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Economic analysis of marketing of banana in Solapur district of Maharashtra

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Abstract

In the present study marketing costs, price spread and marketing efficiency of banana production was estimated. Study were conducted in Solapur district of Maharashtra. Required information for the study were collected from the sample of 90 Banana growers in Malshiras and Madha tahsils of Solapur. Simple tabular analysis were employed for estimation of marketing costs, price spread and marketing efficiency. At the overall level, 557.35 q. quantity was sold in different markets, of which, 7.23 per cent quantity was sold through Channel I (Producer -Consumer), 73.55 per cent through Channel II (Producer-Pre-harvest contractor-Wholesaler-Retailer-Consumer) and 19.22 per cent through Channel III (Producer-Wholesaler-Retailer-Consumer). The cost of marketing of banana in Channel II was higher. The producer's share in consumer rupees was the highest in Channel I followed by, Channel III and Channel II. The marketing efficiency was found highest in Channel I than that of Channel II and Channel III.

Keywords: marketing, costs, price spread, efficiency, banana

Introduction

Banana is one of the oldest fruit known to mankind. Its antiquity can be traced back to the garden of paradise where 'Eve' was said to have used its leaves to cover her modesty, may be one of the reason why banana is called the "Apple of paradise". It is also known as "Adam Fig". Though originated in South East Asia, it is widely grown in India, China, Philippines, Brazil, Indonesia etc. Banana is an elongated, edible fruit – botanically a berry. The fruit is variable in size, colour and firmness, but it is elongated and curved, with soft flesh rich in starch covered with a rind, which may be green, yellow, red, purple, or brown when ripe. Banana plant is the largest herbaceous flowering plant. All the above-ground part of a banana plant grow from a structure usually called a "corm". Plants are normally tall and fairly sturdy, and are often mistaken for trees, but what appear to be a trunk is actually a "false stem or pseudo stem". The leaves of banana are composed of a "stalk" (petiole) and a blade (lamina). When a banana plant mature, the corm stops producing new leaves and begins to form a flower spike or inflorescence. Each pseudo stem normally produce a single inflorescence, also known as "banana heart". The banana fruit develop from the banana heart, in large hanging cluster, made up of tiers (called "hands"), with up to 20 fruit to a tier. The hanging cluster known as bunch, comprising 3-20 tiers or commercially as a "banana stem", and can weigh 30-50 kilograms. Individual banana fruits (commonly known as banana or "finger") average 125 grams, of which approximately 75% is water and 25% dry matter. The global production of banana is around 115.74 million tonnes of which India contributes 29.19 %. Besides India other major banana producing countries are China, Philippines, Ecuador, Brazil and Indonesia.(Source: Horticultural Statistics at a Glance 2018). Total area under banana in India was 8.84 lakh hectare. India was the largest producer with an annual production of banana was 308.08 lakh MT with productivity of 34.86 T/ha, in the year 2017-2018. The major production of banana crop was confined to Andhra Pradesh (50.03 lakh MT), Gujarat (44.72 lakh MT), Maharashtra (42.09 lakh MT) which account about 44.50 per cent of total production in India. Total estimated export of banana 1.01 lakh MT in quantity with value of Rs.34877.39 lakh in 2017-18 year. In Maharashtra during 2017-2018, total production of Banana was 42.09 lakh MT having 0.80 lakh hectares area with the productivity of 52.05 T/ha. Basrai, Robusta, Shreemanti, Grand naine, Dwarf Cavendish are the varieties cultivated in Maharashtra. (Source: Horticultural Statistics at a Glance 2018). Objective of the study is to estimate the marketing costs, price spread and marketing efficiency of banana production.

