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Price spread and intermediary margins in Niger (*Guizotia abyssinica*) marketing channels of northern hill agro-climatic zone of Chhattisgarh

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Abstract

A comprehensive study analysed the price spread and market margins of Niger crops in the Northern Hills of Chhattisgarh, utilizing data from farmers across three districts. The findings revealed that large farms yield a marketable surplus of 87.74%, followed closely by medium farms at 86.95%, small farms at 85.60%, and marginal farms at 84.61%. It shows increased trends from marginal to large farms because marginal to large farmer is increasing as the size of holding and production. The price spreads varied significantly across different marketing channels, with Channel-I having the highest spread at Rs. 3530, followed by Channel-II at Rs. 3053, and Channel-III at Rs. 2026. Notably, the producer's share of the consumer rupee in Channel-III was the highest at 79.76%, compared to Channel-II at 71.94% and Channel-I at 68.08%, indicating that a smaller number of intermediaries in Channel-III benefitted the producers more. The study also emphasized that processors maintain high marketing margins, which urges farmers to enhance the value of their products through cooperatives, potentially capturing a larger share of consumer expenditures. Additionally, establishing processing plants close to Niger cultivation areas could significantly lower transportation costs, further benefiting farmers and the overall marketing efficiency of Niger crops.

Keywords: Price spread, marketing efficiency, marketable surplus, intermediaries

Introduction

Oilseeds play a significant role in the agricultural economy of India by contributing to farm income and nutritional security. Among minor oilseed crops, Niger (*Guizotia abyssinica*) holds particular importance in tribal and rainfed regions due to its adaptability to marginal lands, low input requirements, and suitability under traditional farming systems. In the state of Chhattisgarh, Niger is predominantly cultivated in the Northern Hill Agro-Climatic Zone, where it serves as an important source of livelihood for small and marginal farmers, especially in hilly and forest-fringe areas. Despite its agronomic and socio-economic importance, the marketing system of Niger remains relatively underdeveloped. Farmers often face constraints such as inadequate market infrastructure, limited access to price information, dominance of intermediaries, and weak bargaining power. These factors contribute to wide price spreads between producers and consumers, ultimately reducing the producer's share in the consumer's rupee. Understanding the nature and magnitude of price spread across different marketing channels is therefore essential to evaluate the performance of the Niger supply chain.

The marketing channels for Niger in the Northern Hill region typically involve multiple intermediaries such as village traders, commission agents, processors, and wholesalers. Each intermediary performs specific marketing functions and incurs costs, which are compensated through marketing margins. While these services are essential for

moving the commodity along the supply chain, excessive margins and high marketing costs can widen the gap between prices received by producers and prices paid by consumers. Consequently, farmers often receive a relatively small share of the consumer's rupee, which discourages market participation and limits income enhancement opportunities.

Empirical estimation of price spread, defined as the difference between the consumer price and the net price received by the producer, provides insights into the distribution of costs and margins across different stages of the marketing channel. Similarly, analysis of intermediary margins helps identify the contribution of each market participant to the overall price build-up. Such quantitative assessments are essential for comparing alternative marketing channels and identifying inefficiencies within the supply chain. However, empirical evidence on price spread and intermediary margins in Niger marketing, particularly in the Northern Hill Agro-Climatic Zone of Chhattisgarh, remains limited.

The Northern Hill region is characterized by difficult terrain, dispersed production, inadequate market infrastructure, and high transportation costs, all of which influence marketing costs and margins. These region-specific constraints necessitate a detailed, channel-wise examination of marketing costs, intermediary margins, and price spread using primary data. Understanding these dynamics is crucial for formulating policies aimed at

improving market efficiency, reducing unnecessary intermediation, and enhancing producers' share in the consumer price. In this backdrop, the present study aims to analyse the price spread and intermediary margins in Niger (*Guizotia abyssinica*) marketing channels in the Northern Hill Agro-Climatic Zone of Chhattisgarh. The findings of this study are expected to provide valuable insights for policymakers, planners, and development agencies in formulating strategies to improve market access, reduce inefficiencies, and enhance farmers' income from Niger cultivation.

Objectives

1. To study the production, consumption and marketable surplus of Niger on different categories of farms in the Northern Hills of Chhattisgarh.
2. To examine the marketing costs, margins, price spread and producers share in consumer rupee in different channels of marketing of Niger.

