



MARKETING EFFICIENCY OF COCOA CROP IN WEST GODAVARI DISTRICT OF ANDHRA PRADESH

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ABSTRACT

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The present study titled “Marketing Efficiency of Cocoa Crop in West Godavari District of Andhra Pradesh” was conducted to evaluate the marketing system of cocoa with specific focus on identifying marketing channels, assessing their efficiency, and identifying constraints faced by farmers. A multistage purposive sampling technique was employed to select 120 cocoa farmers and 40 intermediaries from six villages across three major mandals of the district. Four key marketing channels were identified:

Channel I (Farmers → Cadbury Agent),

Channel II (Farmers → Heritage Agent),

Channel III (Farmers → Village Trader → Cadbury Agent),

Channel IV (Farmers → Village Trader → Heritage Agent).

The most preferred marketing channel was Channel I, used by 48.3 percent of farmers. Marketing efficiency was highest in Channels I and II, both with a perfect efficiency score of 1.0, attributed to direct company procurement and absence of intermediaries. Producer's share in consumer rupee was also 100 percent in these channels. Major constraints identified through Kendall's Coefficient of Concordance were non-remunerative prices, price fluctuation, lack of market information, inadequate storage, and absence of regulated markets. Findings suggest strengthening regulated markets and farmer collectives like FPOs to improve marketing outcomes and farmer income.

KEYWORDS: Cocoa, marketing efficiency, marketing channels and constraints.

INTRODUCTION

The cocoa tree (*Theobroma cacao* L.), native to the tropical regions of Central and South America, has gained prominence as a valuable commercial crop globally, particularly for its seeds used in the production of chocolate, beverages, and cosmetics. Cocoa cultivation is gradually expanding in India due to increasing demand for chocolate-based products and its suitability as an intercrop in plantations like coconut and oil palm. Globally, cocoa is grown in over 50 tropical countries, with Côte d'Ivoire (47.91 Lha) having the highest area under cocoa followed by Indonesia (14.10 Lha) & Ghana (11.50 Lha).

Andhra Pradesh leads in cocoa cultivation with 44.9 thousand ha and 13.62 Mt production but lower productivity (397 kg/ha). Kerala, with 18.8 thousand ha, produces 11.82 Mt and has the highest productivity (692

kg/ha). This shows Kerala's more efficient and intensive cocoa farming practices.

West Godavari district leads cocoa production in Andhra Pradesh, cultivating 22,015 hectares and producing 11,773 tonnes. Cocoa is mainly grown as an intercrop under coconut and oil palm due to its shade-loving nature. Company linkages with Cadbury and Heritage boost adoption, yet farmers face market access and price transparency issues. Andhra Pradesh ranks first in cocoa area in India, with major cultivation in West Godavari, East Godavari, and Visakhapatnam. Despite potential, the cocoa supply chain remains underdeveloped, with issues like fragmented market access, low bargaining power, and inefficiencies in marketing channels. Therefore, this study was undertaken with the following objectives:

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To identify major marketing channels in cocoa marketing.

To assess the marketing efficiency in cocoa.

To explore the major marketing constraints in cocoa.

METHODOLOGY

The state of Andhra Pradesh was purposively selected for the study as it has the largest area under cocoa cultivation in India. Additionally, the researcher hails from this state and is well-acquainted with the regional language (Telugu), which facilitated better rapport with respondents and enabled in-depth data collection through personal interactions. The erstwhile West Godavari district was purposively chosen as it ranks first in area and production of cocoa in the state. From this district, three mandals Tadepalligudem, Pedavegi, and Denduluru were selected based on the highest area under cocoa cultivation. In each mandal, two villages with the largest cocoa area were selected, making a total of six villages. From each village, 20 cocoa farmers were selected, resulting in a total sample size of 120 farmers. Additionally, 40 marketing intermediaries from the same region were selected to assess marketing channels, costs, margins, and constraints. Primary data were collected using a well-structured and pre-tested interview schedule covering various aspects such as marketing channels, marketing costs, price spreads, marketing efficiency, and constraints in cocoa marketing. The study pertains to the agricultural year 2024–2025.

Marketing costs

$$TC = CP + \sum MC$$

Where, TC= Total cost of marketing

CP= Costs incurred by producer in marketing

MCi= Marketing costs incurred by the ith trader

Marketing margins

$$Am = Pm - (Pb + Mc)$$

Where, Am = Margin of middlemen or trader

Pm = Selling price of trader

Pb = Buying price of trader

Mc = Marketing costs born by the trader

Producer's share in consumer's rupee

$$P = (PF / PR) \times 100$$

Where, P = Producer's share in consumer's rupee

PF = Price received by the farmer

PR = Price paid by the consumer

Marketing efficiency

Marketing Efficiency (ME) was calculated by the Acharya method. (Acharya and Agarwal, 2004)

$$MME = FP / (MC + MM) \text{ or}$$

$$MME = [RP / (MC + MM)] - 1$$

Where, MME = Modified measure of Marketing Efficiency

MM = Net marketing margins

FP = Net price received by the farmer

RP = Price paid by the consumer or Retailer's price

MC = Total marketing costs

Kendall's Coefficient of Concordance

Kendall's Coefficient of Concordance (Kc) is a non-parametric statistic used to assess the degree of agreement among raters (or judges) ranking a set of items.

$$Kc = \frac{\sum \left(R_j - \frac{R_j}{n} \right)^2}{\frac{1}{12} m^2 (n^3 - n)}$$

where ,

Kc = Kendall's coefficient

m = No. of respondents assigning ranks

n = No. of constraints ranked

Rj = Rank total of columns j.

