

# FINANCING OF FRUIT AND VEGETABLE PROCESSING INDUSTRY IN THRISSUR DISTRICT

By

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## THESIS

*submitted in partial fulfilment of the  
requirement for the degree of*

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*Kerala Agricultural University, Thrissur*

**Department of Rural Banking and Finance Management**

**COLLEGE OF CO-OPERATION,  
BANKING AND MANAGEMENT**

**VELLANIKKARA, THRISSUR - 680 656**

**KERALA, INDIA**

**2004**

**Declaration**

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## DECLARATION

*I, hereby declare that this thesis entitled "**Financing of Fruit and Vegetable Processing Industry in Thrissur District**" is a bonafide record of research work done by me during the course of research and that the thesis has not previously formed the basis for the award to me of any degree, diploma, fellowship or other similar title, of any other university or society.*

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## Introduction

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## CHAPTER I

### INTRODUCTION

Agriculture, on which our huge population depends for food, raw materials and other basic necessities is the mainstay of the country's economy. Indian agriculture enjoys tremendous strengths like huge genetic resources, cheap labour and enterprising farmers and is known for its multi-functionalities for providing employment, livelihood, food, nutritional and ecological securities. Agriculture and allied activities contribute 26.1 per cent (2004) to the gross domestic product (GDP) in India as compared to 69 per cent in the U.S, France, Norway, Japan and 5 per cent in Korea (Panjab Singh, 2002). Indian agriculture employs two per cent of the total work force as compared to two per cent of the total work force in the U.S., U.K., 2.6 per cent in Germany, 81 per cent in Tanzania and 93 per cent in Nepal. Eventhough, agriculture is the primary sector in our country, exports are not even two per cent of world agro-food trade. The main reason for the low export share of agro-products is the absence of well established food processing industries. At present the food processing of our country is at a low level of 4.8 per cent of the total production.

Horticulture has been the mainstay of rural economy since ages. Before man learnt to cultivate cereals systematically, it was the horticultural crops which supported his daily requirements of foods. A mention of horticultural crops can be found in ancient sculptures and paintings of Agentha and Ellora. It is ironical that despite having so much importance in the farm economy, the commercial aspect of horticulture was not known till recently. Over the years, horticulture has emerged as an indispensable part of agriculture offering a wide range of choice to the farmers for crop diversification. At the same time, India is endowed with varied topography, climatic conditions and seasons that would help India to emerge as a leading producer of horticultural crops.



Table 1.1 Area and production of fruits and vegetables in India and Kerala

Year	Fruits				Vegetables		
	India		Kerala		India		Kerala
	Area (000 ha)	Production (000 tonnes)	Area (000 ha)	Production (000 tonnes)	Area (000 ha)	Production (000 tonnes)	Production (000 tonnes)
1996-97	3579.4	40458.1	195.8	1826	5515.4	75074.4	2790.0
1997-98	3701.9	43263.2	195.8	1826	5607.1	72683.1	2789.5
1998-99	3726.8	44042.4	233.1	1621.6	5866	87536.0	2857.2
1999-00	3796.8	45496.0	187.8	1184.5	5993.0	90830.7	2857.1
2000-01	3886.6	45370.0	234.5	1772.5	6248.5	93921.5	2530.9

Source: CMIE (2004)

Note: The details of area (vegetables) is not available

Table 1.1 shows the area and production of fruits and vegetables in India and Kerala from 1996-97 to 2000-01. The area as well as production of fruits in India increased in all the years. But in Kerala, the increase is not that much significant. The cultivated area as well as production of vegetables are relatively less compared to that of fruits. So, in Kerala, fruit processing industry has wide potential.

The important horticultural crops include fruits, vegetables, spices and plantation crops. India accounts for 10 per cent of the total world production of fruits and stand second after China (44 MT). In the case of vegetables, India's production (87 MT) has exceeded only by China. India ranks first in the production of cauliflower, second in onion and third in cabbage, India also leads the world in the production of mango, banana, sapota and acid lime and has recorded highest productivity in grape.

Rana (1984) views the process of economic development through the emergence of horticulture as an important sector because fruits and vegetables form an indispensable part of human diet due to their nutritive values, resources of productive foods like vitamins and their high palatability both in fresh and processed forms.

The liberalisation of the economy has resulted in drastic reduction in the prices of agricultural products. Eventhough the farmers are increasingly free to export, their earnings from the export of primary produce are uncertain due to the lower price in the international market. So, the accent should be shifted gradually from primary to processed agricultural products to earn higher exchange value per unit of export and to generate employment in the country. Processing plays an important role in the conservation and effective utilisation of available food supply and also influence the dietary habits.

Over the years the total demand for food and raw materials has been risen quantitatively and qualitatively. The demand increased quantitatively with the growth of population, per capita income, urbanisation, steady break down of joint family system etc. The qualitative change in the pattern of the demand is evident from the shifts from raw to processed or 'ready-to-eat' foods. Thus changes in consumption pattern in recent years have created high demand for food products in processed and preserved form to suit the changing life style. These products include jams, pickles, squashes, dehydrated fruits and vegetables, bread, butter, cheese and sherbats. Naturally, these developments call for an urgent need for developing the processing sector in India.

The processing sector can establish very useful linkages and spread effects in terms of production, productivity, processing, marketing as well as income and employment generation, thereby reducing rural poverty and unemployment. They can also serve the consumers in a much more desirable manner.

Fruits and vegetables processing is the core activity of the Ministry of Food Processing Industries. It helps to minimise losses of fruits and vegetables, prolong the availability period for processed products and helps to create employment opportunities in rural areas. Besides this, it also ensures regular availability of nutritious and hygienic

food products to the consumers. Some of the derived benefits resulting from this industry are reduction in migration of labour, increase in demand of supplementary raw materials like sugar, chemical and packaging materials and increase in export earnings.

