Research Paper

Volume : 2 | Issue : 2 | Feb 2013 • ISSN No 2277 - 8179

Production Costs And Efficiency of Marketing of Paddy (PR 106) in Hanumangarh District of Rajasthan

Agriculture

KEYWORDS :

Parvinder Jeet Kaur	M.Sc. Student, Department of Agricultural Economics COA, SKRAU, Bikaner, Rajasthan
I. P. Singh	Head, Department of Agricultural Economics COA, SKRAU, Bikaner, Rajasthan
Shirish Sharma	Senior Research Fellow, Department of Agricultural Economics COA, SKRAU, Bikaner, Rajasthan

ABSTRACT

The study was conducted in Hanumangarh district of Rajasthan which has highest production under paddy cultivation. Tibbi tehsil in Hanumangarh and two villages in Tibbi tehsil were selected on the basis of highest area under paddy (PR 106). A sample of 50 farmers was surveyed for input use pattern in paddy (PR 106) and its marketing. The sample included 25 small, 16 medium and 9 large farms. On an overall basis, cost of cultivation of paddy (PR 106) was Rs. 31815.16. It had a tendency to increase with increase in the size of holding. The gross returns, on an average, were Rs.75210 and the net income was Rs. 43396.50 per ha. The marketable surplus had a tendency to increase with increase in farm size. Due to immediate cash needs, there was no difference in marketed and marketable surplus. The market analysis of paddy (PR 106) revealed that channel I was more remunerative because farmer's share in consumer rupee was highest (59.48 per cent). The net share of commission agent was 1.13 percent. The net share of wholesaler was 4.02 per cent share in consumer rupee. The net share of miller was 13.14 percent and the net share of retailer was 2.73 percent. Price spread was maximum in channel II (44.59 per cent) followed by channel I (40.49 per cent). Modified Marketing efficiency measure of channel I was 1.56 followed by channel II (1.24). Therefore, channel I was more efficient than channel II.

1. INTRODUCTION

Marketing is the ultimate stage where the farmer converts all his efforts and investment into cash. Any bad treatment at this point, which is extremely sensitive, will definitely affect the farmer's enthusiasm for further investment and continuation of farm business. With the introduction of regulated markets in India, the traditional agricultural market sector has started witnessing fundamental change in the market conditions. However, regulated markets are not operating effectively and properly due to some limitations.

An efficient marketing system is an important means for raising the income levels of the growers on the one hand and increasing the consumer satisfaction on the other. Growers allocate resources according to the comparative advantage of individual crops and invest to obtain increased productivity and production. Marketing efficiency is related to the cost involved in moving goods from the producer to the consumer and to the quantity of services offered. A reduction in marketing cost without affecting consumer satisfaction indicates improvement in efficiency. Marketing cost would measure the extent of market services performed. If the services are numerous and varied, the cost will also be higher. The marketing margin is a measure of the market power. The larger the number and strength of the intermediaries, the larger would be their margin.

Hanumangarh district in Rajasthan has 18.17 thousand hectares of area under paddy cultivation (2008) with production of 76.21 thousand tonnes. Hanumangarh district ranks first in production and second in area of paddy. Marketing is regarded as important multiplier and effective engine of development. The study was carried out with following objectives in view viz. (i) To study production cost and returns per hectare of paddy (PR 106) cultivation (iii) to study marketable surplus, marketed surplus, price spread and marketing efficiency in different marketing channels of paddy (PR 106).

2. METHODOLOGY

Hanumangarh district of Rajasthan was selected purposively as it ranked first in production of paddy in the state. Tibbi tehsil and two villages namely, Ratakhera and Naivala were selected on the basis of highest area. The farmers were classified in to small (up to 2 ha), medium (> 2ha ≤ 4 ha) and large (> 4 ha). A sample of 50 farmers was drawn with probability proportional to number of farmers in each size group. The sample included 25 small, 16 medium and 9 large farms. The primary data pertaining to crop year 2010-11 were collected by pre-tested schedules through personal interview method.

