Original Research Article

A Study on Production and Marketing of Rice Cultivation in Vizianagaram District of Andhra Pradesh State

Abstract

The production and marketing of rice cultivation have been studied in Vizianagaram district of Andhra Pradesh during 2018-19. Tools such as costs and returns, marketing margins, input use efficiency, marketing margins and price spread were used for the study. The results have shown that the Benefit-Cost ratio is 1.05. The input use efficiency have shown a negative significance for chemical fertilizers, pesticides and seed rate. The price spread analysis have shown that the producers receive 27 per cent of the consumer price.

Kkey-words: rice, cost concepts, input use efficiency, price spread.

Introduction Need to expand and elaborate on the introduction to support the research with reported data and facts and prepare the basis for comparison later on to validate the work!!!! You need to address all the intended variables

In India, Rice (*Oryza sativa)* is one of the most important crops. Andhra Pradesh (AP) ranks 4th in Rice production and produces about 80.51 lakh tons. AP is a leading rice producer with a production of 12 percent of total rice produced in the country (Indiastat.com 2017-18). In Andhra Pradesh, Vizianagaram district has a rice production of 571000 tons in 1.25 thousand hectares (Agril. statistics at a glance 2017-18). The present study was taken upcarried out to know???? the production and marketing situation of rice with the following objectives:

1. to work out costs and returns in cultivation of rice,.
2. to analyse the input use efficiency of rice, and
3. to identify the price spread of rice cultivation.

Materials and methods:

A multi- stage sampling technique was adopted for selecting sampling units at various levels. In Andhra Pradesh, Vizianagaram district was selected as it has the production of rice in 1.25 thousand hectares. In Vizianagaram, Gatyada mandal was selected for the study and from this mandal, three villages namely Buradapadu, Ramavaram and Narava were selected. from each village 30 respondents were selected from each village making total sample size of 90 respondents. Need to elaborate on the above??? Why choosing 30 not more??? What was the research tool, its design and purpose, and what type of research approach was used??? Role of respondents and what data they offered for this research?

Analytical Framework

1) Costs and returns:

The different cost concepts used in this study are A1, A2, B1, B2, and C based on these cost concepts the production cost of rice was calculated. The Cobb-Douglas type of production function was fitted for the estimation of elasticities of important variables contributing to the yield of rice.

2) Resource efficiency:

The production function was used to find out the productivity of resources used in paddy cultivation. For this purpose, the Cobb-Douglas production function was employed. The single most advantage of this production function was that the input coefficients constituted the respective elasticitiesREF. The function was modified to include dummy variables.

$$Y = a + X_1^{b1} X_2^{b2} X_3^{b3} X_4^{b4} X_5^{b5} X_6^{b6} X_7^{b7} X_8^{b8}$$

Where,

Y= Total returns from paddy cultivation (Rs)

X_1= Area under paddy cultivation (ha)

X_2= Value of seed (Rs)

X_3= Tractor charges (Rs)

X_4= Cost of human labour used in paddy cultivation (Rs)

X_5= Cost on chemical fertilizers (Rs)

X_6= Cost on farm yard manure (FYM) (Rs)

X_7= Cost on plant protection chemicals (PPC) (Rs)

X_8= Amount of water applied (ha cm)

This Cobb-Douglas function was estimated using ordinary least square (OLS) approach after converting it into log-linear form. The estimable form of the equation is given below:

In Y= ln a+ b_1 ln X_1+ b_2 ln X_2+ b_3 ln X_3+ b_4 ln X_4+ b_5 ln X_5+ b_6 ln X_6+ b_7 ln X_7 + $b_8 X_8$+ b_{10}

Coefficients were tested for statistical significance by using 't' test.

3) a. Producer's share in Consumer's price:

It is the price received by the farmers expressed as a percentage to the retail price (i.e. price paid by consumer). If P_r is the retail price and P_f is the producer price then the producer's share in consumer's rupee P_s may be expressed

as:

$$P_S = \frac{P_f}{P_r} * 100$$

b. Marketing Margin of Middlemen:

The total payment (cost + purchase price) and receipts (sale price) of middlemen (ith agency).

Percentage margin of ith middleman = $\frac{P_{Ri} - (P_{pi} + C_i)}{P_{Ri}} * 100$

$??????? $

Where, P_{Ri} = Total Value of receipts per unit

P_{Pi} = Purchase value of goods per unit

C_{mi} = Cost incurred on marketing per unit.

c. **Total Cost of Marketing**:

The total cost incurred on marketing of rice by the farmers and intermediaries involved in the process of marketing was computed as:

$$C = C_F + C_{M1} + C_{M2} + C_{M3} + \ldots\ldots\ldots + C_{Mn}$$

Where,

C = Total cost of marketing

C_F = Cost incurred by producer in the marketing of rice

C_{M1} = Cost incurred by the middlemen in the market of rice other terms????

Marketing margin for the adopted marketing channel was worked out by comparing the prices prevailing at each stage of marketing. Since used prices were related to a particular point of time and as small concurrent margins were worked out.

Results and discussions

Costs and returns in rice production

Per hectare cost of cultivation of rice for a period of 2018-2019 is presented in Table 1. The operational cost is Rs. 60001.95/ha and the total cost of cultivation is Rs. 80994.99/ha. Among the variable costs, cost of human labour is highest accounting 37 per cent of the total cost and followed by manures and fertilizers accounting 13.27 per cent. Among the fixed costs, the rental value of the owned land is highest accounting 18.51 per cent of the total cost. The yield of the rice is 4640 (kgs/ha). The gross income and net income of producers is Rs. 85260/ha and Rs. 14928.18/ha, respectively.

