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Marketing of arecanut in Shivamogga district of Karnataka: an economic analysis

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ABSTRACT

Arecanut (*Areca catechu* L.) is one of the principal commercial plantation crops of the Malnad tract of Karnataka, and the returns that growers realise from the crop depend heavily on the efficiency with which it is marketed. This study examines the marketing dimension of arecanut cultivation in Shivamogga district among sample growers grouped into small, medium and large farm-size categories. Three marketing channels were identified in the study area: Channel I, involving the producer, retailer and consumer; Channel II, involving an additional wholesaler; and Channel III, involving a pre-harvest contractor and a wholesaler ahead of the retailer. Channel I handled the largest proportion of the produce sold (56.90 per cent), followed by Channel II (25.37 per cent) and Channel III (17.73 per cent). The per-quintal marketing cost borne by farmers was highest in Channel II (₹396.03) and lowest in Channel III (₹100.00), while the price spread widened steadily from ₹37,943 in Channel I to ₹50,991 in Channel III. Correspondingly, the producer's share in the price paid by the consumer declined from 24.0 per cent in Channel I to 18.4 per cent in Channel III, and marketing efficiency fell from 31 to 23 over the same channels. The findings suggest that shortening the marketing chain and strengthening farm-level grading and collective marketing arrangements can meaningfully improve the price realisation of arecanut growers in the district.

Keywords: Arecanut, marketing channels, Producer's share

1. Introduction

Commercial plantation crops occupy a distinct place in Indian agriculture because, unlike most seasonal crops, they lock in decades of investment and expose growers to sustained price risk over the life of the plantation. Arecanut (*Areca catechu* L.), commonly known as betel nut or supari, is among the most important of these crops. Beyond its masticatory and socio-religious uses, the crop forms the economic backbone of a large number of farm families across peninsular and eastern India, and value-added products derived from it, such as scented supari and pan masala inputs, are exported to several countries in South-East Asia and the Gulf (Mitra *et al.*, 2018) [1]. India is by far the largest arecanut-growing country in the world, accounting for roughly half of the global area and production under the crop, with cultivation concentrated mainly in Karnataka, Kerala, Assam, West Bengal and Meghalaya (Mitra *et al.*, 2018) [1].

Within India, Karnataka has emerged as the leading arecanut-growing state, and the area devoted to the crop in the state has expanded rapidly over the last decade as farmers have shifted away from traditional field crops in search of steadier returns (Directorate of Economics and Statistics, 2024). Much of this expansion has taken place in the Malnad region, of which Shivamogga district forms a part. The district's humid, high-rainfall agro-climate is well suited to arecanut, but it also renders long-duration plantations vulnerable to recurring pest and disease pressure, so that even a well-managed garden remains exposed to considerable production risk over its productive life. Once the produce is harvested, however, a second and equally consequential source of risk emerges from the market itself: the price a grower ultimately realises depends not only on the mandi price of the day but on how many intermediaries the produce passes through before it reaches the final consumer.

Unlike food grains, arecanut is seldom sold by farmers directly to consumers. Instead, the produce typically moves through a chain of retailers, wholesalers, commission agents and, in many cases, pre-harvest contractors who purchase the standing crop before it is even harvested. Each intermediary in this chain performs a genuine economic function, whether assembling small, scattered lots into marketable quantities, grading and storing the produce, or bearing the risk of price fluctuation between purchase and resale, and each is correspondingly entitled to a margin for the service rendered. The practical difficulty is that the cumulative effect of several such margins, layered one upon another, can leave the farmer with only a modest fraction of what the final consumer pays, even when the produce itself has changed little in form along the way. Evidence from other arecanut-growing tracts underlines this concern: in Kerala, for instance, the crop historically

moved through a chain of village traders, itinerant merchants and private wholesalers before organised cooperative marketing helped narrow the gap between farm-gate and consumer prices (Karunakaran, 2014) [2].

Cost-of-cultivation studies on arecanut are comparatively well established in the literature, but the marketing side of the enterprise, specifically the channels farmers actually use, the cost and margin structure at each stage, and how efficiently the resulting price spread converts into farmer income, has received relatively less district-specific attention in Shivamogga. Since marketing efficiency has a direct bearing on farm income independent of yield and cost of cultivation, examining it separately is necessary to identify where policy intervention, whether through grading support, market information or collective marketing, would have the greatest effect on the price a farmer actually receives. It is against this background that the present study was undertaken, with the following specific objectives: (i) to identify the marketing channels through which arecanut moves from the sample growers to the final consumer; (ii) to estimate the marketing cost and margin incurred at each stage of these channels; (iii) to work out the price spread, the producer's share in the consumer's rupee and the marketing efficiency associated with each channel; and (iv) to identify, using Garrett's ranking technique, the constraints that growers perceive as most serious in marketing their produce.

