

An Analysis of Mango Value Chain in Kolar District of Karnataka

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ABSTRACT

The present study mango value chain analysis offers an opportunity to expand financing for horticultural production, improve efficiency and repayments of loans, and strengthen or consolidate linkages among participants in value chains. Each chain of activities gives the product more added value than the sum of added values of all activities put together. Since there is scope for value addition and demand for value added products of mango, the Government may take up initiatives for strengthening of the mango value chain by establishing processing units in the production belts as well as provide the required institutional framework for domestic and export promotion of value-added products of mango.

Key words: Mango, Value addition, Value chain analysis

Fruits are important in the daily diet as they contain micronutrients, including vitamins, minerals, fibres, and other bioactive components. It contains high quality of β carotene (Vitamin A) and vitamin C [1]. Mango (*Mangifera indica*) is one of the most popular tropical fruits grown commercially in 87 nations of the globe [2]. Due to the favourable climatic condition India abounds with a large variety of tropical and sub-tropical fruits. However, mango is the most popular and important fruits in India. The fruit is also known as the "king of fruits" because of its delicious taste, captivating flavour with highly nutritious values [3].

Value chain analysis is a method for accounting and presenting the value that is created in a product or service as it is transformed from raw inputs to a final product consumed by end consumers. A value chain is a network of facilities and distribution options [4]. The chain of exercises gives the product more included value than the total of included values of all activities. Any product without any value addition when sold in market in the raw form will bring generally low cost. The value chain analysis of mango in Srinivaspura taluk Kolar district is briefly explained in the following sections. The specific objectives are: 1). To assess the crossing functions with participants to identify the actors in mango value chain; 2). To identify the different marketing channels used by farmers in the study area for mango; 3). To assess the value addition cost in mango value chain.

MATERIALS AND METHODS

The present study was conducted in Srinivaspura taluk Kolar District of Karnataka with the major objective of

analyzing the mango value chain. The study used both primary and secondary data. The primary data were collected during October and November 2019. The primary data for the study was collected from 80 respondents which included farmers (50), traders (10), wholesalers (10), and retailers (10) in the Srinivaspura taluk. The secondary data were collected from official documents of the National Horticultural Board, Karnataka State Department of Horticultural, APEDA and KAPPEC. The Value chain mapping of Mango in the study area and mango Value chain crossing functions with participants to identify the actors' activity was calculated and added in mango value chain.

Functions carried out by participants involved in mango value chain

The crossing functions performed by the stakeholders in the mango sub-sector are depicted in (Table 1). From the table it could be easily revealed that, the actors or participants involved in the mango sub-sector were nurseries, input supply companies, farmers, pre-harvest contractors, traders, processors, wholesalers and retailers.

The function such as input supply was carried out by the nurseries by supplying good quality mango seedlings and input supply companies with supply of fertilizers, chemicals, machineries etc. As far as the production aspect of mango was concerned, it was performed by the farmers. The pre-harvest contractors and traders were involved in assembling of the produce followed by the processors who were actively involved in processing activity bringing value addition to the commodity. The processors convert the raw product into value added products such as pulp, jams, jellies, juice, pickle and other canned products. The wholesaling and retailing activities were carried out by the wholesalers and retailers respectively. The retailers are the fruit stall owners, roadside vendors and supermarkets from where the consumers buy the products. They may sell the produce as such or after value addition and processing. However, the large traders and wholesalers were also involved in the export of the produce and are involved in

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international trade. They supply high quality fruits to other countries by taking into account their quality implications.

The value chain map is a diagrammatic representation of different value chain actors operating in the mango sub-

sector and flow of the produce in the chain as shown in (Fig 1) the top head lists major function of the chain. The map is basically structured based on the data collection from value chain stakeholders at the time of interview.

Table 1 Generic worksheet crossing functions with participants to identify the actors in mango value chain

Functions	Participants/Actors							
	Nurseries	Input supply company	Farmers	Pre-harvest contractors	Traders	Processors	Wholesalers	Retailers
Input supply								
Production								
Assembling								
Processing								
Wholesaling								
Retailing								
Export								

RESULTS AND DISCUSSION

Marketing channels used by the farmers for mango

The channels used by the farmers in marketing of mango in the study area are depicted in (Table 2). The results from the table revealed that, the farmers used about 6 channels in marketing of mango in the study area. In the channel-I, the farmer sold the produce to the trader which was intern sold to the consumer locally [5]. In Channel-II, the producer sold the produce to the pre-harvest contractor which was subsequently sold to retailer and then to the consumer. In Channel-III, the

producer sold the produce to the commission agent which was traded later with retailer and later on to the consumer. In Channel-IV, the producer sold the mango to the trader which was later sold in the up-country market or distant market by the trader. In Channel-V, the producer had a contract with the pre-harvest contractor and then it was sold to commission agent and further to retailer and was lastly sold to the consumer. In Channel-VI, the producer sold the produce to the commission agent who sold it to secondary wholesaler and then to retailer which is sold later on to the consumer in the up-country market [6].