Table 1: Cost of cultivation of rice in 2018-19 (Rs/ha

Particulars	Plant	Percentage contribution
1. Hired human labour	30327.00	37.44
2. Imputed value of family labour	3300.00	4.07
3. Seed cost	4500.00	5.50
4. Human labour (1+2)	36327.00	44.85
5. Animal power	0.00	0.00
6. Machine power	4500.00	5.50
7. Manures and fertilizers	10750.00	13.27
8. Plant protection	2062.50	2.54
9. Irrigation	1000.00	1.23
10. Total (3 to 9)	59139.50	73.01
11. Interest on working capital	862.45	1.06
12. Total operational cost	60001.95	74.08
13. Land revenue	600.00	0.74
14. Rental value of owned land	15000.00	18.51
15. Depreciation	233.78	0.28
16. Interest on fixed capital	1583.37	1.95
17. Total fixed capital	17417.15	21.50
18. Grand total	77419.10	95.58
19. Cost A1	70585.32	87.14
20. Cost A2	66198.03	81.73
21. Cost B1	66431.81	82.01
22. Cost B2	67031.81	82.70
23. Cost C1	70331.81	86.83
24. Cost C2	73631.81	90.90
25. Cost C3	80994.99	
YIELD (kgs per ha.)	4640.00	
Gross income	85260.00	
Net income	14928.18	
Benefit cost ratio on total cost	1.05	

Source: *primary data How were these obtained?????????*

Input use efficiency of rice

The Cobb-Douglas type of production function was fitted for the estimation of elasticities of important variables contributing to the yield of rice (Table 2). The value of coefficient of multiple determinations (R^2) was found 74.48 which means the total variation of the inputs (X_i) are explaining 74.48% of the variation of the about output (Y).

Table 2: Estimated cobb- Douglas production function

Variables	Parameter	Coefficients
Constant	A	2.467
Human labour (human-days)	x_1	0.155^{**} (0.0974)
Manure (kg.)	x_2	0.0079^{**} (0.049)
Chemical Fertilizers and pesticides (kg.)	x_3	-0.1200^{*} (0.0627)
Irrigation	x_4	0.43 (0.27)
Seed rate (kg.)	x_5	-0.2815^{**} (0.0912)
R^2	74.48	

Note: * and ** indicate significance at 5 per cent and 1 per cent, respectively. Figures within the parentheses are standard errors for the respective regression coefficients.

Regression co-efficient associated with human labour and manures were positive and statistically significant at 10% and 5% significance, indicating that these resources contributed positively to the returns of this crop. Raufu (2013) stated that cost of human labour was positively significant to rice yield. The ~~negative and significant co efficient~~ of The seed rate and the plant protection chemicals and fertilizers showed negative and statistically significant (at 10% significance) co-efficients indicat~~ed~~ing that these farms are using this input in excess quantity. Rao (2011) reported that seed rate and Phosphorus were negatively significant to rice yield.

The results showing that for every unit increase in human labour and manure ~~automate~~ the yield increased by 0.15 and 0.0079, respectively and for a unit increase in plant protection chemicals and fertilizers and seed rate, the yield will be decreased by 0.12 and 0.28 ~~per cent~~, respectively.

Marketing margins and Price spread of rice cultivation

The marketing margins of producers and other marketing intermediaries are quantified along the existing marketing channel for rice.

Channel: Producer- Miller- Wholesaler- Retailer- Consumer

Table 3: Price spread per quintal of rice in Vizianagaram district

S.No.	Particulars	Quintal per ha	Share in consumer's rupee (%)
1.	**Producer**		
	Net price received by producer	1455	27.00
	Marketing cost	198	3.75
	Gross price received by producer	1653	31.30
2.	**Miller**		
	Net price received by miller	2800	53.03
	Processing cost	1100	20.80
	Polishing cost	600	11.36
	Gross price received by miller	4500	85.22
3.	**Wholesaler**		
	Transportation	120	2.27
	Packing	40	0.75
	Loading and unloading	65	1.23
	Wholesaler margin	225	4.26
4.	**Retailer**		
	Transportation	50	0.94
	Labour	80	1.51
	Packing	30	0.56
	Total margins	180	3.40
5	**Consumers Price**	5280	100.00
	Marketing cost	2283	

Source: *Primary data*

Producers share in consumer rupee was 27 per cent (Table 3). Producer incurred marketing cost of Rs. 198. The total net sale price for producer is Rs. 1455 and gross price is Rs. 1653/q. The rice miller gross and net price is Rs. 4500 and Rs. 2800, respectively and the processing cost and polishing cost is Rs. 1100 and Rs. 600, respectively. The wholesaler got a margin of Rs. 225 and cost incurred by wholesaler for transportation, packing and loading and un loading is Rs. 120, 40 and 65, respectively. The retailer got a margin of Rs. 180 and he

incurred a cost for transportation, labour and packing is Rs. 50, 80 and 30 respectively. The consumers price is Rs. 5280.

Conclusion Validate with reported literature

From the analysis, the total cost of cultivation of rice Rs. 80994.99 per hectare and from variable costs human labour accounted more cost followed by manures and fertilizers and rental value of the land. The Benefit cost ratio of the total cost is 1.05. The total operational cost is Rs. 60001.95. From the analysis of input use efficiency, human labour and manures were positively contributed to the returns of the crop and seed rate and chemicals and fertilizers shown that there is excessive quantity in usage. The producer share in consumer rupee is 27 per cent.

References Carefullty review your references write up o match journal requirrements!!! Plus you need to modify your introduction with more elaboaret literature support.

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