ISSN: 2456-1452
Maths 2024; SP-9(3): 12-20

https://www.mathsjournal.com
Received: 14-02-2024
Accepted: 20-03-2024

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Analysis the different marketing channels, marketing cost, marketing margin and price spread of Kala Namak rice in in Gorakhpur district of Uttar Pradesh

Suman Gupta, Sachin Srivastava and KK Singh

Abstract
India is one of the world's largest producers of white rice, accounting for 20% of all world rice production. India stands first in area, second in production, followed and preceded by China on these two aspects. according to Ministry of Consumer Affairs, Food & Public Distribution, Production of Kala namak rice has increased significantly during last three years from 4,311 MT in 2019, the production has increased to 15,000 MT in 2021. international demand, as per UP Government has increased from 2% in 2019- 20 to nearly 7% in 2021-22. the UP Government's One District-One Product Programme aims to encourage such indigenous and specialized products and crafts in UP that are found nowhere else – like the ancient and nutritious 'Kala Namak' rice, the rare and intriguing wheat-stalk craft, world-famous chikankari and zari-zardozi work on clothes, and the intricate and stunning horn-bone work that uses the remains of dead animals rather than live ones, a nature-friendly replacement for ivory. Kalanamak rice was granted the Geographical Indication (GI) Tag in 2012 by the Government of India. a geographical area was defined where Kalanamak rice can be produced. the study included 60 respondents who were divided into three groups according to their ownership of cropped area land: marginal (below 1 ha), small (1-2 ha), and medium (2-4 ha). Table 4. shows the average holding size for the various groups of sample farms. The table clearly shows that for three separate groups, the average holding size in the research area was 0.548, 1.517, and 3.630 hectares on marginal, small, and medium size farms, respectively. while the holding's overall average size was 1.490 acres. the marginal, small, and medium farms each had a net cultivated area of 16.44 ha, 25.8 ha, and 47.2 hectares.

Keywords: Kala Namak, GI tag, marketing, one district one product

Introduction
Kala Namak rice derives from its black husk. it is grown widely in Tarai area of Uttar Pradesh adjoining Nepal particularly in the districts of Siddharthnagar, Santkabirnagar and Basti and in small pockets in districts Gorakhpur, Mahrajganj, Balrampur, Gonda, Bahraich, Shrawasti, Deoria and Padrauna (North Eastern Plain Zone of eastern UP). Kalanamak is one of the finest quality scented rices of India. more than 90% of the world's rice is grown and consumed in Asia, where 60% of the calories are consumed by 3 billion Asians. India is one of the world's largest producers of white rice, accounting for 20% of all world rice production. India stands first in area, second in production, followed and preceded by China on these two aspects. Now these days rice is excessively produced in whole of the world. Rice grain quality is a major factor from consumer as well as marketing point of view. aromatic rice, which has stronger aroma and kernel elongation than ordinary rice, has more in demand in different countries of the world. The consumer demand has increased markedly to pay a premium price for fragrance. Scented rices grow best and produce finest quality grains under cool, humid conditions, which are common in Himalayan Tarai of U.P. and Uttarakhand and foot hills of Vindhya Hills. Hence Himalayan Tarai of Uttar Pradesh (U.P) and Uttarakhand is probably the place of origin of aromatic rices. Among non-basmati aromatic rices, Kalanamak is the most popular scented rice variety grown in Uttar Pradesh. it is among one of the most important scented rice varieties of India. This variety is famous for its taste and aroma. It is cooking at marriages is considered auspicious and its smoke is believed to be purifying the atmosphere.

According to Ministry of Consumer Affairs, Food & Public Distribution, Production of Kalanamak rice has increased significantly during last three years from 4,311 MT in 2019, the production has increased to 15,000 MT in 2021. International demand, as per UP Government has increased from 2% in 2019- 20 to nearly 7% in 2021-22.

The UP Government's One District-One Product Programme aims to encourage such indigenous and specialized products and crafts in UP that are found nowhere else – like the ancient and nutritious 'Kala Namak' rice, the rare and intriguing wheat-stalk craft, world-famous chikankari and zari-zardozi work on clothes, and the intricate and stunning horn-bone work that uses the remains of dead animals rather than live ones, a nature-friendly replacement for ivory.

Material and Methods

Different techniques used and methods adopted in this study are described and the methodology of the present study has been discussed under the following heads.

i) Sampling technique
ii) Method of enquiry and collection of data
iii) Period of enquiry
iv) Methods and techniques of analysis

Sampling Techniques

Multistage stratified purposive cum random sampling techniques has been applied for selection of respondents to deal with the investigation.