Table 2 Different marketing channels used by farmers in the study area for mango

Channel -I	Channel -II	Channel -III	Channel -IV	Channel -V	Channel -VI
Producer	Producer	Producer	Producer	Producer	Producer
-	Pre-harvest contractor	Commission agent	-	Pre-harvest contractor	Commission agent
Trader	-	-	Trader	Commission agent	Secondary wholesaler
-	Retailer	Retailer	up country market	Retailer	Retailer
Consumer (local sale)	Consumer	Consumer	-	Consumer	Consumer
					(Up Country market or distant market)

Value chain analysis of fresh mango

The value chain analysis of fresh mango at farmers, traders, wholesalers and retailers level is illustrated in (Table 3) in following sub-heads.

a). Value addition at farmers level

As far as the production cost was concerned, the total expenses incurred by the farmer accounted for Rs. 18.20 per kg of fresh mango in the value chain. The items of production cost were land rent (Rs. 2.10/kg), establishment cost and land preparation (Rs. 2.80/kg each), manures and fertilizers and plant protection (Rs. 4.20/kg each) and expenses made during harvesting period (Rs. 2.10/kg) of the produce. The items of post-production cost include total farm level costs (Rs. 18.20/kg) followed by losses in form of damage to the fruits (Rs. 1.40/kg) and margin availed through sale of fresh mango accounted for Rs. 8.40/kg. The producer's price at farmer level was Rs. 28.00 per kg of fresh mango [7].

b). Value addition at traders level

At the trader's level, some costs are added to the produce in the value chain subsequently increasing the value of the produce. The trader purchased the fresh mangoes from the farmer at Rs. 28.00 per kg to add value addition costs such as assembling and grading (Rs. 1.05/kg) and transportation

cost including loading, unloading and miscellaneous expenses (Rs. 1.75/kg). The total assembling costs for the trader accounted for Rs. 30.80 per kg of fresh mango. At this level, the trader also incurred loss due to damage of fruits which accounted for Rs. 1.40 per kg and the margin availed by the trader was Rs. 9.80 per kg of the mango. The traders' price was Rs. 42.20 per kg of fresh mango [8].

c). Value addition at wholesalers level

The purchasing price of wholesaler from the trader was Rs. 42.20 per kg of fresh mango at this level. The wholesaler also added some cost such as expenses made on storage and miscellaneous costs, ripening and transportation which accounted for Rs. 0.35, Rs. 1.05 and Rs. 0.35 per kg of the produce. The total costs added at the wholesaler's level accounted for Rs. 43.75 per kg of fresh mango. At this level, losses in the form of damage to fruits occurred which accounted for Rs. 1.75 per kg of the produce. The margin availed by the wholesaler accounted for Rs. 6.30 per kg. The wholesaler's price was Rs. 51.80 per kg of fresh mango [9-10].

d). Value addition at Retailers level

The retailers purchase price was Rs. 51.80 per kg from the wholesaler at this level. At this level, the costs such as

space rent & miscellaneous expenses, and ripening costs were added which accounted for Rs. 1.40 and Rs. 0.70 per kg of fresh mango purchased. The total retail level costs for the retailer accounted for Rs. 53.90 per kg of the produce. At this level, loss in the form of damage to the fruits occurred which

accounted for Rs. 2.10 per kg. The margin received by the retailer accounted for Rs. 4.20 per kg. The retailer's price was Rs. 60.20 per kg of fresh mango which was ultimately transferred to the consumer. The results obtained were on par with the study conducted by [11-12].

Table 3 Value chain analysis of fresh mango

Category	Particulars	Amount (in Rs.)
I.	Farmers (n=50)	
	1. Production cost	
	a) Land rent	02.10
	b) Establishment cost	02.80
	c) Land preparation	02.80
	d) Manures & fertilizers	04.20
	e) Plant protection	04.20
	f) Harvesting	02.10
	Total production costs	18.20
	2. Post-production cost	
	a) Total farm level costs	18.20
	b) Losses (due to damage of fruits)	01.40
	c) Margin	08.40
	Producer's price (a to c)	28.00
II.	Traders (n=10)	
	a) Assembling and Grading	01.05
	b) Transportation cost including loading / unloading & other miscellaneous costs	01.75
	c) Purchasing price	28.00
	d) Total assembling costs (a to c)	30.80
	e) Losses (due to damage of fruits)	01.40
	f) Margin	09.80
	Trader's price (d to f)	42.20
III.	Wholesalers (n=10)	
	a) Storage and other miscellaneous costs	00.35
	b) Ripening	01.05
	c) Transportation	00.35
	d) Purchase price	42.20
	e) Total Wholesale Level Costs (a to d)	43.75
	f) Losses (damage of fruits)	01.75
	g) Margin	06.30
	Wholesaler's price (e to g)	51.80
IV.	Retailers (n=10)	
	a) Space rent and other miscellaneous costs	01.40
	b) Ripening	00.70
	c) Purchase price	51.80
	d) Total Retail Level Costs (a to c)	53.90
	e) Losses (due to damage of fruits)	02.10
	f) Margin	04.20
	Retailer's price (d to f)	60.20

