



# MARKETING DIMENSIONS OF PAPAYA CROP: AN ECONOMIC ANALYSIS

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## Abstract:

*A group of people, specializing in food production, are identified as farmers, shoulder the noble responsibility of feeding the entire world. A crop is a useful plant and is utilized by people, directly or indirectly, raw or processed. These plants are intentionally grown or managed for various uses. The main aim of this study was review the status of marketing of papaya crop in Karnataka. Primary data has been collected through questionnaire and personal interview method. Secondary information has been collected from Agricultural Product Marketing Committee (APMC) of Raichur taluka. In the study area, Raichur, 384 hectares of land is used for cultivating Papaya crop, the output of 8,293 tonnes with a total market value of 498 lakhs, was produced for the year 2019-20. From the ten sample villages chosen for study 04 Small farmers, 13 Medium and 15 Large farmers were into cultivation of Papaya crop. This added together makes only 11% of the total respondent sample size.*

**Keywords:** Agriculture, Civilization, Economic prosperity, Foods crops, Fruits, Horticulture.

## 1. Introduction:

India produces nearly 11% of all the world's vegetables and 15% of all fruits, yet its share in global exports of vegetables is only 1.7% and in fruits a meager 0.5%. In comparison to India, China is currently the world's largest fruit and vegetable producer with a production share of 34%. Despite strong domestic demand, China is among the four top developing country exporting fresh vegetables. In India, the per capita daily consumption of fruits is 46 grams as against 92 grams and vegetables is 130 grams as against 300 grams recommended by Indian Council of Medical Research and National Institute of Nutrition, Hyderabad. Transition from supply driven economy to demand driven economy has resulted in drastic changes in the consumption pattern of the population.

## 2. Introduction to Papaya Crop:

The original home of papaya is Tropical America and belongs genus *Carica* of the family 'Caricaceae' and cultivated all over the world. The Dutch Traveller by name Linschoten in 1598 described that Papaya fruit was brought from the Philippines to Malaya and hence to India. Papaya cultivation is carried throughout the year and gives quick return apart from adopting quickly to diverse soil and climatic condition. In the recent past, the crop has been graduated from mere garden crop to commercial crop. Papaya is used primarily in two ways (i) table use (ii) Making preservatives. Unripe Papaya fruit is used as vegetable and filler material for various purposes. Fruit is a rich source of vitamin A and C. It has a high nutritive and medicinal value. The Papaya leaves has medicinal qualities and considered to bring quick relief from fever. The stem and bark of Papaya plant is used for making ropes. The roots are used for curing piles and act as generative toxin. Recently oil is being extracted from it, which is a rich source of protein and used in medicine to quench thirst and act as 'Vermin Fuse'. Due to all these attributes Papaya is known as "Common man's Fruit".

## 3. Review of Literature;

- a) Anil Kumar and Arora, (1999) conducted study on post-Harvest management of vegetable in Uttar Pradesh hills (now Uttarakhand hills) indicated that non availability of cold storages, highly perishable nature of the vegetables, low marketing demand for the produce at the time of storage are the major problems as perceived by farmers.
- b) Charles R. Hall (2009) reported that marketing is one of the most important factors determining the success of any fruits and vegetables farming enterprises. The direct farmer-to-consumer marketing includes any methods by which the farmers sell their products directly to consumers. Farmers sell their products directly to consumers by several means, such as - pick your own operations (mainly in the West), road stands and market, markets located in or near an urban area, house-to-house delivery, sales from trucks and other parking area and similar places with potential consumer traffic.
- c) Deepak Shah and Narayan Murthy (2015), studied marketing pattern of horticultural crops in Maharashtra. The grape orchardists marketed their produce either through forwarding agents in whole sale markets or through commission agents or directly to the Wholesaler. The per box (4Kg) total marketing cost was estimated to be the highest when the produce was sold through forwarding agents in the whole sale markets compared to the produce sold through other marketing channels.

## 4. Objectives of the study:

- 1) To review the status of marketing of papaya crop in Karnataka.
- 2) To analyze the prevailing distribution channels of Papaya Crop in the study area.
- 3) To examine the marketing limitation existing in Papaya crops.
- 4) To suggest various measure to overcome the limitations prevailing in marketing of Papaya crops.

## 5. Research Method:

Primary data has been collected through questionnaire and personal interview method. Secondary information has been collected from Agricultural Product Marketing Committee (APMC) of Raichur taluka. The data maintained by APMC, Department of Agriculture and Horticulture has been extensively used to substantiate the facts.