Method of Enquiry and Collection of Data: The primary data were collected through survey method with the help of personal interview of pre-structured schedule while secondary data were collected from Zila Vikas Bhawan, Zila Sankhyaki Patrika, Department of Agriculture at block and district headquarter, journal reports, books and internet etc. Gorakhpur district of Uttar Pradesh was selected was selected purposively seeing the acerage under Kala Namak rice, time & money constraints of the investigator. two blocks namely Sehajanwa & Campierganj was selected for the study. a list of all the villages falling under selected blocks was prepared and arranged in ascending order according to area and six villages from these blocks were randomly selected for the study.

Selection of districts

Gorakhpur district was selected purposively seeing the acreage under Kala Namak rice, time & money constraints of the investigator.

Selection of blocks

A list of all 19-block falling under Gorakhpur district was prepared in ascending order according to area under Kala Namak rice and, two blocks enjoying highest acerage under Kala Namak rice was selected purposively.

Selection of villages

A separate list of all villages of selected blocks growing Kala Namak rice was prepared and 3 villages from each selected block was selected randomly.

Table 1: Selection of district, blocks and villages in the study area:

S. No.	Particulars	Selection of study Area	Techniques
1.	District	Gorakhpur	Purposive
2.	Blocks	Campierganj, Sahajanwa	Purposive
3.	Villages	Balua, Dharampur, Majhganwa, Dumri, Baspar, Chauri	Random

Selection of respondents

A separate list of all respondent growing Kala Namak rice of each selected village prepared and stratified into three groups *i.e.*, Marginal (less than 1 ha), Small (1-2 ha.) and Medium (2-4 ha and above). ultimately sample of 60 respondent was selected following proportionate random sampling technique. Finally, 60 respondents *i.e.*, 30 marginal, 17 small, 13 medium were selected for the study.

Table 2: Village wise respondents under different size of group of farms:

S. No.	Name of the Village	Categories of the farmers						Total	
		Marginal (< 1 ha)		Small (1-2 ha)		Mediu m(2-4 ha)			
		P	S	P	S	P	S	P	S
Gorakhpur District									
1.	Majhganwa	16	6	9	4	7	1	32	11
2.	Balua	14	5	8	2	6	2	28	9
3.	Dharampur	16	5	10	3	9	3	35	11
4.	Dumri	15	5	8	3	5	2	28	10
5.	Baspar	13	4	7	2	6	3	26	9
6.	Chauri	16	5	9	3	6	2	31	10
Grand Total		90	30	51	17	39	13	180	60

Note: P= Population, S= Sample.

Table 3: Proportionate random sampling technique

		Farmer's Category (land size based)	1		2		3		4		5		6		Total		
			P	S	P	S	P	S	P	S	P	S	P	S	P	S	
3.	Respondents	Marginal	16	6	14	5	16	5	15	5	13	4	16	5	90	30	Proportionate random sampling Technique
		Small	9	4	8	2	10	3	8	3	7	2	9	3	51	17	
		Medium	7	1	6	2	9	3	5	2	6	3	6	2	39	13	
		Total	32	11	28	9	35	11	28	10	26	9	31	10	180	60	

Selection of market
The market "Gorakhpur Naveen Mandi" serving as major market for disposal of Kala Namak rice in the study area, was selected for studying the nature and magnitude of marketing costs and margins in the marketing of Kala Namak rice.

Selection of market functionaries / intermediaries
The main market functionaries engaged in the marketing of Gorakhpur Village traders, wholesalers/commission agents and retailers. Therefore, a list of all market functionaries involved in the marketing channels have been prepared and then a sample of 10 percent of all the market functionaries have been randomly selected for the study of marketing aspects. Model price was used for the study.

Identified marketing channels
There are three most important channels which were existing in the study area *viz*.
1. Producer → Consumer (local sale).
2. Producer → Village Trader/Retailer→ Consumer.
3. Producer→ Commission agent → Retailer → Consumer.

Period of Enquiry
The data was collected for the agricultural year 2021-22

Methods and Techniques of Analysis
For the interpretation of data, the following analytical tools were used:

Tabular analysis
Tabular analysis was made to compare different aspects of analysis of costs and returns on different categories of the sample farms.

Measures of cost concepts
Cost A1: This cost includes actual expenditure incurred in cash and kind.
1. Value of hired human labour and machinery labour.
2. Value of seed (both forms produced and purchased).
3. Value of manure (owned and purchased).
4. Value of insecticides, pesticides and chemical fertilizer.
5. Deprecation on implements, farm machinery and farm buildings.
6. Irrigation charges.
7. Land revenue, and other taxes.
8. Interest on working capital.
9. Miscellaneous expenses.

Cost A2: Cost A1 + rent paid for leased in land.

Cost B1: Cost A2 + interest on value of owned fixed capital assets (including land).

Cost B2: Cost B1 + rental value of owned land.

Cost C1: Cost B1 + imputed value of family labour.

Cost C2: Cost B2 + imputed value of family labour.

Cost C3: Cost C2 + 10% of C2 (managerial cost)

Measures of farm profit
Gross Income: Yield in quintal × Price per tonne
Net Income: Gross Income – Cost C

Farm Business Income: Gross Income - Cost A2 or Net Income + imputed value of family labour.

