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STUDY ON MARKETING OF FINGER MILLET IN SIMDEGA DISTRICT OF JHARKHAND

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ABSTRACT

The study examines the production constraints and marketing efficiency of finger millet in Simdega district, with a focus on identifying key challenges and evaluating different marketing channels. Primary data were collected from farmers across various farm size groups to analyze production-related issues, while marketing data were evaluated using parameters such as price spread, producer's share in consumer rupee, and Shephard's Index. Results indicated that low-quality seed, shortage of fertilizers, and labor scarcity were the most critical production constraints, followed by irregular irrigation supply, power shortages, and pest and disease incidence. Marketing analysis revealed that Channel I (direct producer-to-consumer) was the most efficient, with the highest market efficiency (12.5) and producer's share (91.54%). Channel II showed moderate efficiency (7.1), while Channel III recorded the lowest efficiency (4.53) due to multiple intermediaries and higher marketing costs. The findings suggest that improving input quality, mechanization, irrigation, and direct marketing linkages can significantly enhance profitability and sustainability of finger millet cultivation.

Keywords: Finger millet, Marketing efficiency, Price spread, Producer's share, Production constraints, Shephard's Index, Simdega district.

INTRODUCTION

Finger millet (*Eleusine coracana*), commonly referred to as "ragi" in India, is an ancient cereal crop predominantly cultivated in tropical and subtropical regions of Asia and Africa. It is recognized as a hardy and drought-tolerant crop, capable of thriving under diverse climatic conditions, including marginal and semi-arid areas where other cereals often fail (Upadhyaya et al., 2011). Owing to its resilience, nutritional richness, and adaptability, finger millet plays a critical role in food security, livelihood generation, and sustainable agricultural practices. The crop is exceptionally rich in calcium, iron, dietary fiber, and essential amino acids, making it a valuable dietary staple for nutritionally vulnerable populations (Devi et al., 2014).

India holds the distinction of being the largest global producer of finger millet, accounting for a substantial share of global production (Yenagi et al., 2010). States such as Karnataka, Tamil Nadu, Odisha, Andhra

Pradesh, Maharashtra, and Uttarakhand are prominent contributors, with Karnataka alone producing nearly 60% of the national output (Department of Agriculture & Farmers Welfare [DAFW], 2023). Its cultivation is primarily rain-fed, requiring minimal agricultural inputs, thus reducing production costs while preserving soil health. Additionally, finger millet's ability to withstand pests, diseases, and erratic rainfall patterns underscores its significance as a climate-resilient crop (Pradhan et al., 2020).

From an agronomic perspective, finger millet is a self-pollinating annual grass with a robust root system and distinctive finger-like spikes that bear the grains (Kumar et al., 2016). It matures within 90–120 days, depending on variety and climatic conditions, and can be stored for extended periods without significant deterioration—an attribute that makes it strategically important for food reserves in drought-prone areas (Goron & Raizada, 2015). The crop also plays a role in maintaining soil fertility, particularly when used in crop rotations with legumes (Chivenge et al., 2015).

Nutritionally, finger millet is superior to many conventional staples such as rice and wheat. Its calcium content is nearly ten times higher than that of most other cereals, making it particularly beneficial for bone health among children, pregnant women, and the elderly (Kumari & Sumathi, 2002). High dietary fiber contributes to digestive health, aids in glycemic control for diabetic patients, and supports cardiovascular well-being (Shobana et al., 2013). Moreover, finger millet's gluten-free nature has positioned it as a valuable alternative for individuals with celiac disease or gluten intolerance, contributing to its rising demand in health-conscious urban markets (Rao et al., 2017).

Economically, finger millet has seen increased market potential with the growth of value-added products such as ragi flour, malted ragi, breakfast cereals, energy bars, and gluten-free snacks (Malleshi & Hadimani, 1993). Traditional consumption patterns such as ragi porridge, flatbreads, and fermented beverages have expanded into modern food innovations, enhancing its appeal among diverse consumer groups (Nirmala et al., 2000). This diversification has created opportunities for both domestic and export markets, supported by growing consumer awareness of the health benefits of millets.