CONCLUSIONS

To summarize the above discussion for the mango, as it is universally known that, mango is known as "King of fruits" and India ranks first among world mango producing countries accounting for about 50% of the world's mango production. In the present study, the actors or participants involved in the mango sub-sector were nurseries, input supply companies, farmers, pre-harvest contractors, traders, processors, wholesalers and retailers. Mangoes are perishable goods that losses it's freshness within a short time. Due to this value addition comes in so as to promote the fruit's taste, flavor and also to enhance its shelf life. Mango is perishable in nature and due unavailability of storage and transportation facilities, considerable amount of the produce is wasted every year. One of the methods to avoid such losses of mango fruits is to process the mango into different products. Some of the value-

added products of fresh mango are pickles, amchoor powder, chutney, beverages and relish and that of ripe mango are pulp, juice, nectar, squash, jam, jelly and ice-cream. There is a great demand for Indian mangoes and also the processed mango products, especially the mango pulp, pickles, chutneys, juices, jams, slices in brine, etc., in the international markets. However, the mango cultivators of India are facing grave challenges in production and marketing of the crop. Sizeable number of mango growers are resorting to on farm sales and the specific reasons for not opting APMC (Agricultural Produce Market Committee) sales are lack of proper transportation facilities, high marketing costs which includes transportation, loading, unloading, commission charges and weighment charges, low price for the produce, lack of infrastructure facilities, lack of transparency in price determination, faulty system of weighment and delayed cash payment. Hence, the extension personnel from Department of

Agricultural marketing can address to these issues. The findings of the study indicated that, the mango traded in Srinivaspura taluk of Kolar district is moving in the direction of central and North Indian consumer market and processing units of Andhra Pradesh, Tamil Nadu and Karnataka. Hardly four per cent of farmers are selling mango in upcountry

market. The Government can facilitate links to the mango growers from Srinivaspura taluk to the processors and upcountry markets. However, suitable infrastructural facilities and platform may be created by the State government to address the production and marketing problems of mango growers.

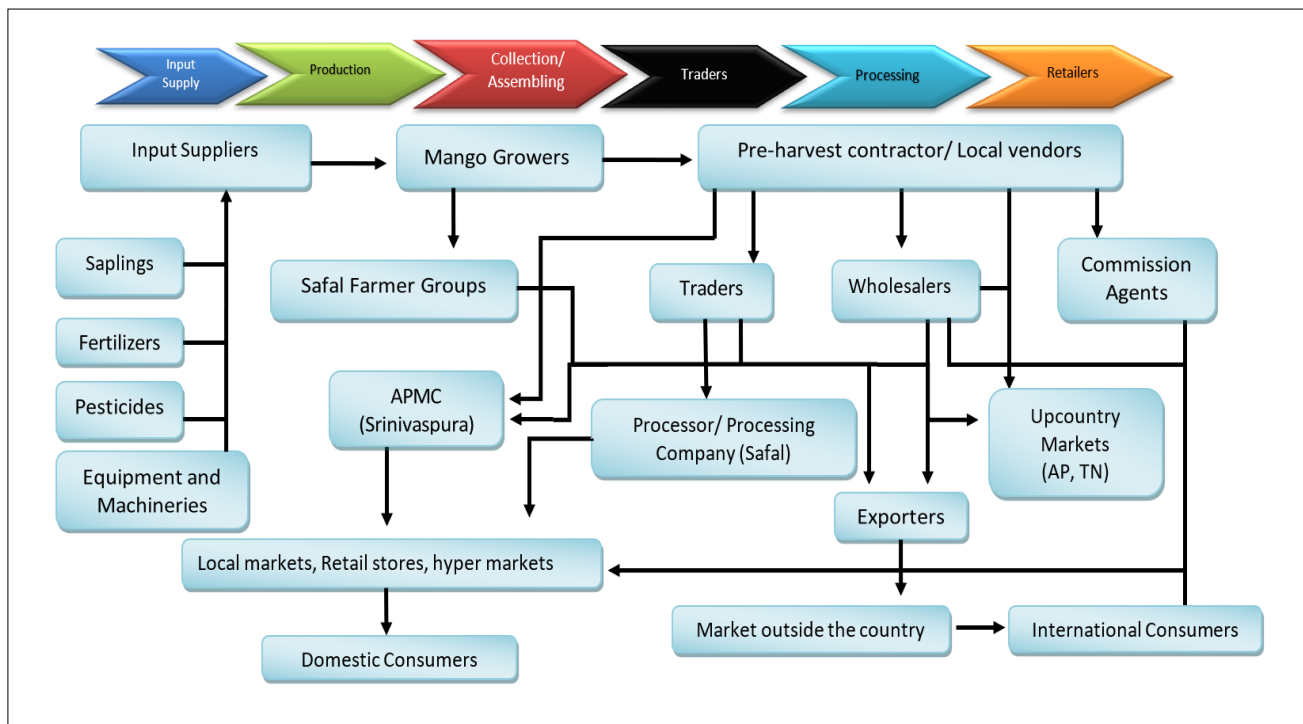


Fig 1 Value chain mapping of mango in the study area

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