Analysing Costs and Marketing Channels in Natural Rubber Marketing in Karnataka, India

Abstract

This study examines the costs and marketing channels involved in the trade of natural rubber in Karnataka, the third-largest rubber-producing state in India. Conducted in Dakshina Kannada and Udupi districts, the research focuses on the marketing arrangements for rubber latex and rubber sheets. The findings reveal that a significant majority (63.33%) of farmers prefer selling rubber sheets through Type-2 Rubber Producers' Societies (RPS), which handle over 60% of the rubber production. The study highlights that transportation is the largest cost component across all channels. The study also identifies three primary marketing channels: Channel-1 (Farmer → Type-1 RPS → Manufacturers), Channel-2 (Farmer → Type-2 RPS → Marketing Co-operatives → Manufacturers), and Channel-3 (Farmer → Primary Dealer → Secondary Dealer → Manufacturers). The analysis of price spreads shows that Channel-1 provides the highest producer share in the consumer's rupee (97.94%), followed by Channel-2 (95.72%) and Channel-3 (95.03%). The study underscores the need for optimized logistics and improved marketing efficiency.

Key words: Natural Rubber, Marketing Channels, Transportation Cost, Price Spread, Rubber Producers' Societies

Introduction

India is a leading producer of natural rubber, with Kerala ranking first in production, followed by Tripura and Karnataka. Unlike many other crops, rubber plants do not require irrigation and can thrive on lands unsuitable for conventional agriculture, such as in parts of Karnataka. This adaptability has contributed to a significant expansion of rubber cultivation in the state, with a growth rate of 8.84% from 2005-06 to 2014-15. In 2014-15, India had 5,49,955 hectares under rubber cultivation, with Kerala (69.16%) holding the largest share, followed by Tripura (9.44%), Assam (6.51%), and Karnataka (6.19%). Smallholdings (<10 ha) constituted 91% of plantations. Kerala led production with 5,07,700 tonnes, followed by Tripura and Karnataka. In 2015-16, India's average productivity was 1,443 kg/ha, with Tamil Nadu achieving the highest productivity, followed by Kerala (1,474 kg/ha) and Karnataka (1,459 kg/ha). The RSS grade accounted for 66.8% of production, with solid block rubber (16.5%) and latex concentrates (12.8%) contributing significantly.

To comprehend how rubber is marketed by farmers and the benefits they derive from different channels, this study was initiated with the following objectives:

1. To estimate the costs incurred in key marketing channels of rubber latex and rubber sheets in Karnataka.
2. To assess the price spread across major marketing channels in the state.

Materials and methods

For the study purpose, two districts from Karnataka were selected based on the average area under rubber plantations during a period of past ten years. This resulted in the selection of Dakshina Kannada and Udupi districts of Karnataka. Following the similar criteria, further two taluks from each district were selected. The selected taluks include Belthangady and Sullia in Dakshina Kannada district, as well as Karkala and Kundapura in Udupi district. From each taluk, 15 rubber farmers were randomly selected. Three Rubber Producers' Societies, three primary dealers, and three secondary dealers were chosen from each taluk. Since there was only one operational marketing co-operative society in Karnataka, its branches across the four taluks were included in the study. Thus, a total of 60 farmers and 40 market intermediaries were selected for the study. Tabular analysis and percentage calculations were used to interpret the data.

Results and Discussion

The study focused on the marketing costs of various intermediaries and the producers' share in the consumers' rupee, examining three primary marketing channels, as identified through consultations with farmers, RPS representatives, and officials from the Rubber Board. Producers share in consumers' rupee was computed as an indicator of marketing efficiency for three major channels of rubber trade in Karnataka.

Major Marketing Channels for Rubber identified in Karnataka:

1. **Channel-1**: Farmer → RPS (Type-1) → Manufacturing companies

   In this channel, latex is sold by farmers to Type-1 RPS, where it is processed into rubber sheets before being sold to manufacturing companies.

2. **Channel-2**: Farmer → RPS (Type- 2) → Marketing co-operatives → Manufacturing companies

Farmers sell rubber sheets directly to Type-2 RPS, which act as agents for marketing co-operatives. The co-operatives then sell the sheets to manufacturers.

3. **Channel-3**: Farmer → Primary dealer → Secondary dealer → Manufacturing companies

   Rubber sheets move from farmers to primary dealers and then to secondary dealers, who eventually sell them to manufacturing companies.

