, Argentina, Sudan, Senegal and Myanmar [9,10]. With 6.0 million hectares and 8.2 million tones of nuts in shell, India share 22 per cent of the world's groundnut area and 21 per cent of the total groundnut production, and ranked first in area and second in production of groundnut in the world during 2020-2021.

2. METHODOLOGY

2.1 Sampling Design

Since the study was aimed at finding out the economics of production and marketing of Groundnut, the sample for the study necessarily involved the selection of cultivators as well as

market intermediaries for gathering the relevant data.

2.2 Selection of the Districts

The study was conducted in Vizianagaram district, which is purposively selected because it serves a great deal of convenience to the researcher in terms of accessibility, familiarity with area, time, money, and effort.

2.3 Selection of Blocks

A complete list of blocks obtained from district headquarter. There are 2 blocks in Vizianagaram district out of them s.kota block selected purposively for this study. There are 28 blocks in the vizianagaram district and 1 block is selected according to area of production.

2.4 Selection of Villages

The s.kota block is a revenue block in the Vizianagaram district of Andhra Pradesh, India. It has a total of 25 panchayat villages. 5percent of production area is selected randomly in S.kota block for the present study. Namely Dharmavaram, Pedha kandepalli, Pothanaoalli, Madhupada, Gairampeta, Sethampeta.

2.5 Selection of Farmers

Intensive survey of each selected village was made in consultation with the village Dharmavaram. Then list of all the Groundnut

growing 10 percent farmers was prepared from villages. All the Groundnut growing farmers were classified into three standard size groups on the basis of size of their operational land holdings.

Marginal farmer (below 1 ha) Small farmer (1-2 ha), Medium farmer (2-10ha)

From this list 100 respondents were selected randomly through proportionate allocation to the population.

3. RESULTS AND DISCUSSION

3.1 Cost of Groundnut Cultivation per Hectare

The cost of cultivation indicates the investment on the variable inputs used in the cultivation and the services rendered by fixed assets. The two major categories of cost involved in crop production. These are fixed and variable costs. Fixed costs (FC) refer to those costs that do not vary with the level of production or output while variable costs (VC) refer to those costs that vary with output. The cost input used by cultivators in the cultivation of groundnut was calculated for contribution of each input in total costs in all the four different size farm groups. The cost of cultivation of groundnut of sample farms is worked out in Rs/ha.

$$\text{Total Cost} = \text{Total Variable Cost} + \text{Total Fixed Costs}$$

Table 1. Cost of groundnut cultivation in different size farm groups

| S.No | Particular | Size of farm groups | | | | Average |
|------|----------------------------|--------------------------|--------------------------|--------------------------|--------------------------|----------------------------|
| | | Marginal | Small | Semi-medium | Medium | |
| 1. | Land Preparation | 20349 (17.16) | 17723 (15.33) | 14256 (12.77) | 12287 (11.15) | 16153.8 (14.17) |
| 2. | Cost of seed | 6293 (5.03) | 6266 (5.45) | 6266 (5.61) | 6266 (5.69) | 6272.75 (5.5) |
| 3. | Manures & Fertilizers | 19643 (16.56) | 19700 (17.04) | 19771 (17.71) | 19770 (17.96) | 19721 (17.30) |
| 4. | Cost of PPC | 9912 (8.36) | 9912 (8.57) | 9912 (8.88) | 9912 (9) | 9912 (8.69) |
| 5. | Cost of irrigation | 4500 (3.79) | 4000 (3.46) | 3500 (3.13) | 3000 (2.72) | 3750 (3.29) |
| 6. | Hired human labour | 21548 (18.17) | 21548 (18.64) | 21548 (19.35) | 21548 (19.58) | 21548 (18.91) |
| | Material cost | 82245 (69.36) | 79149 (68.64) | 75253 (67.48) | 72783 (66.16) | 77357.5 (67.89) |
| 7. | Intrest on working capital | 5757.15 (4.8) | 5540.43 (4.79) | 5267.71 (4.71) | 5094.81 (4.62) | 5415.025 (4.75) |

