



E-ISSN: 2278-4136
P-ISSN: 2349-8234
JPP 2018; 7(3): 3346-3349
Received: 01-03-2018
Accepted: 05-04-2018

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Economics of groundnut cultivation on MACS and non-MACS farms in Ananthapur district of Andhra Pradesh

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Abstract

The Andhra Pradesh Mutually Aided Co-operative Societies Act 1995 (APMACS) implemented in the state of Andhra Pradesh has rectified a number of restrictive provisions of the earlier co-operative law in Andhra Pradesh. The average size of the farm was 4.68 ha on mutually aided cooperative society (MACS) and 5.12 ha on non-MACS. Total human labour was 75.75 and 72.50 man days per hectare on groundnut MACS farms and control farms respectively. On an average the total cost of cultivation per hectare of groundnut was Rs. 46,883 on MACS and Rs. 47,699 on non-MACS farms. The gross income realized on MACS farms was slightly higher with Rs. 71,195 as against Rs. 70,697 on non-MACS farms.

Keywords: MACS, credit, non-governmental organizations

Introduction

Agriculture has been and remains an important sector of Indian economy. Agriculture and allied activities support livelihoods of nearly 70 per cent of India's rural population. Addressing poverty is the most significant challenge in this millennium, as clearly reflected in the millennium development goals. India has a population of 1.2 billion with a 29.8 per cent of population living below official poverty line (Planning Commission, 2012) [3]. Credit is important for development and poverty alleviation. It enables farmers and entrepreneurs to undertake new investments or to adopt new technology (Khandker and Faruquee, 2003) [2]. Agricultural co-operatives organise, promote and market, processing and storage of agricultural, horticultural and forest produce. They distribute agricultural machinery undertake wholesale, retail and foreign trade. Effectively, major agricultural processing, distribution, supplies and agro-marketing across India are carried on through cooperatives. The Co-operative Societies Act and its state counterparts did not provide a very enabling framework for emergence of business enterprises owned, managed and controlled by the members for their own development. Several state governments, therefore, have enacted the Mutually Aided Co-operative Societies (MACS) Act for enabling promotion of self-reliant and vibrant co-operative societies based on thrift and self-help. The Andhra Pradesh Mutually Aided Co-operative Societies Act (APMACS) 1995 implemented in the state of Andhra Pradesh has rectified a number of restrictive provisions of the earlier co-operative law in Andhra Pradesh. In the recent years, the focus of the Government of India, state governments and the various development agencies has been towards producer companies. Many of the non-governmental organizations (NGOs) in the country had been facilitating formation of co-operatives and farmer producer organizations. In the recent years some of them have graduated to facilitate formation of MACS and producer companies on behalf of state governments and developing funding agencies.

Against this background the present study has been taken up to estimate economics of groundnut cultivation on MACS and non-MACS farms in Ananthapur district of Andhra Pradesh.

Material and Methods

The present study was conducted in Andhra Pradesh state. Purposive-cum-random sampling technique was employed for the selection of sample in the present study. Ananthapur is the leading district in Rayalaseema regarding mutually aided cooperative societies (MACS) where 3472 mutually aided cooperative societies exist. Hence, Ananthapur district was purposively selected. The list of the mandals along with corresponding number of MACS farmers was prepared. One mandal from the district with maximum number of MACS farmers was selected purposively. The list of 25 villages covered by the MACS in selected mandal was prepared

and 10 villages were randomly selected for the present study. From the selected villages 60 MACS and 40 non-MACS farmers were randomly selected. The required data for the study were collected from the selected farmer using a pre-tested schedule for the agricultural year 2016-17.

Tools and techniques of analysis

Simple arithmetic averages and percentages were worked out to arrive at costs, returns and farm efficiency measures.

Cost concepts

Cost A₁: It includes: Value of hired human labour, value of hired and owned animal labour, value of hired and owned machine labour, value of seed (both farm seed and purchased), value of manures (owned and purchased) and fertilizers, depreciation on fixed assets, irrigation charges, land revenue, interest on working capital and miscellaneous expenses.