## 6. Sampling Method and Sampling Size:

Purposive sampling method is adopted 10 villages from Raichur taluk have been selected based on irrigational intensity. 30 farmers from each village have been interviewed. Out of 30 respondent farmers who have been interviewed, some were Marginal farmers (who hold less than 1 hectare), some were Small farmers (who hold more than 1 but less than 2 hectares), Medium farmers (holding more than 2 but less than 10 hectares), few were Large farmers (holding more than 10 hectares).

## 7. Limitations of the study:

1. The study is confined only to ten villages of Raichur District. The inferences drawn from the research study may not be generalized.
2. The sample size is limited to only 300 respondents, despite there were numerous households, involved in Horticultural cultivation.
3. The collected insights and findings drawn may not be suitable to other districts.

## 8. Marketing of Papaya Crop:

There are three types of costs that play a significant role in Papaya cultivation which are: (a) Labour costs (b) Material cost (c) Fixed cost. Various costs involved in the cultivation of the crop papaya are merged into two costs viz., the Variable Cost and the Fixed Cost.

**Table - 1**  
**Cost of Cultivation of Papaya (First One year - Per Acre)**

Sl. No.	Cost Particulars	Small	Medium	Large
a.	Labour cost	5,120	6,340	8,195
b.	Material cost	15,170	19,370	26,469
	➤ Cost on farm yard manure	7,020	8,450	10,558
	➤ Cost on Fertilizers	3,870	4,875	6,731
	➤ Cost on PPCs	1,980	2,795	4,882
	➤ Cost on seeds	2,300	3,250	4,298
c.	Total Variable Cost (A+B)	20,290	25,710	34,664
d.	Fixed costs (including rental value of land, land revenues, depreciation and the interest	4,770	5,650	6,544
e.	<b>Total (C+D)</b>	<b>25,060</b>	<b>31,360</b>	<b>41,208</b>

Source: Primary Data

Since papaya plant lasts for three years and therefore the maintenance cost for 27 months has been worked, which is again divided into two parts. The part-I is the Variable Cost and the Part-II is the fixed cost. The rental value on land is more in case of the maintenance category as the rental value for the developed garden is more and therefore the fixed cost is more than the variable cost.

**Table -3**

**Cost of maintenance of the Papaya during the Fruit Bearing Period Per Acre).**

Sl. No.	Cost Particulars	Small	Medium	Large
a.	Labour cost	6,500	8,500	9,745
b.	Material cost	3,275	5,100	6,385
	Cost on FYM	325	450	915
	Cost on Fertilizers	1,750	1,900	2,200
	Cost on PPCs	1,200	2,750	3,270
c.	Total Variable Cost (A+B)	9,775	13,600	16,130
d.	Fixed costs (including rental value of and, land revenues, depreciation and the interest	14,950	19,470	23,818
e.	<b>Total (C+D)</b>	<b>25,725</b>	<b>33,070</b>	<b>39,948</b>

**Source: Primary Data**

As it is evident from the above table, the cost of maintenance increases with the size of farm holding, indicating positive correlation between two. Papaya plant is a three years crop and therefore the maintenance cost for 27 months has been worked. On an average, small farmers incurs Rs. 950 on maintenance, whereas medium and large farmers incur Rs. 1,225 and Rs. 1,480 per month on maintenance.

**9. Marketing channels of Papaya Crop:**

Two types of marketing channel were observed in the study area in marketing of Papaya crop. They are:

Channel – 1:

- Farmer - Pre-harvest contractor- Commission agent cum Wholesaler

Channel – 2:

- Farmer - Wholesaler at APMC-Retailer - Consumer

The whole marketing process of papaya in the study area involved packing, transportation and selling functions. Better packing always helped in maintaining the quality and reducing the loss during the transit on account of spoilage. Packing of papaya is generally done in papers. They are generally transported by trucks where the bottom is filled with fodder to prevent spoilage. Most of the papaya is sold at the farm level to the commission agent cum wholesalers. Sometimes the papaya is also sent to distant markets like Pune and Mumbai by trucks. The commission agent in these markets charges the commission of 10 per cent.

Out of total marketing cost of Rs. 5,520 labour cost constitutes the highest with 44%, Transportation expenses is the second largest in the list constituting 27.17% and Loading and

unloading charges constitutes 13.50%. In channel number 1, pre harvest contractor enters into mutual contract with the farmer and bears the harvesting cost, loading and unloading cost too. The pre harvest contractor later brings it to the nearby market and sells it to commission agents or wholesalers, who inturn sells it to retailers and retailers, finally sells it to consumers. Out of total respondents cultivating Papaya crop, 56% of respondents were selling their produce through channel number 1.