J = Ranks assigned 1 to n.

$$\chi_{cal} = Kc (n-1) m$$

$$\chi_{tab} \text{ at } (n-1) \text{ df}$$

If χ_{cal} is higher than χ_{tab} , the judges are in strong agreement about the ranks they were assigned to the given constraints.

RESULTS AND DISCUSSION

Marketing Channels

Marketing channels for cocoa refer to the sequence of intermediaries through which cocoa beans pass

from farmers to final buyers or processors. The choice of marketing channel is influenced by factors such as accessibility, payment security, proximity, and company affiliations. In the study area, farmers had access to four primary marketing channels for selling their cocoa produce:

Channel I: Farmers → Cadbury Agent

Channel II: Farmers → Heritage Agent

Channel III: Farmers → Village Trader → Cadbury Agent

Channel IV: Farmers → Village Trader → Heritage Agent

These channels reflect the dominant procurement mechanisms adopted by private companies operating in the district. The agents act either as company-appointed buyers or licensed collectors working on a commission basis.

Distribution of Farmers by Marketing Channels

As shown in Table 1, the majority of farmers (48.3%) sold their produce directly to Cadbury agents (Channel I), followed by 30.8% through Heritage agents (Channel II). The remaining farmers sold their produce

via village traders, who then supplied to either Cadbury or Heritage.

2. Assessment of Marketing Efficiency

Marketing efficiency was calculated using the Acharya & Agarwal method. The results are summarized below:

The cost of production for farmers remains constant at (226.95 per kg across all four marketing channels, but the price received by farmers varies, being highest in Channel 1 (₹380.23/kg) and lowest in Channel 4 (₹354.15/kg). After accounting for marketing costs incurred by farmers, the net price received and farmer margins show a declining trend from Channel 1 to Channel 4, indicating reduced profitability as more intermediaries are involved. Channels 1 and 2 show minimal marketing costs and no price spread, resulting in the highest marketing efficiency (1.00) and a producer's share of 100 percent in the consumer rupee. In contrast, Channels 3 and 4 involve village traders, which increases total marketing costs and margins, leading to higher price spreads of ₹22.99/kg and ₹26.50/kg, respectively. Consequently, marketing efficiency declines to 0.94 and 0.93, and the producer's share in the consumer rupee falls to 93.98 percent in Channel 3 and 93.04 percent in

Marketing channels	Frequency	Percentage (%)
Channel I: Farmers → Cadbury Agent	58	48.3%
Channel II: Farmers → Heritage Agent	37	30.8%
Channel III: Farmers → Village Trader → Cadbury	14	11.6%
Channel IV: Farmers → Village Trader → Heritage	11	9.3%
Total	120	100.0%

Channel 4, highlighting that direct marketing channels are more efficient and beneficial to farmers.

From the above table, per hectare returns of cocoa orchard is presented. Based on the information given by respondents, the yield from hectare of cocoa fluctuates around 13 to 18 quintals based on the favourable climatic conditions like rainfall, low pests and disease attack etc. The mean yield per hectare was 782.2kgs of dried beans per hectare. The price received per kg dried beans by farmer varies based on demand and supply and also varies based on the buyer (village trader and company

agents). The average price per kg of cocoa dried beans was Rs. 372. The gross returns from cocoa was Rs. 2,92,938 with net returns of Rs. 1,14,284 per hectare.

Gross returns/cost of cultivation was 1.64 which indicated that the cocoa crop was profitable.

3. Major Constraints in Cocoa Marketing

The cocoa growers were asked on each constraint to identify and rank most important constraints. To verify whether the respondents are in agreement with each

Table 1. Marketing cost, market margin, price spread and marketing efficiency

Marketing Functionaries	Particulars	Price per kg (Rs.)			
		Marketing channels			
		1	2	3	4
Farmer	Cost of production	226.95	226.95	226.95	226.95
	Price received by farmer	380.23	377.85	359.18	354.15
	Marketing cost incurred by farmer	1.69	1.48	1.82	1.75
	Net price received by farmer	378.54	376.37	357.36	352.40
	Margin to farmer	151.59	149.42	130.41	125.45
Village trader	Marketing cost incurred by Village trader			5.75	6.23
	Price received by village trader or price paid by company agent			382.17	380.65
	Margin to village trader			17.24	20.27
Company agent	Marketing cost incurred by commission agents				
	Price Paid by company agent	380.23	377.85	382.17	380.65
	Total marketing cost	1.69	1.52	7.57	7.98
	Total margin	151.59	149.42	147.65	145.72
	Marketing efficiency	1	1	0.94	0.93
	Price spread	0	0	22.99	26.50
	Producer's share in consumer rupee	100	100	93.98	93.04

The analysis of marketing efficiency across four cocoa marketing channels in West Godavari district revealed that Channels I and II, where farmers sold directly to company agents (Cadbury and Heritage), were the most efficient.