Methodology

Solapur district is one of the major district growing banana in Maharashtra. The total area under banana during 2018-2019 was 700 ha. Solapur district was selected purposively for the present study. The sampling design adopted for the investigation were two stage purposive sampling with sample Tahsil as a primary unit of sampling and village as a secondary unit of sampling. Secondly, two tahsil viz. Malshiras (65 ha) and Madha (50 ha) were selected purposively. The three villages from each tahsil were selected on basis of highest area under banana. The list of banana growers were prepared from each of these villages. Then growers from list were categorized into three size groups on the basis of area under banana for viz. Small (below 0.40 ha), Medium (0.41 to 0.80 ha) and Large (0.81ha and above). Fifteen banana growers were selected randomly from each village. Thus, total sample of 90 banana growers comprising of 30 small, 30 medium and 30 large growers were selected for present study. The data were collected by survey method by conducting personal interviews using specially designed questionnaire for the study purpose. The information pertaining to marketing of banana viz. marketing cost, price realized and marketing channel followed, was collected from banana growers and market functionaries present in the study area.

Analytical tools used for estimating total Marketing Cost

$$C = C_f + C_{m_1} + C_{m_2} + \dots + C_{m_n}$$

Where,

C = Total Marketing cost

C_f = Cost paid by the producer from the time the produce leaves the farm till he sells it.

C_{m_i} = Cost incurred by its middleman in the process of buying and selling the product-Acharya and Agrwal 1994. [2]

Price Spread

Price spread = Consumer's price - price received by farmer

$$P_s = C_p - P_f$$

Where,

P_s = Price Spread

C_p = consumer's price

P_f = price received by farmer

Market Margin

$$MT = \sum_{i=1}^n (S_i - P_i) / Q_i$$

Where,

MT = Total market margin

S_i = Sale value of a product paid by i^{th} firm.

P_i = Purchase value of a product paid by i^{th} firm.

Q_i = Quantity of product handled by i^{th} firm.

Marketing Efficiency (ME)

The marketing efficiency has been calculated by using the modified method as suggested by Shepherd's.

Shepherd's formula: $E = (O/I)$

Where,

E = Marketing efficiency

O = Price paid by consumer (Rs.)

I = 'Cost + margin' of market intermediaries (Rs.)

Results and Discussion

The total produce of Banana was disposed of as home consumption, gratis, losses due to wind, losses due to pests and diseases and the rest was marketed. The information regarding the disposal pattern of Banana is given in Table 1. It is revealed that, the per hectare total quantity of Banana produced were 574.36 quintals, 565.06 quintals and 549.91 quintals in small, medium and large size groups, respectively. Out of this total production, 0.14 per cent was used for home consumption by small groups, whereas 0.15 per cent and 0.15 per cent were used for home consumption for medium and large size groups, respectively. The per hectare losses due to wind were 0.49 per cent, 0.42 per cent and 0.38 per cent in small, medium and large groups. The per hectare quantity lost due to pests and diseases were 0.38 per cent, 0.33 per cent and 0.25 per cent of total produce for small, medium and large groups respectively. At overall level quantity used for gratis were worked out to 0.12 per cent of the total produce [1, 15, 16].

Marketing Channels in Banana Marketing

Marketing channels are the alternative routes of product-flows from producers to consumers. In the study area farmers used following three major channels for marketing of banana.

- Channel-I

Producer → Consumer

- Channel-II

Producer → Pre-harvest contractor → Wholesaler → Retailer → Consumer

- Channel- III

Producer → Wholesaler → Retailer → Consumer

Among the three marketing channels, the most commonly used channel for marketing of Banana in the study area was Channel-II as 73.55 per cent of the produce marketed through this channel. The detailed information on the quantity of produce sold through different channels by the Banana growers in different markets is presented in Table 2.