Family labour income: Gross Income - Cost C

Farm investment income: Net Income + Rental value of owned land + Interest value of family labour.

Benefit-cost ratio: Cost C / Gross Income

Marketable surplus
It is the quantity of produce left after meeting out the requirements of the producer for family consumption, paid as wages, used for seed purpose etc. In mathematical equation, the marketable surplus of the produce may be expressed as:

$$MS = P - \{C + W + S\}$$

Where,
MS = Marketable Surplus.
P = Total Production.
C = Family Consumption.
W = Quantity use for wage.
S = Quantity kept for seed.

Marketed surplus
Marketed surplus is that quantity of the produce which the producer farmer actually sells in the market, irrespective of his requirements for family consumption, farm needs and other payments. The marketed surplus may be more, less or equal to the marketable surplus.

$$\text{Marketable surplus} \begin{matrix} > \\ = \\ < \end{matrix} \text{Marketed surplus}$$

Marketing cost
The movement of the products from the producers to the ultimate consumers involve costs, taxes and cess which are called marketing costs. These costs vary with the channels through which a particular commodity (cucurbits). Marketing costs indicate the extent of costs incurred in the movement of a commodity from producer to consumer. Marketing cost was worked out using the following formula.

$$Marketing\ cost = T_c = C_p + \sum^n Mci$$

Where,
Tc = Total cost of marketing.
Cp = Cost incurred by the producer in marketing of his Produce.
M_{ci}= Marketing costs incurred by middle men or traders.

Marketing margin
The fraction of total amount between producer and consumer made by middlemen in different marketing channels is known as marketing margin.

Marketing margin of middlemen
This is the difference between the total payment (cost + purchase price) and receipts (sale price) at the middlemen (i^{th} agency). The formula was used,

Absolute margin of ith middlemen (Ami)
$A_{mi} = P_{Ri} - (P_{pi} + C_{mi})$

Percentage margin of ith middleman (P_{mi})

$$P_{mi} = \frac{P_{Ri} - (P_{pi} + C_{mi})}{P_R} \times 100$$

Where,
P_{Ri}= Total value of receipts per unit (sale price)
P_{pi}= Purchase value of produce per unit (purchase price)
C_{mi}= Cost incurred on marketing per unit

Marketing efficiency
The fraction of total amount between producer and consumer made by middlemen in different marketing channels is known as marketing margin.Marketing efficiency was measured through following shephered's formula:The ratio of the total value of goods marketed to the marketing cost was efficiency and vice versa. used to measure the efficiency. The higher the ratio, the higher efficiency and vice versa.

$$Marketing\ efficiency\ (ME) = \frac{V}{I} - 1$$

Where,
V = Value of goods sold (consumer's price)
I = Total marketing costs (MC)
Higher the ratio, the higher efficiency and vice-versa.

Marketing channels:
The chain of intermediaries through whom the various food grains pass from producers to consumers constitutes their marketing channels.

Producer's share in consumer's rupees
It is the price received by the farmer expressed as a percentage of the retail price (i.e., the price paid by the consumer). If P_r is the retail price, the producer's share in the consumer's rupees (P_r) may be expressed as follows:

Price spread
The difference between the price paid by the consumer and the net price received by producer was taken as the concept of spread. This included not only the actual prices at various stages of marketing channels, but also the costs incurred in the process of the movement of the produce from the farm to the consumer and the margin of the various intermediaries. the model prices at different levels were obtained to work out the gross margins of various agencies. The deduction of the costs incurred by the concerned agencies from the gross margins gave rise to net margins.

Result and Discussion
Marketing channels, Marketing costs, Marketing margins and Price spreads of Kala Namak rice
Average size of holding
The study included 60 respondents who were divided into three groups according to their ownership of cropped area land: marginal (below 1 ha), small (1-2 ha), and medium (2-4 ha). Table 4. shows the average holding size for the various groups of sample farms. The table clearly shows that for three separate groups, the average holding size in the research area was 0.548, 1.517, and 3.630 hectares on marginal, small, and medium size farms, respectively. While the holding's overall average size was 1.490 acres. The table clearly shows that the marginal, small, and medium farms each had a net cultivated area of 16.44 ha, 25.8 ha, and 47.2 hectares.

Table 4: Average size of holding on different size of sample farms (ha.)