Cost A₂: Cost A₁ + rent paid for leased in land.

Cost B₁: Cost A₁ + interest of fixed capital (excluding land)

Cost B₂: Cost B₁ + rental value of owned land + rent for leased in land.

Cost C₁: Cost B₁ + imputed value of family labour.

Cost C₂: Cost B₂ + imputed value of family labour.

Cost C₃: Cost C₂ + 10 per cent of cost C₂ as management cost.

Farm efficiency measures

Farm business income = Gross income – Cost A₁

Family labour income = Gross income – Cost B₂

Net income = Gross income – Cost C₃

Farm investment income = Farm business income – imputed value of family labour (or) Net income + imputed rental value of owned land + interest on owned fixed capital invested

Results and Discussions

It is observed from Table. 1 that the average family size was 4.09 and 3.82 in the case of MACS and non-MACS farms respectively. The number of family males, females and children was larger on MACS compared to non-MACS. On an average 1.24 male members were available for farm work on MACS, whereas it was 1.0 on non-MACS. The number of females participating on the farm was 1.1 on MACS farms, where as, it was 0.8 on non-MACS. There was no participation of children on the farms.

Among the MACS farms 70 per cent of the members was literates and illiteracy was 30 per cent. Farmers with college education was 8.33 per cent, while those who had secondary school education stood at 18.34 per cent and those who had undergone primary school education was 43.33 per cent as shown in Table. 2. As against this in non-MACS 42.5 per cent of the members was illiterates and those who had primary, secondary school and college education were the order of 25, 17.5 and 15 per cent respectively. Family maintenance was the major concern of the head of the family and hence income earning sources found the top priority. Therefore inclination to become literates was relegated to backseat and also the non-MACS farmers have no feeling of being illiterates as long as they eked out their livelihood from some source.

Total cost of cultivation per hectare of groundnut was Rs.46883 on MACS and Rs.47699 on non-MACS farms (Table. 3). The break-up of total costs into operational costs and fixed costs indicated that the operational costs were Rs.41393 for MACS farmers and Rs.43012 on non-MACS farms. The break-up of total costs into operational costs and fixed costs indicated that the operational costs were Rs.41393

(88 per cent) for MACS farmers and Rs.43012 (90 per cent) for non-MACS farmers, while the fixed costs were Rs. 5490 (12 per cent) and Rs.4687 (10 per cent) for the corresponding farms. Human labour is required to perform various cultural practices viz., land preparation, sowing, application of manures and fertilizers and plant protection chemicals, weeding, harvesting and stripping. Of the total costs, human labour was the highest costing input service in the cultivation of rainfed groundnut. The expenditure incurred towards this resource service was Rs.14351 (31 per cent) for MACS farmers and Rs.13705 (29 per cent) for non-MACS farmers. Of the total costs the expenditure on machine power input service in the cultivation of rainfed groundnut was Rs. 9430 (20 per cent) on MACS farms and Rs. 8975 (19 per cent) on non-MACS farms. Seed was the major item of cost in the cultivation of selected enterprise amounting to Rs.6757 (14 per cent) for MACS farmers and Rs. 9308 (20 per cent) for non-MACS farmers. The cost of seed for MACS farmers was less when compared to non-MACS farmers. This is because the seed obtained by MACS farmers was at the subsidized price from Accion Fraterna (A.F). A.F is a Ecology Centre involved in people's empowerment natural resources management (NRM) through watershed development, drought management, environmental development and policy advocacy since 1982, working towards sustainable agriculture and sustainable environment, alternate livelihoods and diversification of rural livelihoods, building farmer's organizations and mutual cooperation, freedom from drought and poverty, and restoring human dignity and equity. Through MACS subsidized seed was distributed to members by A.F on manure and fertilizers the MACS farmers incurred Rs.5384 (12 per cent) while on non-MACS farms it was Rs.5070 (11 per cent). The non-MACS farmers incurred little more expenditure on plant protection chemicals with Rs.5162 (11 per cent) over MACS farmers Rs.4705 (10 per cent). Among the fixed costs, rental value of owned land was the major item. It was Rs.3500 accounting for 7 per cent in both MACS and non-MACS. The other items of fixed costs were land revenue, depreciation and interest on fixed capital. The analysis of cost structure of groundnut cultivation revealed that it was more for non-MACS farmers over MACS farmers. The difference was evidently due to the higher seed cost on non-MACS farms.