Statistical Tools:

2.1.1 Cost and Income measures :

Total operational cost: It is variable cost of inputs used in production process.

Fixed cost: It includes interest on fixed capital, land revenue, rental value of owned land and depreciation.

Gross income: GI = Qm X Pm + Qb X Pb

Where,
GI = Gross Income
Qm = Quantity of main product
Pm = Price of main product
Qb = Quantity of by- product
Pb = Price of by-product

Net Income: Gross Income– Total cost of Cultivation

2.1.2 Cost of marketing:

The total cost incurred on marketing by various intermediaries involved in the sale and purchase of the commodity till it reaches the ultimate consumer was computed as follows.

C=Cf+Cm1+Cm2+Cm3+……..+Cmn

Where,
C = Total cost of marketing
Cf = Cost borne by the producer farmer from the time the produce leaves the farm till the sale of the produce , and
Cmn = Cost incurred by the ith middlemen in the process of buying and selling

2.1.3 Marketable surplus: MS= P – C
Where,
MS = Marketable surplus
P = Total production
C = Total requirements (family and farm)

2.1.5 Marketed surplus: It refers to that portion of the marketable surplus which is actually marketed.

2.1.6 Producer's share in consumer's rupee:

$$P_s = \frac{P_F}{P_C} \times 100$$

Where,
P_S = Producer's share in consumer rupee
P_F = Price of the produce received by the farmer
P_c = Price of the produce paid by the consumer.

2.1.7 Marketing margin of middleman:
(a) Absolute margin = $P_{Ri} - (P_{pi} + C_{mi})$

$$\frac{P_{RI} - (P_{Pi}+Cmi)}{P_{RI}} \times 100$$

Where,
P_{Ri} = Total value of receipts (sale price)
P_{pi} = Total purchase value of goods (purchase price) and
C_{mi} = cost incurred in marketing

2.1.8 Marketing Efficiency:
To study the marketing efficiency, Acharya's measure of modified marketing efficiency was used:

MME = [RP÷ (MC+MM)] –1

Where;
MME =Modified measure of marketing efficiency
RP = Retailer's sale price (Rs/qtl) and;
RP = FP+MC+MM.
MC = Total Marketing Cost (Rs/qtl)
MM = Total net margins of intermediaries (Rs/qtl)
FP = Net price received by farmers (Rs/qtl)

3. RESULTS AND DISCUSSION:

3.1 Production Aspects:

The cost and returns analysis of paddy (P R 106) is given in Table 1. It reveals that on an average, the total cost of cultivation per hectare of paddy cultivation was Rs.31815.16 on different size of farms. It was Rs. 28671.04 on small, Rs. 32765.39 on medium and Rs. 34003.67 on large farms. It increased with increase in size of holding. On an overall basis, productivity of paddy (PR 106) was 75.21 quintals per hectare. The yield was highest on large farms (78.75 quintals/ha) followed by medium farms (75.38 quintals) and small farms (71.50 quintals) which indicated that as the size of holding increased, the productivity of paddy (P R 106) also increased. The gross returns also increased with increase in the size of holding. The gross returns varied between Rs. 71500 to Rs. 78750. The net income was higher on large farms (Rs. 44746.33) followed by small farm (Rs. 42828.96). The reason for higher net income on large farm is efficient use of resources. The cost of production of paddy (P R 106) varied between Rs 400.99 and Rs 434.67.

Table 1 Cost and returns in paddy (PR-106) (Rs.)

Item	Size of holdings			
	Small	Medium	Large	Overall
Total operational cost	20376.04 (71.07)	22420.79 (68.43)	22868.67 (67.25)	21888.49 (68.80)
Total fixed cost	8295 (28.93)	10345 (31.57)	11135 (32.75)	9926.67 (31.20)
Total cost	28671.04 (100)	32765.79 (100)	34003.67 (100)	31815.16 (100)
Yield (quintals/ ha)	71.50	75.38	78.75	75.21
Gross income (Rs.)	71500	75380	78750	75210
Net income (Rs.)	42828.96	42614.21	44746.33	43396.50
Cost of production (per quintal.)	400.99	434.67	431.79	423.02

*Figures in parenthesis are percent of total cost.