Sl. No.	Size group of farms	No. of farmers	Net cultivated area (ha.)	Average size of holding
1.	Marginal	30	16.44 (18.38)	0.548
2.	Small	17	25.8 (28.84)	1.517
3.	Medium	13	47.2 (52.54)	3.630
Grand Total		60	89.44 (100.00)	1.490

This section discusses the Kala Namak rice's marketing strategy, primarily the marketable and marketed surplus, marketing expenses, marketing margins, price spread, and marketing effectiveness of the dominant marketing channels in the research area. Since the effectiveness of marketing depends on the number of middlemen involved in the process, it was deemed appropriate to investigate the distribution patterns of Kala Namak rice in the research area using various marketing channels.
To effectively transmit agricultural input and output from producer to consumer, it is important to analyze the Kala Namak rice marketing system in order to comprehend the difficulties involved and spot any bottlenecks. All societal segments profit from an effective marketing strategy since costs are kept to a minimum. As a result, the final phase of every production system is marketing. If the fruit is delivered to consumers in good condition, unharmed, at the lowest possible cost, and quickly after harvest, a marketing system should be better. The marketing of Kala Namak rice is fraught with difficulties due to the market's broad price swings, irregular supply, and prevalence of several middlemen. A successful marketing strategy is essential for increasing farmers' revenue levels.
The main goals of an effective marketing system are to: (a) enable primary producers to reap the greatest rewards; (b) make all products of farm origin available to consumers at a reasonable price without compromising the quality of the produce.
(c) Provide facilities for lifting all produce that farmers are willing to sell at an incentive price; and (d) minimize the price difference between primary producers and the final consumer. Below is a presentation of the marketing analysis for Kala Namak rice in the study area.

Marketing costs and margins
Marketing for agricultural products is crucial for accelerating economic growth as well as encouraging production and consumption. By lowering marketing expenses and the percentage of middlemen, an effective marketing strategy guarantees a higher level of income for the farmers. The estimation of marketing margins, expenses, and price spread for observable marketing channels in the study area is the subject of this section. Knowing the channels via which the

Kala Namak rice product travels from the producers to the final consumer is crucial before examining the marketing costs and margin. This involves a number of marketing organizations that assist the transportation of produce by carrying out various marketing tasks that, in the end, lower the producer's share of the consumer's rupee.

Marketing functionaries/agencies

Market intermediaries are the people who handle the produce from the manufacturer to the final customer. The producer, wholesalers, retailers, and other market participants played a major role in the marketing of Kala Namak rice.

Producer

Most farmers and other producers carry out one or more marketing-related tasks. Typically, farmers gave their goods to wholesalers and retailers.

Wholesalers

Large quantities of Kala Namak rice are bought by wholesalers from farmers or producers, who then sell it to shops and customers. They often handle the tasks of storing and distributing rice to the retailer.

Retailers

Retailers buy the rice at wholesale prices from the wholesaler and then sell it to the consumer. The retailer's margin is the profit the retailer makes when purchasing and reselling produce.

Marketing channels for Kala Namak rice

Different marketing channels for Kala Namak rice were widely used in the study area. The farmers utilised the following channels.

- **Channel - I:** Producer → Consumer;
- **Channel - II:** Producer → Retailer → Consumer; and
- **Channel - III:** Producer → Wholesaler → Retailer → Consumer.

Nature and extent of the marketable and marketed surplus of Kala Namak rice

The difference between the entire production and consumption of Kala Namak rice is the marketable and marketed surplus. The nature and size of the marketable and marketed Kala Namak rice excess per farm, it can be seen that as sample farm size increased, so did the amount of marketable and marketed excess. On marginal, small, and medium-sized groups of farms, respectively, family consumption was found to be 1.95, 6.18, and 14.90 quintals. On marginal small, and medium-sized farms, with an overall average of 44.65 quintals, marketable surplus was seen to be 15.95, 46.72, and 108.1 quintals. It is possible to draw the conclusion that rice farming and farm size in the research area are positively correlated.

Table 5: Nature and extent of the marketable and marketed surplus of Kala Namak rice on different size group of farms (qtl.)

S. No.	Particulars	Size group of farms			Overall Average
		Marginal	Small	Medium	
A.	Total production	17.9 (100.0)	52.9 (100.0)	123.0 (100.0)	50.6 (100.0)
1.	Family consumption	1.95 (10.89)	6.18 (11.68)	14.90 (12.11)	5.95 (11.75)
2.	Marketable surplus	15.95 (89.1)	46.72 (88.31)	108.1 (87.88)	44.65 (88.24)
3.	Storage loss	0.02 (0.11)	0.61 (1.15)	0.95 (0.77)	0.38 (0.75)
4.	Used for feed and other purpose	0.52 (2.90)	1.60 (3.02)	4.07 (3.30)	1.59 (3.14)
5.	Marketed surplus	15.45 (86.3)	44.51 (84.1)	103.08 (83.8)	43.33 (85.6)

(Figures in parentheses indicate percentage to per farm to the total production under each size of samples)

Disposal pattern of Kala Namak rice through different channels of distribution

Given are the relationships between producer and consumer, producer and retailer, and producer and wholesaler, retailer and consumer. Table: 5. According to this table, channel III sold the most quantities of Kala Namak rice (101.26 qtl.), followed by channel II (46.07 qtl.) and channel I (9.71 qtl.). Regarding marginal farms, channel III (9.85 qtl.) saw the highest sales of Kala Namak rice, followed by channel II (4.04 qtl.) and channel I (1.56 qtl.). Small farmers also sold the most Kala Namak rice through channel III (29.53 qtl), followed by channel II (10.22 qtl) and channel I (4.76 qtl), in that order. Similar to small and marginal farms, medium farms likewise sold the most Kala Namak rice in the following order: channel III (67.88 qtl.), channel II (31.81 qtl.), and channel I (3.39 qtl.).