2. Materials and Methods

2.1 Study area and sampling

The study was conducted in Shivamogga district of *Karnataka*, a leading arecanut-growing district located in the state's Malnad region. A multistage sampling design was followed in Sagara and Thirthahalli taluks and villages with a substantial area under arecanut were selected and the sample growers within these villages were subse-

quently classified into small, medium and large farm-size categories on the basis of the area held under the crop. Primary data on the quantity of arecanut sold through each marketing channel, the price received and the cost incurred at each stage of sale were collected directly from the sample growers through personal interview using a pre-tested schedule, and were supplemented with information obtained from the intermediaries operating in the identified channels, namely pre-harvest contractors, wholesalers and retailers, in order to trace the complete build-up of price from the farm gate to the final consumer.

3. Identification of marketing channels

The specific route through which each sample grower disposed of the produce was recorded, and these routes were then grouped into a small number of distinct marketing channels on the basis of the intermediaries involved between the producer and the final consumer.

3.1 Marketing cost, margin, price spread and producer's share

For each identified channel, the marketing cost incurred by the farmer and by every subsequent intermediary was compiled under heads such as grading, packing, transportation, loading and unloading, weighing and other incidental charges. The marketing margin retained by each intermediary was worked out as the difference between the price at which the produce was sold and the price paid for it, net of the marketing cost incurred by that intermediary. The price spread for each channel was then obtained, following the standard approach used in agricultural marketing research (Acharya & Agarwal), as the difference between the price paid by the final consumer and the net price received by the producer. The producer's share in the consumer's rupee was calculated as:

$$\text{Producer's share (\%)} = (\text{Net price received by the producer} / \text{Price paid by the consumer}) \times 100$$

3.2. Marketing efficiency

Marketing efficiency for each channel was estimated using the modified measure suggested by Acharya and Agarwal, expressed as:

$$\text{Marketing Efficiency} = \text{FP} / (\text{MC} + \text{MM}) \times 100$$

where FP is the net price received by the farmer, MC is the total marketing cost incurred across the channel and MM is the total marketing margin retained by all intermediaries in that channel. A higher value

of this measure indicates a channel that converts a larger share of the total marketing cost and margin into farmer price, and is therefore more efficient from the producer's point of view.

3.3. Garrett's ranking technique

The relative seriousness of the marketing constraints reported by growers was assessed using Garrett's ranking technique. Growers were asked to rank the constraints they faced in order of severity, and the ranks assigned by each respondent were converted into percentage positions using the formula:

$$\text{Percentage position} = 100(R_{ij} - 0.5) / N_j$$

where R_{ij} is the rank given to the i -th constraint by the j -th respondent and N_j is the number of constraints ranked by that respondent. Each percentage position was then converted into a score using Garrett's conversion table, the scores for each constraint were averaged across all respondents, and the constraints were finally ordered from the highest to the lowest mean score to obtain their overall rank.

4. Results and Discussion

Marketing of raw, unhusked arecanut begins as soon as the crop is harvested and involves moving the produce from the farm to one or more categories of buyer, chiefly retailers, wholesalers, processing units and other market intermediaries. The specific route a grower follows depends on the quantity produced, the price prevailing in the local market, the accessibility of regulated markets and the availability of buyers in the vicinity. Because more than one intermediary may stand between the producer and the final buyer, and because each intermediary is compensated for the function it performs, the gap between the price the farmer receives and the price the consumer eventually pays tends to widen as the chain lengthens. This section exam-

ines that process in the sample data, beginning with the channels identified in the study area and closing with the constraints growers associate with marketing their produce.

5. Marketing channels of arecanut

Three distinct marketing channels were found to be in use among the sample growers, differing in the number and type of intermediary standing between the producer and the consumer:

Channel I: Producer → Retailer → Consumer

Channel II: Producer → Wholesaler → Retailer → Consumer

Channel III: Producer → Pre-harvest Contractor → Wholesaler → Retailer → Consumer

Channel I represents the shortest route available to growers and involves only a single intermediary, the retailer, between the farmer and the consumer. Channel II introduces a wholesaler ahead of the retailer, while Channel III is the longest of the three, with growers selling the standing crop to a pre-harvest contractor who subsequently routes it through a wholesaler and a retailer before it reaches the consumer. The use of a pre-harvest contractor in Channel III is a distinct

tive feature of arecanut marketing: because the crop is a long-duration perennial with a fairly predictable yield, some growers, particularly those seeking to avoid the price risk and harvesting effort associated with a large standing crop, prefer to sell it in advance to a contractor rather than harvest and market it themselves.