It can be seen that there are three different marketing channels for Banana. It was observed that at the overall level, marketing Channel-II (Producer – Pre-harvest contractor – Wholesaler -Retailer- Consumer) was the most preferred channel through which 73.55 per cent of the total produce was marketed followed by Channel-III (Producer – Wholesaler - Retailer- Consumer) and Channel I (Producer - Consumer) through which 19.22 and 7.23 per cent, respectively of the total produce was marketed. In small size group total quantity sold through Channel I was 12.64 per cent while it was 68.31 per cent through Channel II and 19.05 per cent through Channel III. In medium size group, 6.08, 71.55 and 22.37 per cent produce were marketed through Channel I, II and III respectively. In large size group, 2.98, 80.80 and 16.22 per cent produce marketed through Channel I, II and III, respectively [3, 4, 5, 11, 19].

Marketing costs, Price spread in Marketing Channels of Banana

The marketing cost is the sum total of all costs incurred in the movement of produce and includes costs such as loading, unloading, packing, transportation, market fee, commission etc. The costs incurred by producer seller and the intermediaries in handling Banana were worked out and

presented in following table. In Channel I, there was negligible marketing cost incurred and there was no market margin. At overall level, total marketing cost incurred by producer is Rs.81.41. This cost was especially due to the ripening, transportation and losses faced by producer while selling their produce. In Channel II, producer did not incur any expenditure towards marketing of Banana because pre-harvest contractor purchased the product from the producer from the production centers itself and thus saved marketing expenses, only the some amount of losses were faced by producer while selling their produce. Marketing of produce through Channel III happened same way as of Channel II. Price spread is the difference between price paid by consumer and price received by producer. This consists of marketing costs and margins of the different intermediaries [9, 12, 13, 17]. The costs and margins of agency in different channels were worked out and details are presented in Table 3.

It is observed from the Table 3 that, the net per quintal cost incurred were Rs.81.41, Rs.827.50 and Rs.611.00 in Channel I, II, and III, respectively. Per quintal cost was high in Channel II because so many intermediaries included in that channel and produce was marketed to distant markets.

In Channel II, marketing cost incurred by Wholesaler (Rs. 325.00) was more than any other intermediate. Also, marketing margin was observed high for Wholesaler (Rs.200.00). Net price received by producer in Channel I was

more than rest on Channels. It was happened because there were no intermediaries included in this channel. There is difference between net price received by producer in Channel II and Channel III was due to produce marketed through Channel III was received low price.

Marketing Efficiency of Banana

The Shepherd's method was followed for measuring the marketing efficiency of each channel. The results of marketing efficiency are given in Table 4. It is observed from Table 4 that, the marketing cost incurred in Channels I, II and III were Rs.81.41, Rs.467.50 and Rs.401.00, respectively. There was no margin incurred in Channel I, but it was up to Rs. 352.00 in Channel II and Rs.210.00 in Channel III. Price paid by consumer in Channel II was Rs.2077.50 followed by Channel II Rs.1891.00 and Channel I Rs.1749.88. The marketing efficiency was higher in Channel I (21.49) than that of Channel II (2.51) and Channel III (3.09). The higher marketing cost and margin in channel II and III resulted into poor efficiency of this channel [7, 8, 10, 14, 18]. Thus the analysis indicated that marketing of Banana directly by farmer without intervention to consumer was most effective and beneficial but it was done rarely as, farmers are unable to sell large quantities of banana due to perishability of produce, bulkiness of produce and high transportation cost.

Table 1: Production and disposal pattern of banana (Q./ha)

Sr. No.	Particulars	Size Groups			Overall
		Small	Medium	Large	
1	Total Production	574.36 (100.00)	565.06 (100.00)	549.91 (100.00)	563.11 (100.00)
2	Home consumption	0.80 (0.14)	0.87 (0.15)	0.89 (0.15)	0.85 (0.15)
3	Gratis	0.65 (0.11)	0.67 (0.12)	0.68 (0.13)	0.67 (0.12)
4	Losses due to wind	2.86 (0.49)	2.33 (0.42)	2.11 (0.38)	2.31 (0.43)
5	Losses due to pest and diseases	2.96 (0.38)	1.91 (0.33)	1.33 (0.25)	1.81 (0.32)
6	Marketable quantity	567.86 (98.88)	559.28 (98.98)	544.90 (99.09)	557.35 (98.98)

Table 2: Channel wise quantity of Banana marketed (Q./ha.)