Table 6: Disposed pattern of Kala Namak rice through different channels on different size group of farms (qtl.)

S. No.	Size group of farms	Channel-I		Channel-II		Channel-III		Total Quantity
		N	Disposed Quantity	N	Disposed Quantity	N	Disposed Quantity	
1.	Marginal	4	1.56 (16.06)	9	4.04 (8.76)	17	9.85 (9.72)	15.45 (9.47)
2.	Small	2	4.76 (49.02)	5	10.22 (22.1)	10	29.53 (29.16)	44.51 (27.3)
3.	Medium	2	3.39 (34.9)	3	31.81 (69.04)	8	67.88 (67.03)	103.08 (63.33)
Total		8	9.71 (100.00)	17	46.07 (100.00)	35	101.26 (100.00)	163.04 (100.00)

N = Number of farmers

Price spread, marketing costs, marketing margin and market efficiency

The price spread is the difference between the price that the customer actually paid and the actual (net) price that the producer actually received for a comparable amount of farm produce during the reference period. the difference in price between what a particular marketing agency pays and receives is referred to as the marketing margin. Marketing expenses include fees paid by producers, entire sellers, and retailers in the course of marketing a given procedure, as well as the margin or profits of the middlemen.

The market output (satisfaction) to marketing input (resource expense) ratio is known as the marketing efficiency ratio. A higher ratio indicates greater efficiency, whereas a lower ratio indicates lower efficiency. The marketing margins obtained and the costs associated with handling, assembling,

transporting, etc. at each phase in the marketing process define the net margin received by various agencies at that moment. The producer wants to receive the most percentage of the consumer's rupee. Consumers, on the other hand, are focused on finding the best deal because marketing expenses can be used to determine whether or not a price spread in different directions is justifiable, equitable, and necessary, the study of marketing margins gains prominence and significance. additionally, the analysis of marketing margins can be used to create suitable price regulations for agricultural products, set marketing fees for particular market participants, and assess the effectiveness of the marketing system. The marketing system can be said to be effective if the items can be moved from producers to consumers for the least amount of money and with the least amount of economic waste possible while still meeting customer demand.

Channel – I (Producer → Consumer)

The price spread for Kala Namak rice in the research area was calculated and is shown in Table 7 as (marketing cost + market margin). according to the table, marginal, small, and medium farms had price spreads of ₹68.08, ₹70.40, and ₹72.56 per quintal, respectively, accounting for 1.16, 1.20, and 1.48 percent of the consumer price. The average marketing expense borne by the producer, which accounted for1.40 percent of the consumer's purchase and included shipping, labour, and loss during the sale, was calculated to be ₹ 69,70 per quintal. In comparison to the other three channels, the producer's share of consumer rupee was greatest at 98.50%.

Table 7: Price spread for Kala Namak rice through Channel - I (Producer → Consumer) (₹/qtl.)

S. No.	Particulars	Size group of farms			Overall average
		Marginal	Small	Medium	
1.	Net price received by the producer	5800.00 (98.8)	5786.6 (98.7)	5761.44 (98.5)	5487.80 (98.5)
2.	**Cost incurred by the producer**				
(i)	Transportation	10.62	10.84	11.10	10.78
		(0.18)	(0.18)	(0.20)	(0.19)
(ii)	Cost of bags	19.05	19.53	20.00	19.39
		(0.32)	(0.33)	(0.36)	(0.34)
(iii)	Weighing charge	5.85	5.94	6.24	5.96
		(0.10)	(0.10)	(0.11)	(0.10)
(iv)	Loading and unloading	12.29 (0.20)	12.30 (0.21)	12.35 (0.22)	12.30 (0.22)
(v)	Losses	10.27	11.23	11.96	10.90
		(0.17)	(0.19)	(0.21)	(0.19)
(vi)	Other	10.00	10.56	10.91	10.35
		(0.17)	(0.18)	(0.37)	(0.36)
(vii)	Total cost incurred by the producer	68.08	70.4	72.56	69.70
		(1.16)	(1.20)	(1.48)	(1.40)
3.	Producer sale price/consumer purchase price	5868	5857	5834	5857.51
		(100.00)	(100.00)	(100.00)	(100.00)
4.	Price spread	68.08	70.4	72.56	69.70
		(1.16)	(1.20)	(1.48)	(1.40)
5.	Marketing Efficiency	86.19	83.19	80.40	84.03
		(1.46)	(1.42)	(1.37)	(1.43)

