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TABLE III

	1964	1965	1966
	Rs./ton	Rs./ton	Rs./ton
Groundnut seed	1,150	1,500	2,000
Groundnut expeller oil	2,500	3,000	4,500
Groundnut expeller cake	480	510	625
De-oil cake	450	450	500
Solvent extracted oil	1,900	2,500	4,000

base of this important processing industry is stabilized, other issues such as growing the variety having higher oil percentage, increasing the yield per acre, etc., are easy to tackle.

CO-OPERATIVE PROCESSING OF BANANA IN JALGAON DISTRICT (MAHARASHTRA)

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By 1963, 899 licensed fruit and vegetable processing units functioned in the country. Of these 17 (1.9 per cent) were in the co-operative sector. Their State-wise break-up was : Maharashtra 6, Kerala 3, Andhra, Gujarat and West Bengal 2 each, Assam and Manipur 1 each. Table I gives the progress of co-operativization of processing of fruits and vegetables in the country during 1961-63.

TABLE I—PROGRESS OF CO-OPERATIVE PROCESSING OF FRUITS AND VEGETABLES: 1961-63

Year	Percentage share in the total quantity of fruits and vegetables processed			Percentage share in the total value of fruits and vegetables processed		
	Private sector	Public sector	Co-operative sector	Private sector	Public sector	Co-operative sector
1961	99.0	0.7	0.3	98.5	1.1	0.4
1962	97.3	0.6	2.1	95.5	0.8	3.7
1963	96.2	0.7	3.1	93.8	1.1	5.1

Source : *Indian Co-operative Review*, Vol. III, No. 1, October, 1965, p. 709.

*The author wishes to thank the Manager of the Jalgaon District Co-operative Marketing Society for having supplied the necessary data on costs of production for the processed products.

It will be seen from Table I that although the share of the co-operative sector increased from 0.4 to 5.1 per cent between 1961-63 it was still insignificant and was confined to States like Gujarat and Maharashtra which accounted for 97 per cent of the total value of fruits and vegetables processed in the co-operative sector.

Seven units for processing of fruits and vegetables in the co-operative sector were promoted during the Second Plan. A target of 77 units was fixed for the Third Plan. However, hardly 23 units were expected to go into production, accounting for about 5 per cent of the total fruits and vegetables processed in the country. The Fourth Plan target was to establish 50 more units : 40 medium sized, 5 large sized and 5 dehydration powder units. With this the share of the co-operative sector in the total processing of fruits and vegetable products was expected to go up to 11 per cent by the end of the Fourth Plan.

PROBLEMS OF PROCESSING OF FRUITS AND VEGETABLES

The very nature of the fruit processing business has some *built-in* peculiarities, *viz.*, (1) high perishability, (2) requirements of special packing and transport services, (3) the short season (hardly 3 to 4 months) of fruits making it difficult to employ expensive equipment and technicians for short duration with idle capacity for the rest of the year, and (4) higher capital investment for the installation of processing units.

PLANNING FOR A CO-OPERATIVE UNIT

Before setting up a co-operative processing unit, the following aspects having a bearing on its success need to be examined thoroughly : (1) availability of raw material to be processed within the area of operation of the society; (2) intensity of the need for the processing unit felt by the producers; (3) estimates of the economics of the processing units, *viz.*, estimates of income and expenditure; (4) facilities for transport of raw material; and (5) estimated demand of the processed product.

The prospects of success of the banana plant erected in the co-operative sector in the Jalgaon district during 1964 in the light of the above considerations are examined in the following paragraphs.

Availability of Raw Material

Banana is an important cash crop of the district occupying a little more than 12,000 hectares in 1962-63. The area under banana which was about 6,000 hectares in 1952-53 almost doubled during the decade. The details of the talukawise area under banana and its share in the gross sown area are given in Table II.

It will be seen from Table II that for the district as a whole 12,063 hectares accounting for 1.4 per cent of the gross sown area were under banana. Banana cultivation was concentrated in Raver, Yawal, Jamner and Pachora talukas, Raver and Yawal together accounting for about 63 per cent and Jamner and Pachora for about 14 per cent of the total area under banana in the district.

TABLE II—TALUKAWISE DISTRIBUTION OF AREA UNDER BANANA: 1962-63

S. No.	Taluka	Area under banana (hectares)	Area under banana in the taluka as percentage of total area under banana in the district	Area under banana as percentage of gross sown area
1.	Amalner	228	1.9	0.3
2.	Bhadgaon	384	3.1	1.1
3.	Bhusawal	406	3.4	0.7
4.	Chalisgaon	229	1.9	0.3
5.	Chopda	81	0.7	0.1
6.	Edlabad	232	1.9	0.6
7.	Erandol	460	3.8	0.6
8.	Jalgaon	448	3.7	0.7
9.	Jamner	934	7.8	0.9
10.	Pachora	703	5.8	1.1
11.	Parola	373	3.1	0.7
12.	Raver	4,421	36.7	8.3
13.	Yawal	3,164	27.2	5.7
	Total	12,063	100.0	1.4

As regards the availability of raw material it may be observed that the total annual production of banana which increased by about 114 per cent during the decade from 1953-63 was to the tune of about 6 lakh tonnes by 1963 and in fact there was a problem as to how to dispose of the produce profitably.