It is clear that from Table. 4 there was no leasing in activity among the selected farmers and hence the cost A₁ and cost A₂ were the same. On an average, the total cost of cultivation (Cost C₂) was higher at Rs.47699 on non-MACS farms over MACS farms (Rs.46883).

The details of physical output and gross returns per hectare of groundnut crop are presented in Table 5 On an average, the yield of main product per hectare was 14.02 and 15.69 quintals, while the yield of by - product was 1.96 and 1.94 cart loads on MACS and non-MACS farms respectively. The MACS and non-MACS farms realized a gross income of Rs.71195 and Rs.70697 respectively. The net income was high on MACS farms with Rs.24312 compared to Rs.22998 on non-MACS farms. MACS farms realized higher net income in the cultivation of rainfed groundnut in the study area.

It is clear that from Table. 6 the gross income realized on MACS farms was slightly higher with Rs.71195 as against Rs.70697 on non-MACS farms. Net income too exhibited similar trend, with MACS recording Rs. 24312 against Rs.22998 by non-MACS farms. MACS farms were able to secure Rs.1.51 per every rupee spent, while non-MACS farm

received Rs.1.48. Family labour income was another measure of farm efficiency which represents returns to farmers own labour and family labour. MACS farms derived more family labour income of Rs.26106 compared to non-MACS farms (Rs.24965). It was noticed that the MACS farms were efficient in utilization of resources in the cultivation of rainfed groundnut. Farm investment income was a measure that indicated returns to fixed capital. It was Rs. 26017 on MACS farms and Rs.24406 on non-MACS farms.

Conclusions

The average size of the farm was 4.68 ha on MACS and 5.12

ha on non-MACS. The per hectare value of assets for MACS farms was Rs. 10,87,554 and the same for non-MACS farms was Rs. 11,65,816. Total human labour was 75.75 and 72.50 man days per hectare on groundnut MACS farms and control farms. On an average the total cost of cultivation per hectare of groundnut was Rs. 46,883 on MACS and Rs. 47,699 on non-MACS farms. The price per quintal was more on MACS farms with Rs. 4,450 compared to Rs. 3,950 on non-MACS farms. The gross income realized on MACS farms was slightly higher with Rs. 71,195.7 as against Rs. 70,697.05 on non-MACS farms. Net income too exhibited similar trend, with MAC.

Table 1: Family composition and family labour contribution on selected farms (in number)

S. No	Particulars	MACS	Non-MACS
1	Family Composition		
	a. Male	1.63 (39.85)	1.59 (41.62)
	b. Female	1.35 (33.02)	1.26 (32.99)
	c. Children	1.11 (27.13)	0.97 (25.39)
	Total	4.09 (100)	3.82 (100)
2	Farm Family Workers		
	a. Male	1.24 (53.00)	1.0 (55.5)
	b. Female	1.1 (47.00)	0.8 (44.5)
	c. Children	-	-
	Total	2.34 (100.00)	1.8 (100.00)

Note: Figures in parentheses indicate percentages to the total S recording Rs. 24,312.54 against Rs. 22,998.05 by non-MACS groundnut farms.