Channel – II (Producer → Retailer → Consumer)

It is observed from Table: 7 that the sale of Kala Namak rice was made through producer → retailer → consumer. On an average, share in consumer's rupee was worked out i.e., 95.30 percent, which was comparatively lower than channel - I because of one middleman i.e., the retailer involved. Expenses incurred on the marketing of Kala Namak rice and margins received by retailer came to 1.20 and 2.08 percent, respectively. Per quintal price received by marginal, small and medium farms were ₹5700.33, ₹ 5686.86, and ₹ 5661.85, however, the producer's share in consumers rupee was 95.36, 95.27 and 95.17 percent, respectively. It also revealed from the table that the price spread came to ₹276.67, ₹ 282.35 and ₹ 287.27 per quintal on marginal, small and medium farms, respectively with accounted for 4.62, 4.73 and 4.82 percent of the consumer's price. On an average price spread was worked out i.e., ₹ 280.47 per quintal accounted for 4.69 percent.

Table 8: Price spread for Kala Namak rice marketing in Channel – II (Producer → Retailer → Consumer) (₹/qtl.)

S. No.	Particulars	Size group of farms			Overall average
		Marginal	Small	Medium	
1.	Net price received by the producer	5700.33 (95.36)	5686.86 (95.27)	5661.85 (95.17)	5688.17 (95.30)
2.	Cost incurred by the producer				
(i)	Transportation cost	24.23 (0.40)	24.83 (0.41)	24.97 (0.41)	24.56 (0.41)
(ii)	Cost of bags	19.6 (0.32)	19.8 (0.32)	19.9 (0.33)	19.72 (0.33)
(iii)	Weighing charge	5.50 (0.09)	5.72 (0.09)	5.87 (0.09)	4.45 (0.07)
(iv)	Loading and unloading	12.50 (0.20)	12.86 (0.21)	13.21 (0.21)	12.75 (0.21)
(v)	Losses	10.34 (0.17)	10.59 (0.17)	10.82 (0.17)	10.51 (0.17)
(vi)	Other	10.00 (0.16)	10.37 (0.17)	10.81 (0.18)	10.28 (0.17)
(vii)	Total cost incurred by the producer	82.57 (1.30)	84.17 (1.41)	85.58 (1.43)	83.67 (1.40)
(viii)	Producer sale price / Retailer purchase price	5783 (96.75)	5771 (96.60)	5747.43 (96.60)	5771.8 (96.70)
3.	**Cost incurred by the retailer**				
(i)	Transportation	22.58 (0.37)	22.76 (0.38)	22.99 (0.38)	22.71 (0.38)
(ii)	Grading	5.72 (0.09)	5.87 (0.09)	6.02 (0.10)	5.82 (0.09)

(iii)	Loading and unloading	12.27 (0.20)	12.63 (0.21)	12.74 (0.21)	12.47 (0.20)
(iv)	Market fee	10.29 (0.17)	10.53 (0.17)	10.81 (0.18)	10.47 (0.17)
(v)	Losses	5.38 (0.09)	5.67 (0.09)	5.95 (0.10)	5.58 (0.09)
(vi)	Other charges	14.82 (0.24)	15.03 (0.25)	15.21 (0.25)	14.96 (0.25)
	Total cost incurred by the retailer	71.06 (1.18)	72.49 (1.21)	73.72 (1.23)	72.04 (1.20)
4.	Retailer net margin	123.04 (2.05)	125.28 (2.09)	127.97 (2.15)	124.74 (2.08)
5.	Retailer sale price/ consumer purchase Price	5977 (100.00)	5968.77 (100.00)	5949.12 (100.00)	5968.63 (100.00)
6.	Price spread	276.67 (4.62)	282.35 (4.73)	287.27 (4.82)	280.47 (4.69)
7.	Marketing Efficiency	21.60 (0.36)	21.13 (0.35)	20.70 (0.34)	21.28 (0.35)

Channel – III (Producer → Wholesaler → Retailer → Consumer)

Channel - III i.e., producer → wholesaler → retailer → consumer was involved in the marketing of Kala Namak rice. On an average, the share in consumer's rupee was worked out i.e., 92.47 percent, which was comparatively lower than channel – I and II because of two middlemen i.e., wholesaler and retailer involved. Expenses incurred on marketing costs at wholesalers and retailers were 0.48 and 1.24 percent, respectively. Per quintal price received by marginal, small and medium farms were ₹ 5608.00, ₹ 5596.00, and ₹ 5574.00 however, the producer's share in consumers rupee was 92.56, 92.44 and 92.26 percent, respectively. It also revealed from the table that the price spread came to ₹ 450.37, ₹ 457.37 and ₹ 467.45 per quintal on marginal, small and medium farms, respectively with accounted for 7.43, 7.56 and 7.74 percent of the consumer's price. On an average price spread was worked out i.e., ₹ 456.00 per quintal accounted for 7.53 percent.