Table 1. Channel-wise Quantity of Arecanut Sold (Unhusked, q/channel)

Sr. No.	Marketing Channel	Small	Medium	Large	Overall
1	Channel I (Producer–Retailer–Consumer)	51.72 (62.45)	46.97 (58.36)	39.60 (49.90)	46.10 (56.90)
2	Channel II (Producer–Wholesaler–Retailer–Consumer)	18.73 (22.62)	20.37 (25.31)	22.36 (28.18)	20.49 (25.37)
3	Channel III (Producer–Pre-harvest Contractor–Wholesaler–Retailer–Consumer)	12.37 (14.94)	13.14 (16.32)	17.39 (21.92)	14.30 (17.73)
	Total	82.8 (100)	80.5 (100)	79.4 (100)	80.9 (100)

(Figures in parentheses are percentages to the respective column total)

Channel I was clearly the dominant route for disposal of arecanut across all three farm-size groups, accounting for 62.45 per cent of the quantity sold by small growers, 58.36 per cent by medium growers and 49.90 per cent by large growers, with an overall share of 56.90 per cent. Channel II accounted for a further 25.37 per cent of the produce sold overall, while the longest route, Channel III, handled the remaining 17.73 per cent. A discernible pattern emerges across the farm-size groups: the share of produce moving through the shortest channel declines, while the shares moving through Channels II and III rise, as farm size increases. This is consistent with the more frequent

5.1 Channel-wise volume of arecanut marketed

Table 1 presents the quantity of arecanut sold through each of the three channels by the small, medium and large farm-size groups.

use of pre-harvest contractors by larger growers, who often have a bigger standing crop to dispose of and may prefer to transfer the price risk associated with it to a contractor rather than manage the harvest and sale themselves. Small growers, by contrast, more often sell smaller, more manageable quantities directly to a retailer, keeping their marketing chain short.

5.2. Channel-wise marketing cost

The per-quintal marketing cost incurred by the sample farmers in disposing of their produce through each of the three channels, together with its component heads, is presented in Table 2.

Table 2. Channel-wise Marketing Cost Incurred by Farmers

Particulars (₹/quintal)	Channel I	Channel II	Channel III
Grading charges	160.00 (45.19)	170.00 (42.92)	0.00 (0.00)
Packing material charges	80.00 (22.59)	83.35 (21.04)	0.00 (0.00)
Transportation charges	40.21 (11.35)	45.68 (11.53)	40.00 (40.00)
Loading and unloading charges	35.00 (9.88)	45.00 (11.36)	30.00 (30.00)
Weighing charges	30.00 (8.47)	40.00 (10.10)	30.00 (30.00)
Other charges	8.80 (2.49)	12.00 (3.03)	0.00 (0.00)
Total marketing cost	354.01 (100)	396.03 (100)	100.00 (100)
Gross price received by farmer	12000.00	11750.00	11500.00
Net price received by farmer	11645.99	11353.97	11400.00

(Figures in parentheses are percentages to the total marketing cost)

The total marketing cost incurred by farmers was highest in Channel II at ₹396.03 per quintal and lowest in Channel III at ₹100.00 per quintal, with Channel I falling in between at ₹354.01 per quintal. Grading charges formed the single largest component of cost in both Channel I and Channel II, accounting for 45.19 and 42.92 per cent of the respective totals, followed by packing material charges. In Channel III, by contrast, the cost was confined mainly to transportation, loading and unloading, and weighing, since the produce was purchased by the pre-harvest contractor before grading and packing were undertaken at the farmer's level, which explains why this channel shows the lowest recorded marketing cost to the farmer even though, as the price spread analysis below shows, it is the least remunerative of the three overall.

After accounting for these costs, the net price realised by the farmer worked out to ₹11,645.99 per quintal in Channel I, ₹11,353.97 in Channel II and ₹11,400.00 in Channel III. Channel I therefore yielded farmers the highest net price of the three channels, despite requiring them to bear a comparatively higher grading and packing cost themselves. This suggests that growers who are in a position to grade and pack their own produce, rather than sell it in a relatively unprocessed state further up a longer chain, stand to gain a better price for the additional effort involved.

