Agri Express: **03** (03), *Article No.* V03I03.13, July - September, **2025** *E - ISSN No. 2584 – 2498*

6.611 Impact Factor

Marketing Channel Analysis of Makhana Cultivation in Chhattisgarh

(A Case Study from Dhamtari and Raipur District)

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https://doie.org/10.10346/AE.2025699700

ABSTRACT

The present study examines the marketing channels of makhana (Euryale ferox) in the plains of Chhattisgarh, focusing on Dhamtari and Raipur districts, where cultivation is practiced in pond-based systems under the guidance of Dhamtari KVK and OJAS FARM. Two distinct marketing channels were identified. Channel I is shorter, operating through Farmer → Processor → Wholesaler → Retailer → Consumer. Channel II is longer and includes Farmer → Seed Wholesaler → Processor → Pop Wholesaler → Retailer → Consumer. In both systems, processors play the pivotal role of purchasing raw seeds, processing them into popped makhana, and ensuring supply to retailers. Retailers distribute the product in consumer-friendly packets of 100 g, 250 g, and 500 g. Overall, marketing remains structured but limited in scale.

Keywords: Agri-Business, Makhana cultivation, Makhana processing, Marketing channels, Value chain analysis

INTRODUCTION

Makhana, commonly known as fox nut and botanically classified as *Euryale ferox*, is an aquatic plant belonging to the family Nymphaeaceae. The crop is believed to have originated in Southeast Asia and China, but over time, it has established itself as one of the most economically significant aquatic crops in India. Within the Indian subcontinent, the state of Bihar holds a dominant position, accounting for the majority of cultivation and processing activities. Reports from the Agricultural and Processed Food Products Export Development Authority (APEDA) indicate that the makhana sector has shown remarkable growth in recent years, recording a compound annual growth rate (CAGR) of nearly 7% during 2019–2023, underscoring its emerging role in the agribusiness landscape (https://agrilexchange.apeda.gov.in).

India's production scenario is heavily concentrated, with Bihar contributing nearly 90% of global output. In addition to Bihar, other states such as West Bengal, Manipur, Tripura, Assam, Madhya Pradesh, Rajasthan, and Uttar Pradesh are also gradually adopting makhana cultivation. The plant thrives in wetlands, ponds, and water bodies, with Bihar being uniquely positioned due to its geographical and climatic suitability. Such widespread adaptability has led to makhana being recognized as a valuable commercial

aquatic crop that supports livelihoods while catering to a growing domestic and international market.

According to the Department of Horticulture, Government of Bihar, makhana is cultivated on approximately 15,000 hectares across India, yielding about 112,000 metric tons (MT) of raw seeds annually. After undergoing processing, this volume translates into nearly 40,000 MT of edible popped kernels. From a biological perspective, a single makhana plant is capable of producing close to 100 seeds, and a hectare of pond area can support the growth of around 10,000 plants. Average productivity ranges from 1.8 to 2.0 tonnes per hectare, though yields vary based on water quality, cultivation practices, and labor availability.

(https://horticulture.bihar.gov.in).

Beyond its economic relevance, makhana is also highly valued for its nutritional composition. Analyses of popped kernels reveal that they contain 12.8% moisture, 76.9% carbohydrates, 9.7% protein, 0.1% fat, and 0.5% minerals. Micronutrients such as calcium, phosphorus, and iron are present in trace but essential quantities. Scientific studies have emphasized that makhana surpasses many conventional nuts and dry fruits in protein, sugar, phenolic compounds, and vitamin C content (Jha et al., 1991). Its low-fat profile, combined with high nutritional density, positions it as an increasingly popular health food, particularly among health-conscious urban consumers.

The expansion of makhana farming into new regions of India is noteworthy. For instance, in Chhattisgarh, makhana cultivation is a relatively recent innovation, largely promoted by the KVK in Dhamtari district. Farmers here have begun exploring makhana as a cash crop to diversify income sources and reduce dependence on traditional cereal-based agriculture. While the crop has shown promise, systematic economic and value chain analyses remain limited, leaving a gap in understanding the profitability, marketing channels, and sustainability of makhana farming in states beyond Bihar.