Table 9: -Price spread for Kala Namak rice in Channel – III (Producer → Wholesaler → Retailer→Consumer) (₹/qtl.)

S. N.	Particulars	Size group of farms			Overall average
		Marginal	Small	Medium	
1.	Net price received by the producer	5608.00	5596.00	5574.00	5597.23
		(92.56)	(92.44)	(92.26)	(92.47)
2.	**Cost incurred by the producer**				
(i)	Transportation cost	38.84	38.20	38.89	38.66
		(0.64)	(0.63)	(0.64)	(0.64)
(ii)	Cost of bags	19.42	19.61	19.82	19.56
		(0.32)	(0.32)	(0.33)	(0.32)
(iii)	Weighing charge	4.58	4.80	5.25	4.78
		(0.07)	(0.08)	(0.09)	(0.08)
(iv)	Loading and unloading	12.76	12.94	12.34	12.72
		(0.20)	(0.21)	(0.20)	(0.21)
(v)	Losses	10.21	10.49	10.87	10.43
		(0.16)	(0.17)	(0.18)	(0.17)
(vi)	Other	9.60	9.84	10.20	19.58
		(0.31)	(0.16)	(0.17)	(0.32)
(vii)	Total cost incurred by the producer	95.41	95.88	95.37	95.53
		(1.57)	(1.58)	(1.58)	(1.58)
(viii)	Producer sale price/ wholesaler purchase price	5703.41	5691.88	5669.37	5692.76
		(94.14)	(94.03)	(93.84)	(94.04)
3.	**Cost incurred by the wholesaler**				
(i)	Grading	4.52	4.76	4.89	4.66
		(0.07)	(0.08)	(0.08)	(0.08)
(ii)	Market fee	7.14	7.56	7.91	7.42
		(0.11)	(0.12)	(0.13)	(0.12)
(iii)	Loading & unloading	12.40	12.67	12.85	12.57
		(0.19)	(0.21)	(0.21)	(0.21)
(iv)	Weighing charge	5.09	5.18	5.34	5.16
		(0.08)	(0.09)	(0.09)	(0.09)
(v)	Total cost incurred by Wholesaler	29.15	29.17	29.99	29.33
		(0.48)	(0.48)	(0.50)	(0.48)
(vi)	Wholesaler margin	120.89	123.27	126.68	122.81
		(1.99)	(2.04)	(2.10)	(2.03)
(vii)	Whole seller's sale price / retailer purchase price	5853.45 (96.61)	5844.32 (97.21)	5826.04 (96.43)	5844.9 (96.56)
4.	**Cost incurred by the retailer**				
(i)	Transportation	22.53	23.84	25.43	23.52
		(0.35)	(0.39)	(0.42)	(0.39)
(ii)	Loading unloading	12.62	12.93	12.12	12.59
		(0.20)	(0.21)	(0.20)	(0.21)
(iii)	Grading	4.81	4.97	5.10	4.91
		(0.07)	(0.08)	(0.08)	(0.08)
(iv)	Weighing charge	5.24	5.59	5.73	5.44
		(0.08)	(0.09)	(0.09)	(0.09)
(v)	Rent of shop/ rehire	10.48	10.69	10.95	10.64
		(0.16)	(0.18)	(0.18)	(0.18)
(vi)	Loses	9.25	9.43	9.74	9.40

		(0.14)	(0.16)	(0.16)	(0.16)
(vii)	Other charges	8.17	8.36	8.62	8.32
		(0.14)	(0.14)	(0.14)	(0.14)
(viii)	Total cost incurred by Retailer	73.1	75.81	78.69	75.07
		(1.20)	(1.25)	(1.30)	(1.24)
(ix)	Retailer margin	131.82	133.24	136.72	133.28
		(2.17)	(2.20)	(2.26)	(2.20)
(x)	Retailer sale price / consumer purchase Price	6058.37	6053.37	6041.45	6053.25
		(100.00)	(100.00)	(100.00)	(100.00)
5.	Price spread	450.37	457.37	467.45	456.00
		(7.43)	(7.56)	(7.74)	(7.53)
6.	Marketing Efficiency	13.45	13.23	12.92	13.27
		(0.22)	(0.22)	(0.21)	(0.22)

Inter-channel comparison as a whole for Kala Namak rice

Table 9 highlights a comparison of typical marketing expenses, margins, and pricing spreads across channels for Kala Namak rice. It's important to note that as the number of intermediaries under channels II and III expanded, marketing expenditures also rose. Gross marketing margins were found to be at their highest in channel III, where they were 7.53 percent, followed by 4.69 percent and 7.53 percent in channel II and channel I, respectively

Table 10: Inter-channel comparison as a whole for Kala Namak rice (₹/qtl.)