**Table-4**

**Marketing cost incurred by market intermediaries in Channel 1 (Rs/tonne)**

Sl. No.	Particulars	Amount
1.	Packing	300
2.	Loading and Unloading	750
3.	Transportation	1,500
4.	Weighing	120
5.	Commission charges	300
6.	Labour payment	2,400
7.	Miscellaneous	150
	<b>TOTAL</b>	<b>5,520</b>

**Source: Primary Data**

**10. Marketing cost incurred by market intermediaries in Channel 2 (Rs/Tonne)**

In this marketing channel, the harvesting, loading and unloading costs are borne by the farmer himself and he only brings the produce to APMC market. This channel is generally adopted by those farmers who stay within the radius of 25 to 30 km of Davanagere city. As per the guidelines of APMC, first grading of Papaya crop will take place, based on the quality of the lot, price will be fixed through auctioning. The highest bidder gets the deal and he purchases the entire lot, who inturn supplies it to retailers in smaller quantities. These retailers in turn sell it to final consumers. Though this marketing channel involves less number of market intermediaries, it was observed in the field survey that only 44% of the farmers were adopting this route. Incidentally, most of them were large farmers. This depicts the grim financial problems prevailing in the villages, which is accessibility of necessary finance facility. Therefore, some contractors, who are professional traders, identify such needy farmers and fund them, compelling them to enter into pre-harvest contracts, which are known as forward contract.

Details of the Marketing cost incurred by the market intermediaries in channel 2 are as follows:

Table-5

(Rupees/tonne)

Sl. No.	Particulars	Wholesaler	Percentage	Retailer	Percentage
1.	Transportation cost	00	00	700	34.56
2.	Packing cost	00	00	225	11.11
3	Loading and	00	00	800	39.50
4.	Tax	150	2.48	50	2.47
5.	Rent	5,000	82.64	00	00
6.	License fee	300	4.95	00	00
7.	Miscellaneous cost	500	8.26	200	9.9
8.	Weighing	100	1.65	50	2.47
	<b>TOTAL COST</b>	<b>6,050</b>	<b>100.00</b>	<b>2,025</b>	<b>100.00</b>

Source: Primary Data

As indicated above, in channel 2, wholesaler need not to incur any harvesting, loading and unloading, transportation, packing cost and it is completely borne by the farmer himself. However, the highest expenses incurred by the wholesaler were on rent payable for a shop, which he owns in APMC market. It constitutes 83% of the total expenses followed by License fee, miscellaneous etc., as far as retailer is considered the highest expenditure is incurred on Loading and unloading followed by transportation. Other expenses are negligible.

Table - 6

**Year wise Yield or output from the cultivation of the crop papaya (per Acre)**

Sl. No.	Year	Net Return
1	1 <sup>st</sup> Year	9.96 tonne
2	2 <sup>nd</sup> Year	36.13 tonne
3	3 <sup>rd</sup> Year	27.85 tonne

Source: Primary Data

The table reveals that in the 1st year the yield is around 9,96 tonnes, which has gone up to 36.13 tonnes during second year and in the third year it was 27.85 tonnes. This reveals that in the first year the yield was low and in the second it was highest and there is a small decline in the third year. There is no major difference between the price for the papaya for all the three years. The total gross returns for all the three years is about Rs. 2,95,376 and the gross returns per year is Rs. 98,459.

Table - 7

## Returns from the Papaya Cultivation per year (Yield in tonnes)

Sl. No.	Particulars	Yield in tonnes	Market Price Per tonne	Returns (in Rs.)
1	Yield in the 1 <sup>st</sup> year	9.96	4,068	40,517
2	Yield in the 2 <sup>nd</sup> Year	36.13	3,993	144,267
3	Yield in the 3 <sup>rd</sup> Year	27.85	3,971	1,10,592
4	Total for all the years	73.64	4,010 (average)	2,95,376

Source: Primary Data

Since the returns are very much high from the Papaya crop and moreover it is a continuous income for three years, it is advisable to choose the cultivation of Papaya crop. In addition to these the farmers can get Rs 1.591 per rupee investment and will also get the income every week during the cultivation period and hence the crop is advised for all the farmers.

