

An agribusiness approach on business management of fruit processing unit

■ N. ASHOKA, KULDEEP CHOUDHARY AND C.P. GRACY

SUMMARY : The increase in the number of working women, growing income and rising middle class population has contributed to the demand side growth of processed fruits and vegetables. This study focuses on the backward and forward integration of fruit processing unit in Tamil Nadu. The data from management records, purchase books and trading account were obtained for a period of 9 years. The procurement model adopted by the unit is unique where in mango (Alphonso and Totapuri) is directly sourced from growers located in three districts namely Krishnagiri, Dharmapuri and Salem without entering into any contract farming arrangement. The processing factory has good reputation and a long term relationship with grower farmers. The company makes advance payments at the beginning of the season and the final settlement by way of open cheque to the mango suppliers so as to facilitate easy transaction. Further, the firm sells finished product (mango pulp) to eight major corporate directly which avoids middleman in marketing process. Firm is also involved in merchandize export through the above-mentioned buyers. The reasons attributed for the success of the firm are- direct raw mango procurement from the growers which has enhance their bonding direct marketing of mango pulp to corporate and capacity utilization by way of undertaking process on higher basis.

Key Words : Fruit processing unit, Business management, Agribusiness approach

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Fruits and vegetables are not only used for domestic consumption but also processing into various products (pulp, pickles, preserves sauces, jam, jelly squash, etc.,) but also certain quantities are exported in fresh and processed form, bringing much-needed foreign exchange to the country. India is third largest producer of agricultural commodities in the world after China and USA

Fruits and vegetable processing:

It is estimated that nearly 35 to 40 per cent of the fruits

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and vegetable are wasted during picking, harvesting, packing, transportation, storage, marketing and consumption. Mango (*Mangifera indica*) is the most ancient among the tropical fruits and believed to have originated in the Indo – Burma region. India is the major mango producing country in the world with an annual production of 8.50 million tonnes from an area of one million hectares.

A detailed study of business management of mango processing unit, would be of immense use to know whether the private sector follow the sound management principles for their success. Keeping in view of these facts, an attempt was made to assess the management of mango processing unit in Tamil Nadu. The study aims to study the inbound (procurement) and outbound (marketing) logistics management of the firm.

EXPERIMENTAL METHODS

The Paiyur Fruit Products Private Ltd. was purposively

selected for the study. The data relating to the procurement of mango for the past nine years *i.e.*, 2000-2001 to 2008-2009 were drawn from the ledger account and purchase books. The marketing channels adopted by the processing unit to sell their product were obtained from the management records and dispatch registers. Growth rate analysis and tabular analysis was carried out to evaluate critically the backward and forward integration of the firm.

EXPERIMENTAL FINDINGS AND ANALYSIS

The overall objective of the study was to evaluate the inbound and outbound logistics management of Paiyur Fruit Products Private Limited. The results of the study are presented under the following heads.

To study the inbound logistics management:

Mango procurement:

Paiyur Fruit Products Pvt. Ltd. procures mango from three districts namely Krishnagiri, Dharmapuri and Salem (Fig. 1). And during extreme scarce conditions procurement process extend up to districts like Madhurai, Dindigul and Theni (Tamil Nadu). Sometimes they also procure mango from far away places like Hubli-Dharwad (Karnataka) when price is high in local market. It is evident that the farmers sell their produce (raw mango) directly to the processing plant without the involvement of middlemen like contractors or sub-contractors or other traders. Thus, the producers get remunerative prices and the management controls the procurement process.

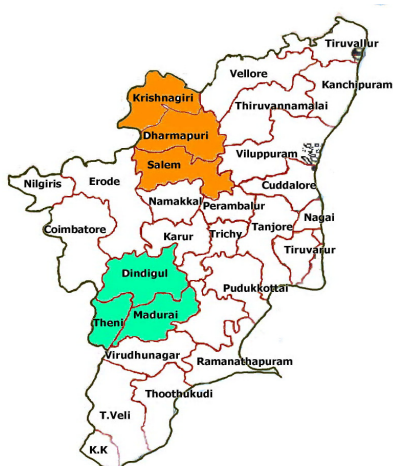


Fig. 1 : Map showing mango procurement region of the firm

Quantity of raw mango procured:

The quantity of raw mango procured by the firm (Table 1) highlights that there was increasing in trend of raw mango procured over the years which ranged from 2701 MT (2000-2001) to 8416 MT (2007-2008) and 7843 metric tonnes during

Table 1: Growth rates of quantities of raw mango procured

Years	Quantity (MT's)
2000-01	2701.4
2001-02	2693.15
2002-03	4248
2003-04	4220
2004-05	4884
2005-06	6670
2006-07	7668
2007-08	8416
2008-09	7843
Compound annual growth rate (%)	16.8***

2008-2009. The reasons attributed for increase in raw mango procurement are increasing demand for pulp from buyers, capacity expansion of the processing unit from 40 MT to 70 MT during 2006-2007. Although there is increasing trend, inter year fluctuations are noticed mainly due to variation in the final demand for processed pulp.