The Ribbed Smoked Sheets (RSS) of different grades are processed from fresh field latex. RSS are coagulated rubber sheets processed from fresh field latex sourced from well managed rubber plantations. The higher grades, RSS 1 to RSS 3 are mainly used for the manufacture of products for medical, pharmaceutical and engineering applications. The lower grades of RSS 4 and 5 are generally used for the manufacture of automobile tyres, retreading materials and all other general products. The quality of RSS is ascertained as laid down in Green Book Standards (GBS). The major uses of RSS are in the manufacture of aero tyres and tubes, automotive tyres and tubes, footwear items, belts and hoses. The ribbed smoked sheets are found to be the major form of trading rubber in the existing market.

Table 1. Sample farmers' preference for intermediaries in their sales decision in Karnataka (2015-16)

(n= 60)

Intermediary to whom farmer sells	No. of farmers	%	Quantity sold (tonnes)	%
RPS (Type- 1)	8	13.34	19.72	14.03
RPS (Type- 2)	38	63.33	86.89	61.81
Primary dealer	14	23.33	33.96	24.16
Total	60	100.00	140.57	100.00

Source: Primary data

Table 1 presents farmers' preferences for various market intermediaries in rubber sales. The majority of farmers (63.33%) opted to sell their rubber sheets through Type-2 Rubber Producers' Societies (RPS), which collectively handled 61.81% of the total rubber output from the sample group. This preference is largely driven by the fact that most farmers process rubber sheets within their own facilities, benefiting from value addition. Additionally, RPS is farmer-owned, making it a more trusted and farmer-friendly alternative to primary dealers.

The second most preferred channel was primary dealers, chosen by 23.33% of farmers, accounting for 24.16% of the total rubber traded. Meanwhile, 13.34% of farmers sold latex through Type-1 RPS, contributing 14.03% to the overall rubber market.

Marketing Costs:

Table 2. Costs incurred in major marketing channels of rubber latex/ sheets in Karnataka

(Rs./ q)

Sl. No.	Particulars	Channels	Producers	RPS	Marketing cooperatives	Primary dealers	Secondary dealers
1	Weighing	Channel- 1	2.05	3.52	-	-	-
		Channel- 2	3.11	3.67	5.17	-	-
		Channel- 3	4.50	-	-	3.00	5.83
2	Packaging	Channel- 1	-	11.60	-	-	-
		Channel- 2	-	12.00	20.67	-	-
		Channel- 3	-	-	-	9.67	14.00
3	Storing	Channel- 1	5.37	26.65	-	-	-
		Channel- 2	7.55	19.50	35.17	-	-
		Channel- 3	10.25	-	-	16.60	43.33
4	Loading and unloading	Channel- 1	8.25	24.95	-	-	-
		Channel- 2	11.50	22.50	52.00	-	-
		Channel- 3	15.75	-	-	25.00	35.83
5	Transportation	Channel- 1	15.22	78.38	-	-	-
		Channel- 2	16.61	51.83	118.50	-	-
		Channel- 3	23.50	-	-	57.00	92.00
6	Sales tax	Channel- 1	-	-	-	-	-
		Channel- 2	-	-	13.00	-	-
		Channel- 3	-	-	-	6.25	10.50
7	Miscellaneous	Channel- 1	4.11	8.90	-	-	-
		Channel- 2	5.23	10.50	15.50	-	-
		Channel- 3	8.00	-	-	7.48	8.51
8	Total	Channel- 1	35.00	154.00	-	-	-
		Channel- 2	44.00	120.00	260.00	-	-
		Channel- 3	62.00	-	-	125.00	210.00

Source: Primary data

Table 2 provides a comprehensive breakdown of the marketing costs incurred by farmers and intermediaries across different marketing channels.

Total marketing costs for farmers changed based on which marketing channel they selected. A comparison between Channel-1 and Channel-2 showed that farmers spent Rs. 35 per quintal and increased to Rs. 44 per quintal. Channel-3 represented the channel with the highest expenditure per quintal for farmers who paid Rs. 62. The majority of marketing costs consisted of transportation expenses reaching Rs. 15.22 per quintal for Channel-1 and Rs. 16.61 for Channel-2 and Rs. 23.50 for Channel-3. Farmers' costs grow heavier when they shift from direct sales to progressively complex marketing channels.

The overall marketing costs for Rubber Producer Societies (RPS) in Channel-1 reached Rs. 154 per quintal while Channel-2 recorded Rs. 120. The analysis showed that transportation expenses dominated the overall marketing costs with Rs. 78.38 per quintal for Channel-1 and Rs. 51.83 per quintal for Channel-2. The marketing expense divergence results from differing logistical configurations and economies of scale variations.