3.2 Marketable surplus and Marketed surplus

The analysis of marketable surplus of paddy (P R 106) per farm (Table 2) indicates that on small farm, the marketable surplus was 130.12 quintals. In case of medium and large farm, it was 344.38 quintals and 712.91 quintals, respectively. The marketable surplus showed a tendency to increase with increase in farm size. Due to cash needs in the post-harvest period, the farmers did not stock paddy (P R 106) for sale in lean months. Therefore, there was no difference in marketable and marketed surplus of paddy (P R 106).

Table 2: Marketable and marketed surplus of Paddy (PR-106).

Category	Marketable surplus			Marketed Surplus
	Production	Home consumption	Marketable surplus	
Small	132.27 (100)	2.15 (1.63)	130.12 (98.37)	130.12 (98.37)
Medium	347.50 (100)	3.12 (0.90)	344.38 (99.10)	344.38 (99.10)
Large	717.41 (100)	4.50 (0.63)	712.91 (99.37)	712.91 (99.37)
Overall	399.06 (100)	3.26 (0.82)	395.80 (99.18)	395.80 (99.18)

3.3 Marketing Aspects:

The marketing cost, margins and price spread, computed for two important marketing channels are presented in this section.

Channel-I : Producer→ Commission agent→ Wholesaler→ Miller→ Retailer→ Consumer
Channel-II : Producer→ Commission agent→ Miller→ Wholesaler →Retailer→ Consumer

Table 3 reveals that marketing cost incurred by producer in channel I and channel II was almost same which Rs. 56 was per quintal of paddy (PR 106). Cost incurred by commission agent was 1.13 per cent, by wholesaler 4.02 per cent, by miller 13.14 per cent and by retailer 2.73 per cent of consumer rupee in channel I. The farmer's share in the consumer rupee was 59.48 per cent in channel-I and price spread was as high as 40.49 per cent, out of which, 23.80 per cent was accounted for by marketing cost and 16.71 per cent was accounted for by margins. In channel II, cost incurred by commission agent was 1.09 per cent, by miller 17.17 per cent, by wholesaler 3.28 per cent and by retailer 3.08 per cent of consumer rupee. The farmer's share in consumer rupee was 55.59 per cent. This shows that Channel-I ensured higher producer's share in consumer rupee than Channel-II. The perusal of Table 4 reveals that producer's share in consumer rupee was 55.59 per cent and price spread was as high as 44.59 per cent, out of which, 27.73 per cent was accounted for by marketing cost and 16.86 per cent was accounted for by margin.

Table 3: Marketing cost of paddy (PR-106) through Channel-I and Channel-II

	Channel-I		Channel-II	
Particulars	Rs./ quintal	Per cent share in consumer rupee	Rs./ quintal	Per cent share in consumer rupee
Net price received by producer	1200	59.48	1000	55.59
Cost incurred by producer				
Loading charges	2.50	0.12	2.50	0.14
Unloading charges	1.50	0.07	1.50	0.08