The procurement of raw mango had shown positive growth rate *i.e.*, 16.81 per cent per annum over the study period (2000-2001 to 2008-2009).

Expenditure share of raw materials used for processing:

From the results of the study (Table 2), it was clear that there is an increase in the amount spent for raw material purchase including raw mango. This is because of increase in the quantity and price of raw materials procured including mango and packing material. The Table 2 also revealed the dominant share of raw mango, ranging from 64-97 per cent to the total raw material procured by the firm. This variation is due to fluctuation in prices of raw mango in different years.

Varieties of mango procurement:

The processing unit procures two varieties of mango namely Totapuri and Alphonso (Table 3) for all nine years (2000-01 to 2008-09). Since these two varieties are well suited for processing and has unique characteristics like flavour, particular taste and high recovery percentage due to less fiber content. This is also associated with demand for these varieties from buyers' side and availability of these varieties nearby Krishnagiri and Salem. The result highlighted the domination of Totapuri variety of mango, which ranged from 78.4 per cent to 98.8 per cent for the years 2008-09 and 2003-04. The increased share of Alphonso is due to buyers' preference for specific blend of mango pulp.

Mode of procurement:

Mangoes are procured directly from the farmers, they don't have contract farming but the processing factory has a very good long term relationship with the farmers. The farmers

Table 2 : Expenditure share of raw materials used for processing

Raw material	Amount (Rs. in lakhs)								
	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09
Mango	65.32 (68)	249.48 (87)	107.64 (70)	297 (85)	183.4 (64)	415.95 (64)	292.65 (75)	502.08 (97)	523.26 (81)
Citric acid	2.34 (2)	2.44 (1)	-	-	2.26 (1)	1.92	4.91 (1)	6.73 (1)	3.06
Sugar	-	-	-	-	-	-	2.22 (1)	8.51 (2)	4.29 (1)
Packing material	17.62 (18)	30.56 (11)	40.82 (27)	46.07 (13)	95.25 (33)	222 (34)	85.01 (22)	-	101.48 (16)
Store and spares	5.68 (6)	2.16 (1)	2.06 (1)	2.23 (1)	3.88 (1)	3.3 (1)	1.62 (1)	-	7.35 (1)
Fire wood	4.48 (5)	1.84 (1)	3.28 (2)	4.3 (1)	3.75 (1)	8.62 (1)	6.27 (2)	-	9.56 (1)
Total	95.44	286.48	153.8	349.6	288.54	651.79	392.68	517.32	649

Note: Figures in parentheses indicate percentage to the column total

Table 3 : Variety-wise mango procurement

Years	Particulars	Totapuri	Alphanso	Total
2000-01	Quantity (MT's)	2581.63 (95.5)	119.7 (4.4)	2701
	Amount (Rs. In lakhs)	53.89	11.42	65.31
2001-02	Quantity (MT's)	2645.04 (98.2)	48.12 (1.7)	2693
	Amount (Rs. In lakhs)	242.11	7.36	249.5
2002-03	Quantity (MT's)	4089 (96.2)	159 (3.7)	4248
	Amount (Rs. In lakhs)	81.52	26.12	107.6
2003-04	Quantity (MT's)	4171 (98.8)	49 (1.1)	4220
	Amount (Rs. In lakhs)	288.89	9.02	297.9
2004-05	Quantity (MT's)	4563 (93.4)	321 (6.6)	4884
	Amount (Rs. In lakhs)	156.34	27.06	183.4
2005-06	Quantity (MT's)	6586 (98.74)	84 (1.25)	6670
	Amount (Rs. In lakhs)	396.72	18	414.7
2006-07	Quantity (MT's)	7500 (97.8)	168 (2.19)	7668
	Amount (Rs. In lakhs)	266.02	26.63	292.7
2007-08	Quantity (MT's)	7711 (91.62)	705 (8.37)	8416
	Amount (Rs. In lakhs)	382.19	119.88	502.1
2008-09	Quantity (MT's)	6149 (78.4)	1694 (21.59)	7843
	Amount (Rs. In lakhs)	260	263.25	523.3

Note: Figures in parentheses indicate percentages to row total

have faith in the factory, hence, company has a good backward integration. The factory also maintains a good relationship with farmers by giving money in advance as loan. The farmers are also given good price for their produce.

Method of quantity assurance:

The company has no contract farming in mango cultivation with any farmers but, they have an agreement on stamp paper with farmers with respect to supply of quality raw mangoes. This agreement includes quantity, quality, variety and time of delivery of mango to the processing unit. Hence, these parameters are pre-requisite. Here farmers will get advance money from the firm at the time of executing the agreement. This would help the producer to take care of mango crop cultivation aspects, post harvest operations and transporting the produce to the processing yard in time.