Materials and Methods

Chhattisgarh state has 32 districts in which oilseed occupied 1,35,986 ha. area in which Niger occupied 20% (27,072 ha.) area respectively during the year 2022-23. Chhattisgarh state consists of three agro-climatic zones i.e. Chhattisgarh Plains, Northern Hills and Bastar Plateau. Out of total area of oilseed crops Northern hill zone contributes 46.63% (63409 ha.) area of total area in Chhattisgarh. Therefore, Northern hill zone was selected purposively. Surguja, Balrampur and Jashpur districts from Northern Hills were selected for the study, due to potentiality and production of Niger in these districts. Looking to the scope and prospects of these oilseeds in Northern Hills, many private oil expeller machines were established in these districts. Out of three districts i.e., Surguja, Balrampur and Jashpur two blocks from each district were selected purposively i.e. Ambikapur and Lundra block from Surguja district, Wadraf Nagar and Rajpur block from Balrampur district, Manora and Jashpur block from Jashpur district on the basis of maximum oilseed production in Northern Hills. The villages were selected randomly from the selected blocks. The primary data was collected from 82 respondents by using %age proportionate method at 25% by well-designed schedules through personal interview during November 2022-23.

Concepts Used

Marketed surplus

It is the quantity which the producer actually sells irrespective of his needs for home consumption and other

requirements.

Marketing channels

These refer to the chains of intermediaries through which rapeseed and mustard pass on from the producer to ultimate consumers.

Producer's share in consumer rupee

It is the price received by the farmer expressed as a% of the retail price (price paid by the consumer). The producer's share in consumer's rupee may be expressed as follows:

Price spread

The price spreads of rapeseed-mustard in the sample market were investigated at a point of time in various marketing channels. The price spread refers to the difference between the price paid by the consumer and the price received by the producer for an equivalent quantity at a given point of time in a specific market.

Marketing margins

Marketing margin is the difference between the total payment (cost + purchase price) and receipt (sale price) of the middlemen.

$$A_{mi} = P_{ri} - (P_{pi} + C_{mi})$$

Where, A_{mi} = Absolute margin of i^{th} middlemen

P_{ri} = Total value of receipts per unit (sale price)

P_{pi} = Purchase value of goods per unit (purchase price)

C_{mi} = Cost incurred on marketing per unit

Results and Discussion

The results of the study have been presented as under:

Production Consumption and Marketable Surplus of Niger

The study found that a portion of Niger production was retained by farmers for home consumption and seed use. Marginal farmers retained the highest share of produce for home consumption (11.54%), followed by small (10.4%), medium (9.32%) and large farmers (8.82%), with an overall average of 9.85%. Seed retention was relatively low across all farm sizes, with small farmers retaining a higher proportion (4.00%) compared to marginal (3.85%), medium (3.72%) and large farmers (3.43%). Consequently, the marketable surplus was highest among large farmers (87.74%), followed by medium (86.95%), small (85.60%) and marginal farmers (84.61%), reflecting lower retention for consumption and seed purposes on large farms.

Table 1: Production, consumption and marketed surplus of Niger on the sampled farms in Northern hills of Chhattisgarh.

S. No.	Particulars	Farm size					Qtl/ farm
		Marginal	Small	Medium	Large	Overall	
(A)	Total production	0.78 (100)	1.25 (100)	1.61 (100)	2.04 (100)	1.42 (100)	
(B)	Consumption						
1	Home consumption	0.09 (11.54)	0.13 (10.4)	0.15 (9.32)	0.18 (8.82)	0.14 (9.85)	
2	Quantity retained for seed	0.03 (3.85)	0.05 (4.00)	0.06 (3.72)	0.07 (3.43)	0.05 (3.52)	
	Total quantity utilized	0.12 (15.38)	0.18 (14.4)	0.21 (13.04)	0.25 (12.25)	0.19 (13.38)	
(C)	Marketable surplus	0.66 (84.61)	1.07 (85.60)	1.4 (86.95)	1.79 (87.74)	1.23 (86.61)	

Note: Figures in parentheses indicate the percentage to total quantity produced

Marketing Channels and Price Spread in the Marketing of Niger

Marketing constitutes an integral component of the production process, as it facilitates the transfer of commodities from producers to consumers. A marketing channel represents the sequence of intermediaries and institutions involved in this movement. An efficient marketing system ensures that goods are transferred at the lowest possible cost while providing necessary marketing

services. In the study area, the marketing of Niger involved multiple intermediaries, and three marketing channels were identified through which the produce reached the final consumers, they are as follows:

- **Channel-I:** Producer- Village traders - Commission agent - Wholesaler - Processor
- **Channel-II:** Producer- Commission agent - Wholesaler - Processor
- **Channel-III:** Producer - Processor

Table 2: Marketing costs, margins and price spread of Niger in the three different channels