| S.No | Particular | Size of farm groups | | | | Average |
|------|---|---------------------|-------------------|-------------------|-------------------|-------------------|
| | | Marginal | Small | Semi-medium | Medium | |
| 8. | Depreciation | 2403 (2.02) | 2689 (2.32) | 2700 (2.41) | 3359 (3.05) | 2788 (2.44) |
| 9. | Land revenue | 73 (0.06) | 73 (0.06) | 73 (0.06) | 73 (0.06) | 73 (0.06) |
| | Cost A | 90478.15 | 87451.43 | 83293.71 | 81309.81 | 85633.52 |
| 10. | Rental value of land | 9000 (7.59) | 9200 (7.96) | 9600 (8.6) | 9800 (8.9) | 9400 (8.25) |
| 11. | Intrest on fixed capital | 803 (0.66) | 837 (0.72) | 866 (0.71) | 926 (0.86) | 858 (0.75) |
| | Cost B | 100281 | 97489 | 93760 | 92036 | 95892 |
| 12. | Owned labour | 7500 (6.32) | 7550 (6.53) | 7700 (6.89) | 8000 (7.27) | 7688 (6.74) |
| | Cost C1 | 107781 | 105039 | 101460 | 100036 | 103580 |
| 13. | 10 per cent of cost C1. as managerial charges | 10778.1 (9.09) | 10503.9 (9.09) | 10146.0 (9.09) | 10003.6 (9.09) | 10358.0 (9.09) |
| | Cost C2 | 118560 | 115543 | 111606 | 110040 | 113938 |
| | Total input cost (cost C) | 118560 | 115543 | 111606 | 110040 | 113938 |

Table 2. Cost and returns of groundnut

| S.No | Particulars | Size of farm groups | | | | Average |
|------|----------------------------------|---------------------|--------|--------------|--------|----------|
| | | Marginal | Small | Semi -medium | Medium | |
| 1 | Groundnut production in quintals | 42 | 45 | 46 | 48 | 45.25 |
| 2 | Total cost | 118560 | 115543 | 111606 | 110040 | 113938 |
| 3 | Gross income | 155652 | 166770 | 170476 | 177888 | 167696.5 |
| 4 | Net income | 37092 | 51227 | 58870 | 67848 | 53758.5 |
| 5 | B:C ratio | 1:31 | 1:44 | 1:53 | 1:62 | 1:47 |

It reveals that overall cost of cultivation of groundnut crop was Rs/ha 113938 and share of materials input cost was found to be Rs. 77357.5, which shared to 67.89 percent to the total cost. The large contribution has been observed in human labor use with Rs 21548 and shared of 18.91 percent to the total cost. The power use in the form of tractor hour was contributed the minimum share to the total cost of cultivation of groundnut, which shared 14.17 percent followed by fertilizer shared the maximum (17.30%) followed by seeds (5.5%), irrigation (3.29%). The input value of family labor use was noticed to be Rs. /Ha 7688. The cost of cultivation of groundnut per hectare in marginal, small, semi-medium and medium farm groups is Rs.118560, Rs. 115543, Rs.111606 and Rs.110040 respectively and the average cost of cultivation per hectare is 113938. The table clearly indicates that, the cost of cultivation of groundnut per hectare in marginal size group is higher than small and semi-medium farm groups followed by medium Cost on labor use involved in groundnut in marginal, small, semi-medium and medium.

Groups is found to be Rs. 113938 per hectare respectively.

4. CONCLUSION

The first hypothesis of the study, I The cost of production will increase in the decrease of farm size. Therefore, the total cost of selected sample farmer is Rs. 142288, Rs. 141030, Rs. 137040, and Rs. 135465 per hectare for marginal, small, semi-medium and large farmers respectively. On the above observation its clearly seen the cost of production is increasing, hence the first hypothesis prove.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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