Method of settlement / payment:

The firm gives open cheques for the raw mango suppliers as soon as the material is received at the factory premises. The open cheque is also issued for advance payment to farmers. This helps the firms to keep track of the raw material of suppliers and this will remain as legal document for both of them (processor as well as the raw material suppliers).

To understand the marketing of fruit pulp:

Marketing methods of mango pulp:

The firm would approach prospective buyers over telephone, mail and through personal contact. The trade direction clearly indicated that, in general, the Paiyur Fruit products Pvt. Ltd. had sold their finished product (mango pulp) to different buyers in India (Table 4). The total quantity had increased around 7 fold while in value terms there was more

Table 4 : Major buyers of mango pulp from Paiyur Fruit Products Pvt. Ltd.

Sr. No.	Major buyers
1.	Dabur Food Limited (DFL)
2.	Shingote Agro Foods Private Limited
3.	ITC – Agro-Tech
4.	Oceanic Food Private Limited
5.	Parle Agro Private Limited
6.	Capricorn Food Products Private Limited
7.	Jadali Exports
8.	Hopewell Manufacturing And Exports Private Limited

than 10 fold increases.

Paiyur Fruit Products Pvt. Ltd. had sold finished product (mango pulp) for the eight major buyers as indicated in Table 4. Most of these buyers had procured the pulp in order to supply to overseas buyers. Further, Paiyur Fruit Products Pvt. Ltd was not involved in direct exports but was involved in merchandize export through above-mentioned buyers.

Annual sales performance of mango pulp:

During 2000-2001, company had sold 679.2 MT of mango pulp (Table 5), which was worth Rs. 60.72 lakhs, which increased to 901.76 MT of mango pulp (Rs. 205.26 lakhs) during 2001-2002 and 847.15 MT of pulp (Rs. 247.16 lakhs) during 2002-2003. In the year 2008-2009 of the study period, the company sold 3893 MT of mango pulp valued at Rs. 664.4 lakhs.

Table 5 : Annual sales performance of mango pulp

Year	Sales(MT.)	Sales (Rs. In lakh)
2000-01	679.2	60.72
2001-02	901.76	205.26
2002-03	847.15	247.16
2003-04	1807.26	349.83
2004-05	2908.4	407.7
2005-06	3120.2	544.5
2006-07	3498	501.9
2007-08	3214	547.1
2008-09	3898	664.4

Major players for mango pulp in the region:

The other mango pulp manufacturers in the vicinity of Paiyur fruit products Pvt. Ltd., which are the major players in the market are indicated in the Table 6. Although there are eight other pulp manufacturers in the vicinity, the faith of buyers is on Paiyur fruit products (P) Ltd.

Packing material used:

Mango pulp being the finished product, is packed in OTS cans. The OTS cans are made from high speed precision body

Table 6 : Major players for mango pulp in the region

Sr. No.	Fruit processing players	Location
1.	Sapthagiri PeeGee Fruit Products	Dharmapuri
2.	Sumo Foods Ltd	Periyakulam
3.	Maa Food Products	Dharmapuri
4.	Ruby Food Products	Madurai
5.	Eagle Agro Foods	Madurai
6.	Kanaga Food Products	Cuddalore
7.	VeeYel Food	Metupalayam
8.	Loyal food International	Krishnagiri

makers with welded portion duly covered with lacquer. The containers are either beaded or non beaded. OTS cans are supplied with seamed (built up) or in flattened form. They are able to contain and preserve the quality of food products and are easy to handle. They make storage easy and effective. Three different sizes are available viz., 450 g, 850 g. and 3.1 kg.

Conclusion:

The processing unit procures two varieties of mango namely Totapuri and Alphonso. The unit procured the raw mango from three districts namely Krishnagiri, Dharmapuri and Salem. And during extreme shortage conditions procurement process extends up to districts like Madurai, Dindigul and Theni (Tamil Nadu).

The firm procured raw mangoes directly from farmers without any contract farming. However, the farmers have entered into a formal contractual agreement with respect to quality, quantity, time of delivery and such other parameters. The farmers receive remunerative price for their produce and payment is made immediately after delivery of raw mangoes at the factory premises.

The firm adopted direct marketing technique to sell their produce. The buyers themselves visit to the processing unit and hence, there is no intermediary in the marketing process. It is advantageous for the firm as there is considerable saving in marketing cost. The firm has plans to export mango pulp on its own in the coming years. They are planning to start this export operation in a small way to start with and expand later.

Thus, the business management analysis of Paiyur Fruit Products Pvt. Ltd reveals that for the success. The forward and backward linkages are well established and the firm has pepped up the quality of mango pulp that buyers have stated preference for the product. Similarly mango growers have favourable opinion and high loyalty to the firm.

Rajesh and Joginder (1996) and Suravanan *et al.* (2002) had made some contribution on marketing pattern of fruits and vegetables and efficiency of cashew nut processing from Andhra Pradesh and Tamil Nadu, respectively.

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