S. No.	Particulars	Channels		
		I	II	III
1	Producer/ farmers			
	Packing charges	5	6	5
	Loading & unloading	3	4	4
	Weighing charges	0	3	3
	Transportation charges	0	50	50
	Storage charges	0	5	5
	Other charges	10	8	8
	Sub total	18 (3.64)	76 (16.07)	75 (20.46)
	Price received by the producer	7530	7830	7986
2	Village trader			
	Purchase price	7530		
	Packing charges	10		
	Loading & unloading	5		
	Weighing charges	5		
	Transportation charges	80		
	Storage charges	4		
	Other charges	12		
	Sub total	116 (23.48)		
	Price received by the village trader	8469		
	Village trader's margin	823		
	Commission charges of marketing agent			
	Commission	275	292	
3	Wholesalers			
	Purchase price	8744	8122	
	Packing charges	10	10	
	Loading & unloading	3	5	
	Weighing charges	3	5	
	Transportation charges	50	80	
	Storage charges	5	6	
	Other charges	15	20	
	Sub total	86 (17.41)	126 (26.64)	
	Price received by the wholesalers	9776	9206	
	Wholesaler's margin	946	958	
4	Processors			
	Purchase price	9776	9206	7986
	Packing charges	15	12	10
	Loading & unloading	10	10	10
	Transportation charges	80	80	80
	Weighing charges	4	3	4
	Storage charges	8	8	8
	Processing charges	133	133	135
	Other charges	24	25	25
	Sub total	274 (55.46)	271 (57.29)	272 (78.39)
	Price received by the processors	11060	10883	10012
	Processor's margin	1010	1406	1754
	Total marketing costs	494 (100)	473 (100)	347 (100)
	Total marketing margins	2779	2364	1754
	Price spread	3530	3053	2026
	Producer's share in consumer's rupee (%)	68.08	71.94	79.76

Note: Figures in parentheses indicate the percentages to total quantity produced

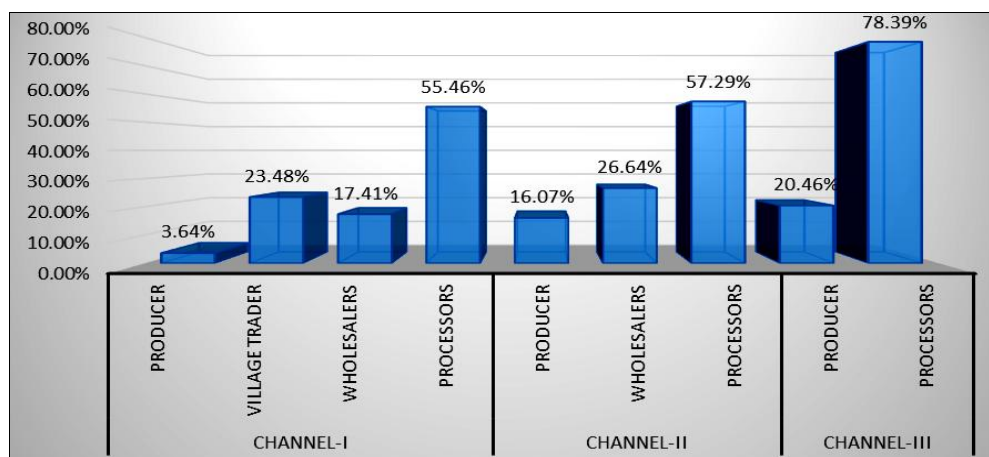


Fig 1: Marketing cost of different market intermediaries in different channels

Table 2 presents the marketing costs, margins, and price spread for different marketing channels for Niger in the study area. Producers received a net price of Rs. 7530 per quintal in Channel- I, Rs. 7830 per quintal in Channel- II and Rs.7986 per quintal in Channel-III. Marketing charges of Niger paid by producer of Rs 18 per quintal (3.64% of total marketing cost) in channel -I. whereas, village trader incurred the marketing charges of Rs. 116 (23.48%). However, marketing charges of Rs. 86 (17.41%) per quintal paid by wholesaler in channel-I. The commission charge was Rs. 275. However, the processor incurred the marketing charges in channel - I of Rs 274 (55.46%) per quintal. Under Channel -II marketing charges paid by producer was Rs 76 (16.07%) per quintal. However, marketing charges of Rs. 126 (26.64%) per quintal paid by wholesaler in channel-II. The commission charge was Rs.292. The processors incurred the marketing charges of Rs. 271 (57.29%) per quintal. In channel - III the producer incurred the marketing charges of Rs. 75 (20.46%) per quintal. The processor incurred the marketing charges of Rs 272 (78.39%) per quintal. The findings of study envisaged that channel - III was the most efficient for marketing of Niger followed by channel - II and channel -I respectively.

The marketing margins of the middlemen in channel -I were estimated to be Rs.2779 per quintal followed by channel-II (Rs.2364 per quintal) and channel-III (Rs.1754 per quintal). The total marketing costs incurred in the marketing of Niger through the Channel-I was found more in channel-I at Rs.494 per quintal than channel-II (Rs. 473 per quintal) and channel-III (Rs. 347 per quintal). The price spread was also higher in channel-I at Rs. 3530 per quintal than channel-II (Rs.3053 per quintal) and channel-III (Rs.2026 per quintal) because the marketing costs were higher in channel-I. Producer's share in consumer's rupee was 68.08% in channel-I, 71.94% in channel-II and 79.76% in channel-III.

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