In recent years, government initiatives, including the promotion of millets under the National Food Security Mission and the observance of the International Year of Millets (2023), have reinvigorated interest in millet cultivation and consumption (FAO, 2023). Policies aimed at supporting sustainable production, market access, and branding have encouraged farmer participation and increased the visibility of millet-based products in both rural and urban settings. However, challenges persist in terms of marketing efficiency, price volatility, limited storage infrastructure, and the lingering perception of millets as a "poor man's food" (Pingali et al., 2019).

Emerging market trends indicate a steady rise in demand for finger millet products, driven by shifting dietary preferences toward functional foods, organic produce, and gluten-free alternatives. The advent of e-commerce and direct-to-consumer (D2C) platforms has further transformed millet marketing, enabling farmers and processors to reach wider audiences while reducing dependency on intermediaries (Gelli et al.,

2020). Health-focused startups, food processors, and multinational corporations are increasingly incorporating finger millet into product lines, catering to both domestic and export markets.

OBJECTIVES OF THE STUDY

- To identify different existing marketing channels of millet in the market
- To analyse marketing cost, price spread, producer's share in consumers rupee and marketing efficiency of different marketing channels
- To access different constraints/problems in marketing of millet in study area and suggest suitable measures

RESEARCH METHODOLOGY

Research methodology refers to the systematic process employed to conduct research, encompassing the principles, procedures, and techniques used to describe, explain, and predict phenomena (Kothari, 2004). This study adopts a structured and scientific approach to fulfill its objectives, incorporating specific steps related to the selection of the study area, sampling procedures, data collection methods, and analytical tools.

Selection of Study Area

The research was carried out in Simdega district, Jharkhand, purposively chosen due to its maximum area under finger millet (Eleusine coracana) cultivation. Situated in the southwestern part of the state, Simdega is characterized by undulating terrain, lateritic red soils, and a tropical monsoon climate conducive to rainfed agriculture. The district receives annual rainfall ranging from 1000 to 1400 mm, with altitudes between 300 and 700 meters, offering an ideal microclimate for millet crops. Its forest cover, traditional farming systems, and Kharif season rainfall patterns collectively make the region highly suitable for finger millet production, supporting the food security and livelihoods of tribal farming communities.

Within Simdega, Jaldega block was purposively selected for its unique topographical and hydrological features. This block exhibits rugged plateaus, hilly terrains, and river systems such as the Sankh, Deo, Girwa, and Palamara, which influence agricultural productivity and market accessibility.

Sampling Procedure

Jaldega block comprises 60 villages organized into 10 panchayats. From a complete village list obtained from the block office, 5% of villages were randomly selected. Subsequently, a comprehensive list of finger millet growers in these villages was prepared with the assistance of village heads. From this list, 120 respondents were randomly chosen and classified based on landholding size: marginal (<1 ha), small (1–2 ha), semi-medium (2–4 ha), medium (4–10 ha), and large (>10 ha) farmers.

For market analysis, Mahishi market was selected as the primary market and Bijwar market as the secondary market. Market functionaries, including wholesalers, retailers, and intermediaries, were identified, and 10% were randomly sampled for the study.

Data Collection

Both primary and secondary data sources were utilized. Primary data were collected through structured interviews, schedules, and field observations. Secondary data were sourced from government reports,

agricultural department records, and published literature relevant to millet cultivation and marketing.

Analytical Tools

Several analytical tools were applied. Standard deviation measured variability in production and marketing data. Market share was computed as the proportion of a firm's sales to total market sales. Marketing efficiency was assessed using the Modified Measure of Marketing Efficiency (MME), which integrates prices received by farmers, marketing costs, and margins. Marketing cost was calculated as the sum of expenses incurred by intermediaries from farm to consumer. Price spread was determined as the difference between consumer and producer prices, and the producer's share in the consumer's rupee was derived accordingly. Garrett's Ranking Technique was used to prioritize constraints and issues faced by respondents by converting ranks into scores.

This methodological framework ensured that the study was grounded in scientific rigor, representative sampling, and robust analytical techniques, thereby enhancing the reliability and validity of the findings.