Sr. No.	Channel	Size Groups			Overall
		Small	Medium	Large	
1	I	71.76 (12.64)	33.96 (6.08)	16.23 (2.98)	40.65 (7.23)
2	II	387.89 (68.31)	400.19 (71.55)	440.29 (80.80)	409.46 (73.55)
3	III	108.21 (19.05)	125.13 (22.37)	88.38 (16.22)	107.24 (19.22)
	Total	567.86 (100.00)	559.28 (100.00)	544.90 (100.00)	557.35 (100.00)

Table 3: Marketing Costs and Price spread in Marketing Channels of Banana

Sr. No.	Particulars	Channel I	Channel II	Channel III
1	Gross price received by the farmer	1749.88 (100.00)	1250 (60.17)	1280 (67.69)
	i) Marketing cost	81.41 (4.65)	0.00 (0.00)	0.00 (0.00)
	ii) Net price realized	1668.47 (95.35)	1250.00 (60.17)	1280 (67.69)
2	Pre-harvest contractor			
	i) Price paid	-	1250.00	-

			(60.17)	
	ii) Marketing cost	-	50.50	-
		-	(2.43)	-
	iii) Marketing margin	-	60.00	-
			(2.88)	
	iv) Price received	-	1360.50	-
			(65.49)	
3	Wholesaler	-		-
	i) Price paid	-	1360.50	1280.00
			(65.49)	(67.69)
	ii) Marketing cost	-	325.00	310.00
		-	(15.64)	(16.39)
	iii) Marketing margin	-	200.00	150
			(9.62)	(7.93)
	iv) Price received	-	1885.50	1740.00
		-	(90.76)	(92.01)
4	Retailer	-		
	i) Price paid	-	1885.50	1740.00
			(90.76)	(92.01)
	ii) Marketing cost	-	92.00	91.00
			(4.43)	(4.81)
	iii) Marketing margin	-	100.00	60.00
			(4.81)	(3.18)
	iv) Price received	-	2077.50	1891.00
			(100.00)	(100.00)
5	Consumer			
	Price paid	1749.88	2077.50	1891.00
		(100.00)	(100.00)	(100.00)
	Price spread	81.41	827.50	611.00
(Figures in parentheses indicates percentage to the total price paid by consumer)				

Table 4: Marketing Efficiency of Identified Channels of Banana (Rupees)

Sr. No.	Particulars	Channel I	Channel II	Channel III
1	Net price Received by the farmer	1668.47	1250.00	1280.00
2	Total marketing cost	81.41	467.5	401.00
3	Total marketing margin	0.00	352.00	210.00
	MM+MC	81.41	827.50	611.00
4	Price paid by consumer	1749.88	2077.50	1891.00
5	Marketing efficiency ratio	21.49	2.51	3.09

Conclusions

From the above study it is concluded that the per hectare total production of banana at overall level was 563.11 qtl. Total marketable quantity was 557.35 qtl. i.e. 98.98 per cent, same trend observed among other size groups. At overall level, out of total marketable surplus, 7.23 per cent produce marketed through Channel I, 73.55 per cent through Channel II and 19.22 per cent through Channel III. Total marketing cost and market margin in Channel II was Rs.827.50 and Rs.611.00. Price paid by consumer was Rs. 1749.88, Rs. 2077.50 and Rs.1891.00 in Channel I, II and III, respectively. Price spread was Rs.81.41 in Channel I, Rs.827.50 in Channel II and Rs.611.00 in Channel III. The producer's share in consumer's rupee was highest in Channel I followed by Channel III and Channel II. The marketing efficiency was much higher in channel I than that of channel II and Channel III.

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