Volume : 2 | Issue : 2 | Feb 2013 • ISSN No 2277 - 8179

Transportation	20.00	0.99	20.0	1.11
Cost of gunny bags	30.00	1.49	30.00	1.67
Charges of grading	2.00	0.10	2.00	0.11
Total cost	56.00	2.78	56.00	3.11
Producer sale price/CA purchase price	1256	62.26	1056	58.70
Cost incurred by CA				
Mandi tax @ 1.6 Per cent	20.10	1.00	16.90	0.94
Weighing	2.75	0.14	2.75	0.15
Total cost	22.85	1.13	19.65	1.09
Net margin of CA	25.12	1.25	21.12	1.17
Sale price of CA / purchase price of Wholesaler	1303.97	64.64	1096.77	60.96
Cost incurred by Wholesaler				
Sale tax @ 4Per cent	52.16	2.58	-	-
Loading charges	2.50	0.12	-	-
Unloading charges	1.50	0.07	-	-
Transportation	25	1.24	-	-
Total cost	81.16	4.02	-	-
Net margin of wholesaler	32.60	1.61	-	-
Sale price of wholesaler/purchase price of Miller	1417.73	70.28	-	-
Cost incurred by miller				
Sale tax @ 4Per cent	-	-	43.87	2.44
Transportation charges from mandi to mill shop	30	1.49	30	1.67
Labour charges for loading and unloading	5.00	0.25	5.00	0.28
Storage facilities	30.00	1.49	30.00	1.67
Processing	200.00	9.91	200.00	11.12
Total cost	265	13.14	308.87	17.17
Net margin of miller	141.77	7.03	109.68	6.10
Value of husk @ Rs.3/kg assuming grain, husk ratio of 70:30 per quintal.	90.00	4.46	90.00	5.00
Total net margin of miller	231.77	11.49	199.68	11.10
Sale price of miller/Purchase price of wholesaler	1914.50	94.90	1605.32	89.23
Cost incurred by Wholesaler				
Transportation charges from mandi to shop	-	-	25.00	1.39
Labour charges for loading and unloading	-	-	4.00	0.22
Storage facilities	-	-	30.00	1.67
Total cost	-	-	59.00	3.28
Net margin of Wholesaler	-	-	40.13	2.23
Sale price of Wholesaler /Purchase price of retailer	-	-	1701.45	94.58
Cost incurred by retailer				
Transportation charges from mandi to shop	20.00	0.99	20.00	1.11
Labour charges for loading and unloading	5	0.25	5	0.28
Storage facilities	30	1.49	30	1.67
Total cost	55	2.73	55	3.06
Net margin of retailer	47.86	2.37	42.54	2.36
Sale price of retailer /Purchase price of consumer	2017.36	100	1798.99	100

Note: Value of husk @ Rs.3/kg assuming grain, husk ratio of 70:30 per quintal. CA – commission agent

Table 4: Price spread in Marketing of paddy (106) in Channel-l and Channel-lI

	Channel-l		Channel-lI	
Particular	Rs/ quintal.	Per cent share in consumer rupee	Rs/ quintal.	Per cent share in consumer rupee
Producer's net price	1200	59.48	1000	55.59
Cost incurred by				
Producer	56	2.78	56	3.11
Commission agent	22.85	1.13	19.65	1.09
Wholesaler	81.16	4.02	59	3.28
Miller	265	13.14	308.87	17.17
Retailer	55	2.73	55	3.08

Total cost	451.01	23.80	498.52	27.73
Margin of				
Commission agent	25.12	1.24	21.12	1.17
Wholesaler	32.6	1.61	40.13	2.23
Miller	231.77	11.49	199.68	11.10
Retailer	47.86	2.37	42.54	2.36
Total margin	337.35	16.71	303.47	16.86
Sale price of retailer/ purchase price of consumer	2017.36	100.00	1798.99	100.00

3.4 Marketing Efficiency

Table 5 reveals that the Channel I was more efficient then channel II. Marketing efficiency of channel I was 1.56 followed by channel II (1.24).

Table 5. Marketing Efficiency in Channel I and Channel II.

	Channel I	Channel II
Retailer's sale price	2017.36	1798.99
Total marketing costs	451.01	498.52
Total net margins of intermediaries (MM)	337.35	303.47
Net price received by farmers	1200	1000
MME	1.56	1.24

4. CONCLUSIONS:

Cost of cultivation of paddy (PR 106) showed tendency to increase with increase in the size of holding. However per hectare yield was higher on large farms as compared to medium and small. Therefore, gross returns per hectare of paddy cultivation were higher on large farms. In case of paddy (PR 106), channel I (Producer→ Commission agent→ Wholesaler → Miller→ Retailer→ Consumer) was more efficient as it ensured higher percent share to the farmer in the consumer rupee and MME measure for channel I was 1.56.

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