DATA ANALYSIS AND INTERPRETATION

Channel wise description of each marketing channel observed on the basis of their share in the marketing of Finger millet

Channel-I

Table 1: price spread of finger millet in channel I

S. No	Particulars	Price/ Quintal
1	Net price received by producer	3450
2	**Cost incurred by the producer**	
	Transportation cost	150
	Loading and unloading charges	100
	Miscellaneous charges	50
3	Total marketing cost	300
4	Sale price of producer/Purchase price of Consumer	3750
	Price spread	**300**
	Market efficiency by Shephard's Index	**12.5**
	Producer's share in consumer rupee	**91.54%**

The table presents the marketing cost, price spread, efficiency, and producer's share in the consumer rupee for finger millet. The net price received by producers was ₹3,450 per quintal, with total marketing costs amounting to ₹300, primarily comprising transportation, loading/unloading, and miscellaneous charges. The sale price to consumers was ₹3,750 per quintal, resulting in a price spread of ₹300. Market efficiency, calculated via Shephard's Index, was 12.5, indicating effective marketing performance. The producer's share in the consumer rupee was notably high at 91.54%, reflecting minimal intermediary margins.

Channel-II

Table 2: price spread of finger millet in channel II

S. No	Particulars	Price/ Quintal
1	Net price received by producer	3050
2	**Cost incurred by the producer**	
	Transportation cost	100
	Loading and unloading charges	80
	Miscellaneous charges	50
3	Marketing cost	230
4	Sale price of producer/Purchase price of Commission agent	3280
5	**Cost incurred by the Commission agent**	
	Loading, Unloading	100
	Spoilage and losses	50
6	Marketing cost	150
	Margin of commission agent	120
7	Sale price of Commission agent/ purchase price of Consumer	3550
18	**Net purchase price of Consumer**	**3550**
	Total Marketing cost	**380**
	Net margin	**120**
	Price Spread	**500**
	Market efficiency by Shephard's Index	**7.1**
	Producer's share in consumer rupee	**85.92%**

The table outlines the marketing cost structure, margins, and efficiency for finger millet when sold through a commission agent. Producers received ₹3,050 per quintal, incurring ₹230 in marketing costs, mainly for transportation, loading/unloading, and miscellaneous charges. The commission agent purchased at ₹3,280 and bore an additional ₹150 in costs, earning a margin of ₹120. The final consumer purchase price was ₹3,550, resulting in a price spread of ₹500. Market efficiency, as per Shephard's Index, was 7.1, and the producer's share in the consumer rupee stood at 85.92%, indicating moderate intermediary influence.

Channel-III

Producer → Village Dealer → Wholesaler → Consumer

Table 3: price spread of finger millet in channel III

S. No	Particulars	Price/ Quintal
1	Net price received by producer	3000
2	**Cost incurred by the producer**	
	Transportation cost	70
	Loading and unloading charges	80
	Miscellaneous charges	50
3	Marketing cost	200
4	Sale price of producer/Purchase price of Commission agent	3200
5	**Cost incurred by the Village Dealer**	
	Loading & Unloading Charges	70
	Spoilage and losses	60
6	Marketing cost	130
	Margin of Village Dealer	150
7	Sale price of Village Dealer / purchase price of wholesaler	3480
	Cost incurred by the Wholesaler	
	Loading and unloading Charges	80
	Carriage up to Storage	60
	Grading and sorting charges	50
	Miscellaneous charges	20
	Spoilage and losses	40
8	Marketing cost	250
9	Margin of wholesaler	120
10	Sale price of wholesaler/ purchase price of Consumers	3850
	Total Marketing cost	**580**
	Net margin	**270**
	Price Spread	**850**
	Market efficiency by Shephard's Index	**4.53**
	Producer's share in consumer rupee	**77.92**

The table details the cost structure, margins, and efficiency for finger millet marketing through village dealers and wholesalers. Producers received ₹3,000 per quintal, incurring ₹200 in marketing costs. Village dealers purchased at ₹3,200, spending ₹130 on costs and earning ₹150 as margin before selling to wholesalers at ₹3,480. Wholesalers incurred ₹250 in costs for handling, transport, grading, and losses, with a ₹120 margin. The consumer price reached ₹3,850, producing a price spread of ₹850. Market efficiency was 4.53, with the producer's share in the consumer rupee at 77.92%, indicating higher intermediary involvement.