Table - 8

## Net return from Papaya Crop (value in rupees)

Sl.No.	For 1st year	Small	Medium	Large
1	Variable cost	20,290	25,710	34,664
2	Fixed cost	4,770	5,650	6,544
3	Total cost	25,060	31,360	41,208
4	Net return (Gross return - cost)	15,457	9,157	-691
Sl.No.	For 2nd year	Small	Medium	Large
1	Variable cost	9,775	13,600	16,130
2	Fixed cost	14,950	19,470	23,818
3	Total cost	25,725	33,070	39,948
4	Net return (Gross return-cost)	1,18,542	1,11,197	1,04,319
Sl.No.	For 3rd year	Small	Medium	Large
1	Variable cost	9,775	13,600	16,130
2	Fixed cost	14,950	19,470	23,818
3	Total cost	25,725	33,070	39,948
4	Net return (Gross return - cost)	84,867	77,522	70,644

As it is evident from the table the initial investment is more therefore, the net return from Papaya crop is Rs. 15,457 for small farmers, Rs. 9157 for Medium farmers. Apparently the collected data reveals that large farmers are incurring loss in the first year due to high initial investment needed for preparing land and planting the saplings. As discussed earlier, during the second and third year, the net return from Papaya crop considerably increases. The details of which is shown in the above table. Hence it is advisable that all farmers, irrespective of their land holdings, should opt for cultivating Papaya crop despite its initial cost. In subsequent years, the growers will surely enjoy good returns.

## 11. Findings:

1. In the study area, Raichur, 384 hectares of land is used for cultivating Papaya crop, the output of 8,293 tonnes with a total market value of 498 lakhs, was produced for the year 2019-20
2. From the ten sample villages chosen for study 04 Small farmers, 13 Medium and 15 Large farmers were into cultivation of Papaya crop. This added together makes only 11% of the total respondent sample size.
3. Two types of marketing channel were observed in the study area in marketing of Papaya crop. They are: Channel-1: Farmer -- Pre-harvest contractor--Commission agent cum Wholesaler--Retailer--Consumer. Channel-2: Farmer-Wholesaler at APMC-Retailer-Consumer.
4. The whole marketing process of papaya in the study area involved packing, transportation and selling functions. Better packing always helped in maintaining the quality and reducing the loss during the transit on account of spoilage. Packing of papaya is generally done in papers. They are generally transported by trucks where the bottom is filled with fodder to prevent spoilage. Most of the papaya is sold at the farm level to the commission agent cum wholesalers.
5. Out of total marketing cost of Rs. 5,520 labour cost constitutes the highest with 44%, Transportation expenses is the second largest in the list constituting 27.17% and Loading and unloading charges constitutes 13.50%.
6. In the 1st year the Papaya yield is around 9.96 tonnes, which has gone up to 36.13 tonnes during second year and in the third year it was 27.85 tonnes. This reveals that in the first year the yield was low and in the second it was highest and there is a small decline in the third year. There is no major difference between the price for the papaya for all the three years. The total gross returns for all the three years is Rs. 2,95,376 and the gross returns per year is Rs. 98,459.
7. The initial investment is more there fore, the net return from Papaya crop is Rs. 15,457 for small farmers, Rs. 9157 for Medium farmers. Apparently the collected data reveals that large farmers are incurring loss in the first year due to high initial investment needed for preparing land and planting the saplings.

## 12. Suggestions:

- The marginal and small farmers have been disposing of their produce in the village itself as most of them produce less surplus and most of them have borrowed resources from the middlemen, rural elite and such other businessmen with the condition that they will market their produce only to these lenders. Therefore, the price for their produce is lower compared to the medium and large farmers. To avoid this, the crop loans at the time of requirement have to be sanctioned for these categories of the farmers.

- It was observed that, in the study area, contract farming has contributed in solving prevailing production and marketing problems i.e., technical guidance, market information and avoid cheating of farmers by middlemen. Hence, the processing industry may be encouraged to come forward for contract farming.
- Existence of Long chain of middlemen, has resulted in lower price spread for the farmers. Therefore, the authorized departments must take proper care and measures to ensure, lowered chain of middlemen or direct contact between Farmers and Ultimate consumers. HOPCOMS in the state is a good initiative in this direction. More and more institutions must be established and regulated.
- One of the biggest defects of horticultural marketing arises due to weights and scales. Usually, in rural areas bricks, stones etc. are used as weights and in urban markets also defective weights are found. Therefore measures must be taken to ensure the usage of standard weights and measures.
- Providing market information to farmers is very essential. More than newspaper and TV, radio's are more popular. Therefore effective utilization of radio for information dissemination is essential.

### 13. Conclusions:

Despite its contribution and role, the horticultural production and marketing suffers from plenty of defects as pointed out in the research study. Effective and proper measures to address these limitations, will play a vital role in strengthening the sector and also to improve the productivity. The cost benefit ratio is highest in case of horticultural crops compared to food crops. Certain horticultural crop like pomegranate, mango will have high initial cost but yield return for many years. Therefore, even though it is expensive initially, all categories of farmers irrespective of their land holdings are advised to take up the cultivation of horticultural crops with modern approaches provided adequate facilities and programmes from the concerned authorities.

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