Need for a Processing Unit

Of the total production of about 6 lakh tonnes, less than 2 per cent is consumed locally while the rest is usually exported to Madhya Pradesh, Rajasthan, Uttar Pradesh and Delhi. About 4,000 tonnes were also exported to foreign countries like Kuwait, Bahrein, etc., through the District Federation of Fruit Sale Societies. There were 17 co-operative fruit sale societies in the district which handled about 40 per cent of the total sales of banana while the rest of the trade was in the hands of private traders. Due to shortage of railway wagons specially during the peak period, the export usually falls much short of the supplies, causing considerable decline in the prices and adversely affecting the economy of the banana producers. Besides, due to the perishability of the fruit about 10 per cent of the fruits are usually spoiled during transport. Further, although the central financing agency of the district has been quite progressive in financing banana cultivation and has financed to the tune of Rs. 2,500 per hectare for banana cultivation through the fruit sale societies, private traders are still dominant in the banana trade grabbing major share in the consumer's rupee. A need therefore

was felt to co-operativize the processing of banana. It is expected that the feed-back effect of co-operative processing of banana would be felt by fruit sale societies which will be in a position to offer higher prices to their members, thus attracting greater sales. Increased sales through co-operatives in turn will affect the recovery performance of co-operative finance. Co-operative processing besides offering higher prices to producers by cutting down the costs on transport, waste, etc. (average railway freight per wagon for transporting bananas by parcel train from the district to Delhi was more than Rs. 1,500), would also help to improve the recovery performance of co-operative finance, contributing to increased efficiency of co-operative credit.

Economics of Co-operative Processing of Banana

With the above considerations, the Jalgaon District Co-operative Marketing Society decided to enter into the field of processing of banana, papaya and mango. The banana powder plant was erected in 1964 at Jalgaon with a total capital outlay of about Rs. 15 lakhs. The break-up of the outlay was as follows :

	Rs. lakhs
(1) Machinery	5.30
(2) Buildings	7.585
(3) Electric fittings	0.575
(4) Stores, etc.	0.50
Total	14.96

The outlay was to be financed as under:

	Rs. lakhs
1. Share capital contributed by societies and individuals ..	2.412
2. Share capital by Government	2.40
3. Loans from the Maharashtra State Co-operative Bank	7.25
4. Investment by the District Marketing Society	1.33
5. Other borrowings	1.518
Total	14.96

Cost and Returns

With an average annual production of 200 tonnes of banana powder, 25 tonnes of papaya powder and 25 tonnes of mango powder, the plant was expected to produce about Rs. 40 lakhs worth of the final product. Since the same plant can produce banana as well as mango, papaya and egg powder and since the peak seasons of these products are different, the plant was expected to work all the year round.

The production costs of the various final products are given in Table III.

TABLE III—PRODUCTION COSTS OF PROCESSED PRODUCTS

(rupees per kg. of powder)

S. No.	Particulars	Cost of raw material	Cost of processing and packing	Total cost
1.	Banana	2.12	2.09	4.21
2.	Mango	3.34	2.09	5.43
3.	Papaya	2.84	2.09	4.93
4.	Eggs	18.00	3.00	21.00

With the bulk of the produce having prospects of export, the net profit per kg. would be Re. 1, giving an annual net profit of about Rs. 2 lakhs from banana powder alone.

Facilities for Transport of Raw Material and Estimated Demand of Processed Products

Since banana production is concentrated mostly in four talukas, namely, Raver, Yawal, Jamner and Pachora, if the processing units are located in these talukas, the cost of transport of raw material will be much less. As regards market for the product, enquiries received by the District Marketing Society from Japan, Hong Kong, Australia, Germany, Italy, U.K. and U.S.A. indicate that the venture will be a good foreign exchange earner. Besides, the defence-oriented economy has an increasing demand for the processed products and as such the estimated demand for the processed product in the country as well as from outside indicates bright prospects for this venture.

PROBLEMS

Although the plant went into operation in 1964 it had to face certain problems. The powder contained a high percentage of bacteria and required additional machinery to reduce this percentage. The apex bank was ready to finance the increased outlay for the additional machinery, but only against the government guarantee for the entire loan. The government guarantee however is not still received for want of which the plant is kept idle. This is a case in point how enthusiastic efforts of co-operators are frustrated by the proverbial delays in administration.

PROSPECTS

With sufficient finance if this plant makes a success, a chain of such plants can be developed in the district (with the resultant reduction in the cost of processing) since one such plant with an annual production of 300 tonnes (if only banana is processed) of banana powder consuming 3,000 tonnes of fruits covers an area of only 60 hectares (with an average yield of 50 tonnes per hectare) while the area under banana in the district is more than 1,200 hectares.