Table 2: Educational Level of the respondents (in number)

S. No	Category of Education level	MACS	Non-MACS
1.	Illiterate	18 (30.00)	17 (42.50)
2.	Primary school	26 (43.33)	10 (25.00)
3.	Secondary School	11 (18.34)	7 (17.50)
4.	College	5 (8.33)	6 (15.00)
	Total	60 (100.00)	40 (100.00)

Note: Figures in parentheses indicate percentages to the total

Table 3: Cost of cultivation of groundnut and redgram component wise on MACS and Non-MACS farms (in rupees per ha)

S. No	Particulars	Groundnut		Redgram			
		MACS	Non-MACS	MACS	Non-MACS		
1	Operational Costs						
	a.	Human Labour	14351 (31)	13705 (29)	6216 (25)	6755 (26)	
		Owned	1794 (4)	1969 (4)	1696 (7)	2044 (8)	
		Hired	12557 (27)	11736 (25)	4519 (18)	4711 (18)	
	b.	Machine power	9430 (20)	8975 (19)	9073 (36)	8725 (34)	
		owned	2294 (5)	2208 (5)	1240 (5)	-	
		Hired	7136 (15)	6767 (14)	7833 (31)	8725 (34)	
	c	Seed	6757 (14)	9308 (20)	550 (2)	676 (3)	
	d	Manures and fertilizers	5384 (12)	5070 (11)	2055 (8)	3615 (14)	
		Manure	2160 (4.7)	2283 (5)	-	1137 (4)	
		Fertilizer	3224 (7)	2787 (6)	2055 (8)	2479 (10)	
	e	Plant protection chemicals	4705 (10)	5162 (11.7)	1675 (7)	1642 (5.6)	
	f	Interest on working capital	766 (2)	793 (2)	368 (1)	399 (2)	
		Total operational costs	41393 (88.7)	43012 (90.7)	19936 (79)	21812 (84.6)	
	2	Fixed costs					
			Land revenue	150 (0.3)	150 (0.3)	150 (1)	150 (1)
			rental value of owned land	3500 (7)	3500 (7)	3500 (14)	3500 (14)
		depreciation	919 (2)	523 (1)	813 (3)	99 (0.3)	
		Interest on fixed capital	920 (2)	514 (1)	818 (3)	44 (0.1)	
		Total fixed costs	5490 (11.3)	4687 (10)	5281 (21)	3793 (15.4)	
3	Total costs	46883 (100)	47699 (100)	25216 (100)	25605 (100)		

Note: Figures in parentheses indicate percentages to the total.

Table 4: Cost concepts in groundnut and production on MACS and Non-MACS farms (Rs per ha)

S. No	Particulars	Groundnut	
		MACS	Non-MACS
1	Cost A1/ A2	40669	41717
2	Cost B1	41590	42231
3	Cost B2	45090	45731
4	Cost C1	43383	44200
5	Cost C2	46883	47699
6	Cost C3	49599	50304

Note: Figures in parentheses indicate percentages to the total

Table 5: Output and returns per hectare of groundnut and redgram on MACS and non-MACS (Rs.per ha)

S. No	Particulars	Units	Groundnut	
			MACS	Non-MACS
1.	Yield in Physical terms			
a.	Main Product	Quintals	14.02	15.69
b.	By-Product	Cart Loads	1.96	1.94
2.	Monetary Units			
a.	Main Product	Rs.	62371	61971
b.	By-Product	Rs.	8824	8725
3.	Gross Returns	Rs.	71195	70697
4.	Cost of Cultivation	Rs.	46883	47699
5.	Net Returns	Rs.	24312	22998
6.	Returns per rupee of Expenditure	Rs.	1.51	1.48

Table 6: Measures of farm income in groundnut production on MACS and non-MACS farms (Rs. per ha)

S. No	Particulars	Groundnut	
		MACS	Non-MACS
1	Gross income	71195	70697
2	Net income	24312	22998
3	Farm Business Income	30526	28979
4	Family Labour Income	26106	24965
5	Farm Investment Income	26017	24406
6	Returns per rupee of expenditure	1.51	1.48

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