MATERIALS AND METHODS

Selection of Farm

The research was carried out in the districts of Dhamtari and Raipur in Chhattisgarh. For this purpose, Dhamtari KVK under farmer and OJAS FARM were purposively chosen as the study. The investigation focused on Makhana seeds and Makhana pop products were selected.

This chapter outlines the materials and methodology applied in the study, including the selection of research area, identification of respondents from Dhamtari KVK and OJAS FARM, procedures for data collection, and the analytical tools employed.

Analysis of Marketing Channel

The study analyzed marketing channels with a focus on makhana seeds and processed popped makhana.

Marketing Channels

A marketing channel system is a particular set of interdependent organizations involved in the process of making a product or service available for use or consumption.

RESULTS AND DISCUSSION

Marketing Pattern in the Study Area

Marketing pattern refers to the way through which the goods move from the producers' level to the ultimate consumers. It involves various trade practices and middlemen who facilitate the flow of goods and services from the point of production to the point of consumption. The channels are linked with the chains of intermediaries involved at

various levels of marketing for smooth distribution of the products. The channels adopted are generally influenced by factors like the location of the growers, distance of the market center, townships, processing units, etc.

Two marketing channels were identified in the makhana pop marketing in the study area.

Channel I

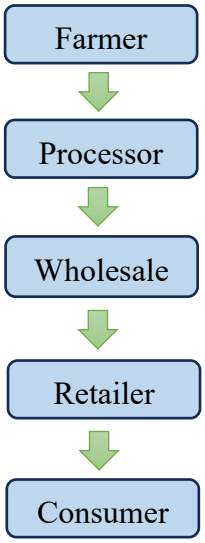

Fig. 1. Marketing of makhana – channel-I

This channel includes farmer, processor, wholesaler retailer and consumer. In this channel processors purchase the makhana seed from farmer and after processing it sell makhana pop to the retailers. Retailers sell the makhana pop to consumers. Consumers generally buy in quantities of 100 gm, 250 gm or 500 gm on weight basis as makhana is voluminous in nature.

Channel II:

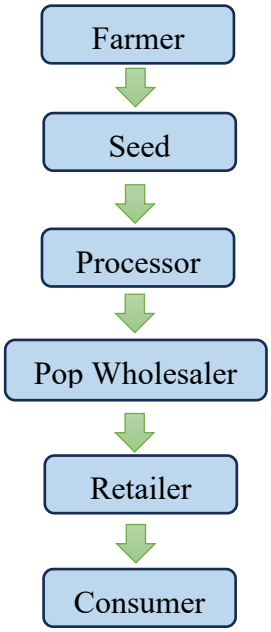

Fig. 2. Marketing of makhana – channel-II

Channel II consists of farmer, processor, wholesaler, retailer, and consumer. In this channel, farmers sell makhana seed wholesale to the processors, and the wholesaler purchases makhana pop from many processors. The wholesalers do the grading and repackaging in small attractive packets of 100 gm, 250 gm and 500 gm with some brand name or in a standard gunny bag of weight 7 kg or 12 kg with polythene lining. They sell to the retailers, and the retailers in turn, sell to the consumers.

CONCLUSION

The marketing of makhana in Dhamtari and Raipur districts of Chhattisgarh is carried out through two well-defined systems that differ in terms of structure, actors involved, and value addition. Channel I represents a relatively short route, where farmers sell their produce directly to processors, who then process the raw seeds into popped makhana. After processing, the product moves to wholesalers, followed by retailers, and finally reaches the consumers. This channel involves fewer intermediaries, making it relatively simple, but the scope for large-scale branding and packaging remains limited.

In contrast, Channel II is more elaborate, as it includes additional actors such as seed wholesalers and pop wholesalers. Farmers first sell their produce to seed wholesalers, who supply it in bulk to processors. Once processed, the product reaches pop wholesalers who focus on activities such as grading, packaging, and branding before distributing it to retailers. This channel creates opportunities for value addition and wider market outreach.

Both systems highlight the pivotal role of processors in the value chain, while emphasizing the need for better infrastructure, advanced processing technologies, and institutional support to improve efficiency, profitability, and farmer income.

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