S. No.	Particulars	Channel-I	Channel-II	Channel- III
1.	Price Received by the producer	5487.80 (93.68)	5688.17 (95.30)	5597.23 (92.46)
2.	**Cost incurred by the producer**			
(i)	Total cost incurred by the producer	69.70 (1.18)	83.67 (1.40)	95.53 (1.57)
(ii)	Producer sale price / consumer purchase price	5857.51 (100)	5771.85 (96.70)	5692.76 (94.04)
3.	**Cost incurred by the retailer**			
(i)	Total cost incurred by the retailer		72.04 (1.20)	
(ii)	Retailer net margin		124.74 (2.08)	
(iii)	Retailer sale price/ Consumer purchase price		5968.63 (100)	
4.	**Total cost incurred by the wholesaler**			
(i)	Total cost incurred by the wholesaler			29.33 (0.48)
(ii)	Wholesaler margin			122.81 (2.02)
(iii)	Wholesaler' s sale price/retailer purchase price			5844.9 (96.55)
5.	**Total cost incurred by the retailer**			
(i)	Total cost incurred by the retailer			75.07 (1.24)
(ii)	Retailer margin			133.28 (2.20)
(iii)	Retailer sale price/ consumer purchase price			6053.25 (100)
(6)	Price spread	69.70 (1.18)	280.47 (4.69)	456.00 (7.53)

Marketing efficiency of Kala Namak rice

The marketing efficiency of Kala Namak rice under different marketing channels has been presented in Table:10.

Table 11: Marketing efficiency of Kala Namak rice in different channels

Channel	Value of Kala Namak rice sold (₹/qtl.) (consumer's price)	Gross marketing margin (₹/qtl.) (Cost + margin)	Marketing Efficiency
I	5857.51	**69.70**	84.03
II	5968.63	280.47	21.28
III	6053.25	456.00	13.27

Channel I was found to be more effective than channels II and III since producers were sold straight to the consumers and there were no middlemen, resulting in lower marketing costs in channel I as compared to other channels.

Producer's share in consumer's rupee, marketing costs and middlemen margins of Kala Namak rice under different channels: Producer's share of the consumer's rupee (in percentage), marketing costs (in rupees per unit of quantity), and middleman margins (in rupees per unit of quantity) for various marketing channels for Kala Namak rice. The producer's share of the consumer's rupee reached a maximum in channel I at 98.50%, followed by channel II and channel III at 95.30% and 92.46%, respectively.

Table 12: Producer's share in consumer's rupee, marketing costs, and middlemen margins of Kala Namak rice in different channels

Particulars	Channel		
	I	II	III
Producer' share in consumer's rupee (%)	93.68	95.30	92.46
Marketing cost (₹/qtl.)	69.70	155.71	200.00
Middlemen margins (₹/qtl.)	0.00	124.74	256.09

Maximum marketing costs per quintal were observed in channel III at ₹ 200.00, followed by ₹ 155.71 in channel II and ₹ 69.70 in channel I. under channels II and III, middlemen profits were predicted to be ₹124.74 and ₹256.09 per quintal, respectively.

Summary and Conclusion

Any nation's economic development is greatly influenced by agriculture, but this is especially true of nations with low per capita real income. More than any other factor, agriculture has aided nations in their industrialization. As a result, industrialization and agricultural development are complimentary and mutually supportive for both inputs and output, rather than being alternatives.

Regarding the marketing study, three different types of marketing channels, namely Channel I (producer – consumer), Channel II (producer – retailer – consumer), and Channel III (producer – wholesaler – retailer – consumer), were seen in the Kala Namak rice marketing. different groups of farmers sold the most Kala Namak rice yield overall through channel III. In comparison to other channels, channel III had the highest marketing costs, whereas channel I had the highest producer share of consumer's rupee and channel III had the lowest.

On marginal, small, and medium-sized farms, the family usage of Kala Namak rice was seen to be 1.95, 6.18, and 14.90 quintals, while the marketable and marketed surplus was observed to be 15.95, 46.72, 108.1 and 15.45, 44.51, 103.08 quintals, respectively. the total amount of Kala Namak rice disposed of was 163.04 quintals, of which 9.71, 46.07, and 101.26 quintals were disposed of by channel I, channel II, and channel III, respectively.

On average, the producer earned a net price of ₹5487.80, ₹5688.17, and ₹5597.23 per quintal via channels I, II, and III. Farmers that sold their produce directly to customers in the neighbour hood obtained the highest net price under channel I. By comparing gross marketing margins, it was discovered that channel III had the highest margin at 7.53 percent, followed by channels II and I with 4.69 percent and 1.18 percent, respectively.

Because there were no middlemen in channel I, the marketing effectiveness of Kala Namak rice was found to be higher (84.03) than it was in channels II (21.28) and III (13.27).

The highest producer share in consumer rupees was discovered in Kala Namak rice, which was found in channel I at 93.68%, followed by channels II and III at 95.30% and 92.46%, respectively.

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