Table 4: marketing efficiency of finger millet in different marketing channels

Particulars	Units	Channel I	Channel II	Channel III
Consumer purchase price	Per Quintal	3881	4380	3730
Total marketing price		300	380	580
Total net margin of intermediaries		-	505	410
Price Spread		300	500	850
Marketing efficiency by Conventional method		12.5	7.1	4.53

The table compares marketing performance across three distribution channels for finger millet. Channel I shows the highest marketing efficiency (12.5) with a consumer price of ₹3,881 and minimal price spread (₹300), indicating direct producer-to-consumer sales. Channel II, with a consumer price of ₹4,380, has a higher price spread (₹500) and total net margin of ₹505 for intermediaries, reducing efficiency to 7.1. Channel III records the lowest efficiency (4.53), highest price spread (₹850), and consumer price of ₹3,730, reflecting extensive intermediary involvement and higher cumulative marketing costs.

Table 5: Constraints in Production of Finger millet in different Size of Farms Group

S. No	Particulars	Size of Farms Groups				Rank
		Small	Medium	Large	Total	
1.	Low quality seed	46	27	20	93	I
2.	Shortage of fertilizers	43	25	19	87	II
3.	Labor scarcity	40	23	17	80	III
4.	Lack of processing plant	35	15	10	60	VII
5.	Power shortage	38	22	15	75	IV
6.	Awareness Of Scientific Cultivation	9	11	10	30	XI
7.	Lack of Machinery	20	17	18	55	VIII
8.	Non availability of recommended pesticides	27	12	07	46	IX
9.	High incidence pest & diseases	38	17	9	64	VI
10.	Inadequate credit supply by financial institution	18	19	7	44	X
11.	Irregular availability of irrigation water	42	20	08	70	V

The table presents the ranked constraints affecting finger millet cultivation across different farm sizes. Low-quality seed emerged as the most pressing issue (Rank I, 93 responses), followed by shortage of fertilizers (Rank II, 87) and labor scarcity (Rank III, 80). Power shortage (Rank IV, 75) and irregular availability of irrigation water (Rank V, 70) were also significant challenges. High incidence of pests and diseases ranked sixth, while lack of processing plants, inadequate machinery, and non-availability of recommended pesticides occupied lower ranks, indicating infrastructural and input-related gaps. Inadequate credit supply from financial institutions ranked tenth, reflecting financial access issues. Awareness of scientific cultivation practices was the least reported constraint (Rank XI, 30 responses), suggesting that while knowledge exists, resource and infrastructure limitations remain dominant barriers. These findings highlight the need for integrated interventions focusing on quality inputs, reliable irrigation, pest management, and improved mechanization to enhance productivity and sustainability in finger millet farming.

CONCLUSION

The present study, undertaken to analyze the production constraints and marketing efficiency of finger millet in Simdega district, reveals that the crop continues to be an important source of livelihood for farming households, yet it is hindered by several critical challenges. Analysis of production constraints indicated that low-quality seed, shortage of fertilizers, and labor scarcity are the foremost issues adversely affecting productivity. Other significant constraints include irregular availability of irrigation water, power shortages, high pest and disease incidence, and inadequate processing facilities. Limited mechanization, poor access to recommended pesticides, and inadequate institutional credit further exacerbate the situation.

Marketing analysis of three identified channels revealed substantial differences in efficiency and producer's share. Channel I (direct marketing) exhibited the highest marketing efficiency (12.5) and the largest producer's share in the consumer rupee (91.54%), due to lower marketing costs and minimal price spread. Channel II demonstrated moderate efficiency (7.1), whereas Channel III recorded the lowest efficiency (4.53) due to multiple intermediaries and high cumulative costs.

The findings underscore the necessity for interventions aimed at improving input quality, ensuring timely irrigation, enhancing mechanization, and promoting direct marketing. Establishing processing facilities and reducing intermediary dependency can significantly improve profitability and sustainability in finger millet cultivation.

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