The involvement of marketing cooperatives in Channel-2 resulted in significantly elevated marketing expenses reaching Rs. 260 per quintal. Cooperative-based marketing required spending Rs. 118.50 per quintal of product on transportation expenses, indicating how logistics costs affected cooperative distribution.

The primary dealers within Channel-3 engaged in marketing costs totalling Rs. 125 per quintal and secondary dealers expended Rs. 210 per quintal. The transportation expenses formed a major expenditure for dealers from both primary and secondary channels who spent Rs. 57.00 and Rs. 92.00 per quintal respectively for transportation. The cost increases directly with the number of intermediaries operating in the supply chain thus influencing the price received by farmers.

The financial results acknowledge marketing channels as determinants in expense reduction and demand logistics transportation approaches that enhance monetary outcomes for both farmers and intermediaries.

Price Spread and Producers' Share in Consumers' Rupee:

Table 3. Price spread in major marketing channels of rubber latex/ sheets in Karnataka

(Rs./ q)

Sl. No.	Particulars	Channel- 1	Channel- 2	Channel- 3
1	Price received by producer	13,075	11,180	11,100
2	Marketing cost of producer	35	44	62
3	Net price received by the producer	13,040	11,136	11,038
4	Price paid by RPS	13,075	11,180	-
5	Marketing cost of RPS	154	120	-
6	Margin of RPS	120	40	-
7	Sale price of RPS	13,349	11,340	-
8	Purchase price of marketing co-operative	-	11,340	-
9	Marketing cost of marketing co-operative	-	260	-
10	Margin of marketing co-operative	-	80	-
11	Sale price of marketing co-operative	-	11,680	-
12	Purchase price of primary dealers	-	-	11,100
13	Marketing cost of primary dealers	-	-	125
14	Margin of primary dealers	-	-	95
15	Sale price of primary dealers	-	-	11,320
16	Purchase price of secondary dealers	-	-	11,320
17	Marketing cost of secondary dealers	-	-	210
18	Margins of secondary dealers	-	-	150
19	Sale price of secondary dealers	-	-	11,680
20	Purchase price of companies	13,349	11,680	11,680
21	Price spread	274	500	580
22	**Producers' share in consumers' rupee (%)**	**97.94**	**95.72**	**95.03**

Source: Primary data

Table 3 demonstrates the rubber price variations between three primary marketing channels while showing that Channel-1 (Type-1 Rubber Producers' Societies) achieves the lowest spread of Rs. 274 per quintal. The price spread in Channel-1 operating through Type-1 Rubber Producers' Societies (RPS) amounted to Rs.274 per quintal while providing 97.94% producer share in the consumer's rupee. The price spread for Type-2 RPS via Channel-2 was set at Rs. 500 while producers maintained control of 95.72% of the final retail price. Primary and secondary dealers in Channel-3 operated among the three marketing channels with the most

extreme price spread of Rs. 580 per quintal while providing producers the smallest portion of 95.03% from the retail revenue.

Type-1 RPS delivers superior rubber sheets that achieve higher market prices thus explaining why Channel-1 contains more farmers. Research by Anuja et al. (2012) confirmed that marketing channels overseen by Rubber Producers' Societies operate efficiently. Through initiatives like real-time market updates and enhanced transparency the Rubber Board successfully helped farmers achieve better price realization. The research shows that improving rubber standards and enhancing farmers' market position through RPS associations creates better price equilibrium while boosting profits and advancing rubber trading with an improved farmer-centric approach.

Conclusion:

Natural rubber cultivation in Karnataka grows substantially because farmers depend on the well-organized marketing system including RPS to sell their products. The research established Channel-1 provides farmers with the most consumer spending then Channel 2 and Channel 3 show similar levels of consumer spending. The cost of transporting goods represents the primary component of the total marketing expenses which exist across every sales channel.

The data obtained from this research creates substantial value for enhancing rubber marketing efficiency within Karnataka. This analysis provides essential supply chain optimization insights by revealing major cost elements especially transportation together with intermediary contribution. The obtained knowledge serves as a resource for policymakers and industry stakeholders to build better infrastructure and optimize logistics and costs so farm profits increase. Strengthening Rubber Producers' Societies and cooperatives through direct market access will provide farmers with more efficient markets which reduces price spreads and improves price transparency. These proposed changes would serve to develop strategies which enable favourable support for rubber cultivation while establishing sustainable market structures throughout Karnataka and other parts of the country.

Disclaimer (Artificial intelligence)

Author(s) hereby declare that NO generative AI technologies such as Large Language Models (ChatGPT, COPILOT, etc.) and text-to-image generators have been used during the writing or editing of this manuscript.

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