5.3. Price spread, producer's share and marketing efficiency

Table 3 sets out the complete build-up of price from the farmer through each successive intermediary to the final consumer, along with the resulting price spread, producer's share and marketing efficiency for the three channels.

The price spread, the gap between what the consumer ultimately pays and what the farmer receives, was lowest in Channel I at ₹37,943 per quintal and rose sharply to ₹45,968 in Channel II and ₹50,991 in Channel III. This progressive widening tracks the number of intermediaries in each channel: Channel I involves only a retailer, Channel II adds a wholesaler, and Channel III adds both a pre-harvest contractor and a wholesaler ahead of the retailer. In Channel III, the pre-harvest contractor alone retained a margin of ₹12,685, equal to 20.30 per cent of the final consumer price, even before the produce passed through the wholesaler and retailer stages, which added further margins of ₹16,578 and ₹18,741 respectively. The retailer's margin was, in fact, the single largest component of price spread in all three channels, but it was compounded in Channel III by the additional margins taken earlier in the chain.

Correspondingly, producer share in the consumer price was highest in Channel I (24.0%), declining to 20.4% in Channel II and 18.4% in Channel III, with marketing efficiency following the same order at 31, 25 and 23 respectively. These findings confirm that longer mar-

keting channels with more intermediaries progressively reduce the farmer's share. Notably, Channel III despite being preferred by large growers for pre-harvest contracting proved the least remunerative and least efficient for producers. This aligns with Kumar, Malarkodi, and Uma (2022) [3], who reported similar results for black gram, wherein

shorter channels yielded narrower price spreads and higher efficiency. Overall, the evidence supports that marketing costs and intermediary involvement significantly influence efficiency, as both rose across Channels I to III while efficiency consistently declined.

Table 3. Price Spread in Marketing of Arecanut

Particulars (₹/quintal, unhusked)	Channel I	Channel II	Channel III
1. Farmer			
Gross price received	12000.00	11750.00	11500.00
(i) Marketing cost	354.00 (32.78)	396.00 (18.76)	100.00 (3.24)
(ii) Net price received	11646.00	11354.00	11400.00
2. Pre-harvest Contractor			
(i) Price paid	0.00	0.00	11500.00 (18.40)
(ii) Marketing cost	0.00	0.00	1254.00 (2.01)
(iii) Marketing margin	0.00	0.00	12685.00 (20.30)
(iv) Price received	0.00	0.00	25439.00
3. Wholesaler			
(i) Price paid	0.00	11750.00 (20.36)	25439.00 (40.71)
(ii) Marketing cost	0.00	956.00 (1.66)	986.00 (1.58)
(iii) Marketing margin	0.00	15985.00 (27.69)	16578.00 (26.53)
(iv) Price received	0.00	28691.00 (49.71)	43003.00 (68.81)
4. Retailer			
(i) Price paid	12000.00 (24.03)	28691.00 (49.71)	43003.00 (68.81)
(ii) Marketing cost	726.00 (1.45)	759.00 (1.32)	747.00 (1.20)
(iii) Marketing margin	37217.00 (74.52)	28268.00 (48.98)	18741.00 (29.99)
(iv) Price received	49943.00 (100.00)	57718.00 (100.00)	62491.00 (100.00)
5. Consumer — Price paid	49943.00 (100.00)	57718.00 (100.00)	62491.00 (100.00)
Price spread	37943.00	45968.00	50991.00
Total marketing cost + margin	38297.00	46364.00	51091.00
Producer's share in consumer's rupee (%)	24.03	20.36	18.40
Marketing efficiency	31.00	25.00	23.00

(Figures in parentheses are percentages to the price paid by the consumer)

6. Conclusions

This study examined the marketing of arecanut among small, medium and large growers in Shivamogga district of *Karnataka* and found that three channels, differing mainly in the number of intermediaries involved, account for the disposal of the crop in the study area. Channel I, the shortest route involving only a retailer, handled the largest share of produce and returned growers both the highest net price and the highest marketing efficiency, while Channel III, the longest route involving a pre-harvest contractor and a wholesaler ahead of the retailer, was consistently the least remunerative, with the widest price spread, the lowest producer's share and the lowest marketing efficiency of the three channels.

To maximize farm-level returns, policymakers should encourage larger growers to adopt shorter marketing channels through enhanced grading capacity, cooperative models, or direct sales. Strengthening price information systems similar to electronic trading platforms can improve sale timing and reduce price volatility. Additionally, investing in on-farm grading and replicating Kerala's successful cooperative marketing for arecanut could help Shivamogga's growers retain greater value by reducing intermediary dilution along extended supply chains.

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