Table 2. Cost return structure of cocoa crop (Rs./ha)

Particulars	Quantity	Value (in Rs.)	Percentage (%)
Variable Costs			
Human labour (Man days)	185.7	67,722	75.53
Machine labour	2.15	3,116	3.35
FYM (Tonnes)	1.89	2,877	3.45
Fertilizers (Kgs)	265.5	3,102	3.80
PPC's (Lit)	8.79	2,837	4.49
Irrigation (Number)	20.58	4,346	5.77
Interest on working capital	@ 7.5%	3,150	3.61%
Total Variable Cost (TVC)		87,150	100%
Fixed Costs		Value (in Rs.)	Percentage (%)
Depreciation		981	0.73%
Land cess		75	0.11%
Rental value of land		73,454	81.41%
Amortized cost		8,676	8.66%
Interest on fixed capital	@ 10%	8,318	9.09%
Total Fixed Cost (TFC)		91,504	100%
Total Cost (TVC+TFC)		1,78,654	100%
Main Out put	782.2 kgs	Rs. 372 per kg	
Gross returns		292938	
Net returns		114284	
Earnings per rupee of expenditure		1.64	

*MD= Man days, hrs= Hours, t= Tons, kgs= Kilograms, lts= Liters, No= Numbers

other, Kendall's Coefficient of Concordance (Kc) test was applied and the results

$$Kc = \text{Kendall's Coefficient} = 0.68$$

$$\chi^2 \text{ cal value} = 573.69$$

$$\chi^2 \text{ tab value} = 14.06$$

The χ^2 calculated value of Kendall's Coefficient of Concordance was higher than table value was significant and that all the interviewed retailers were in agreement in ranking the constraints.

The ranking of marketing-related problems based on the mean scores highlights that the most severe issue is "Non remunerative price for produce" (Rank 1), highlighting that farmers were not receiving fair price for their produce. This was followed by "Price fluctuations" (Rank 2), which cause uncertainty in income and affect farmers' decision-making. "Lack of market information" ranks third, showing that limited access to timely and accurate market data hinders farmers from making informed choices. The "Lack of storage facilities" came

Table 3. Ranking for Marketing constraints faced by Farmers

S. No.	Particulars	ΣR_j	Mean	Rank
1.	Lack of market information	375	3.125	3
2.	Price fluctuations	242	2.02	2
3.	Non remunerative price for produce	156	1.30	1
4.	Lack of storage facilities	465	3.86	4
5.	High transportation cost	933	7.78	8
6.	Lack of regulated markets	579	4.83	5
7.	Exploitation by commission agents/ middle men	732	6.10	6
8.	Malpractices in weighing/grading	838	6.98	7

next at Rank 4, suggesting that inadequate storage options compel farmers to sell produce quickly, often at lower prices. "Lack of regulated markets" ranked fifth, reflecting issues such as lack of transparency and vulnerability to exploitation. Exploitation by commission agent/middlemen ranked 6th as most of the middlemen offered less price by showing the quality parameters of product. Mal practices in weighing & grading and high transportation cost were other minor problems expressed by respondents.

The study identified four primary marketing channels, with Channel I (Farmers → Cadbury Agent) and Channel II (Farmers → Heritage Agent) being the most widely adopted due to their direct nature and assured procurement systems. The efficiency analysis revealed that these direct channels were highly efficient, offering a 100% producer share in consumer's rupee and perfect marketing efficiency (1.00), while Channels III and IV involving village traders showed relatively lower efficiency due to increased marketing costs and reduced farmer margins. Regarding marketing constraints, farmers reported challenges such as non-remunerative prices, price fluctuations, lack of storage facilities, absence of regulated markets, and limited access to market information, as identified through Kendall's Coefficient of Concordance. Overall, the study suggests that promoting direct marketing linkages with companies, establishing regulated markets, and encouraging farmer

collectives like FPOs can enhance marketing efficiency and ensure better income stability for cocoa farmers in the region.

Policy implications

The study emphasizes that streamlined channels and better infrastructure can boost cocoa marketing efficiency, raise farmer incomes, and support sustainable cocoa growth in West Godavari district.

Promoting direct company procurement with fewer middlemen can improve marketing efficiency and increase farmers' share of the consumer's rupee

Price instability and low returns make cocoa farming unpredictable, necessitating support measures like Minimum Support Prices and stabilization funds to protect farmers from market fluctuations.

Price stability and investment in modern storage facilities are vital to reduce income volatility, cut post-harvest losses, and improve cocoa quality and marketability.

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