### **Fruit and vegetable processing industries in India**

The fruit and vegetable processing industry in India is dominated by units operating at cottage and home unit levels. According to National Industries Classification 1987, the fruit and vegetable processing industry in India comes under the four digits classification as 2021, 2022, 2023, 2024, 2025, 2026 and 2029 (Appendix IV). Therefore all the artificially dehydrated fruit/vegetable products, fruit juices, concentrates, squashes, fruit powders, sauces, jams, jellies, different pickles, marmalades, chutneys and canned and preserved fruits/vegetables come under this industry.

Processing of fruits and vegetables on a commercial scale started in India about one hundred and fifty years ago. But even before, people has started preserving food by using primitive methods of processing. They started freezing of fruits/fish/meat in earthen pots, salting, fermenting and adding spices to change the flavour and taste of food etc. With the passage of time, technology of food processing also underwent revolutionary changes. The food technologists introduced innovations in processing and packing to preserve foods hygienically in good quality.

The processing operations was done mainly as an unorganised activity until 1927. In that year the first large factory for canning fruits/vegetables was set up for the first time in India. During 1927-40 period, the industry produced, pickles, squashes, juices and cordials only. From 1940 onwards, the industry diversified into products such as jams, jellies and marmalades. The major reason was the increased demand for fruit/vegetable products from urban people who could not obtain these products from abroad because of the restrictions on imports imposed at the time of second world war. Moreover, in order to supply to the Indian Defense Personnel stationed in different parts of Asia and Africa, more processed fruits/vegetables have to be produced. Those were the principal factors that gave a fill up to the accelerated development of fruit and vegetable processing industry in the country.

In the initial stages of development, the location of the fruit and vegetable processing industry was mainly concentrated in cities like Madras, Bombay, Calcutta and Delhi. But after independence, a number of fruit and vegetable processing units were established in the states of Karnataka, Kerala, Jammu and Kashmir, Himachal Pradesh, Tamil Nadu, Andhra Pradesh, Uttar Pradesh and West Bengal.

The manufacture of processed fruits/vegetables in India is controlled by the Fruit Product Order (FPO), 1955. It is obligatory for all units manufacturing fruit/vegetable products to obtain FPO license from the Ministry of Food Processing Industries. Thus the number of FPO licences is an indication of the total number of units engaged in the production of processed fruit/vegetable products in the country. In addition to this, there exists a few unauthorised units.

In spite of the fact that India, is the second largest producer of fruit and also of vegetables in the world, yet the commercial processing of fruits and vegetables is less than 4.0%. The main reason being that domestic consumption of processed items is quite meagre because of economic reasons and also as a matter of habit Indian consumers prefer to take fresh fruit and vegetables. The high cost of packaging pushes up the cost of the processed items and thereby makes them out of reach of the common man. Because of the varied climatic conditions, some fresh fruits and vegetables are available throughout the year. Fruits like bananas are non seasonal and apples, oranges, and potatoes etc. are seasonal and put in the cold stores, thus prolonging their shelf life and making them available in the off season. Some fruits like guavas, orange etc. have two seasons. So they are available in fresh form for five months in a year.

Growth of the fruit and vegetable processing industry in India in various years is given Table 1.2.

Table 1.2. Capacity, production and growth of fruits and vegetable products

Year	Capacity (lakh tonnes)	Products (lakh tonnes)	Growth in production over previous year
1991	8.94	2.80	14.29
1992	9.50	3.60	28.57
1993	11.05	5.69	30.28
1994	12.60	5.59	... 20.00
1995	14.02	6.76	20.93
1996	17.60	8.50	25.74
1997	19.10	9.60	12.94
1998	20.40	9.10	-5.20
1999	20.80	7.40	3.30
2000	21.00	9.80	4.26
2001	21.10	9.90	1.00

*Source: Government of India (2002)*

As it is observable, the installed capacity and quantity produced increased substantially from 1991 to 2001. The quantity produced by the fruit and vegetable processing industry has increased by 25.4 per cent from 1991 to 2001. The rate of increase was high in initial years, subsequently the growth rate declined and it was even negative in 1998.

Presently there is a little over 5198 units registered under the Fruit Products Order of 1955, distributed over the country. The installed capacity which was 11 lakh tonnes in 1993 increased to 21.1 lakh tonnes in 2001. After the liberalization of economic policies in the country, a few modern plants to produce mango pulp, tomato paste etc. in aseptic packing, free drying of many fruit and vegetable units including mushroom is being taken

up. Many proposals for joint ventures from USA, UK, Netherland, Switzerland and Germany have been signed and 248 of such proposals have already been implemented. It is expected that in the years to come, many modern units and joint cultures shall come up.

### **Fruit and vegetable processing industry in Kerala**

The farming situation in Kerala is dominated by horticultural crops. A wide range of fruits, vegetables, plantation crops, spices and medicinal plants are included under the list of horticultural crops. Being highly perishable, the rate of post-harvest losses of fruits and vegetables in Kerala is also estimated at 30 percent of production. Kerala farmers grow very important crops like mango and pineapple.

From the processing point of view we terribly lack knowledge and skill in all aspects of post harvest handling of these crops and the situation in other crops is much worse. The establishment of Canning Industries Cochin Limited (CAICO) gave a beginning to the fruits and vegetable processing industry in Kerala. The increased demand for processed fruit/vegetables in the state due to changes in socio-economic environment and dietary habits helped the industry to expand. Moreover, steady export to the middle east countries after 1970 further helped the development of this industry. Table 1.3 presents Kerala's share in the fruit and vegetable processing industry in India.

**Table 1.3 Kerala's share in fruit and vegetable processing industry in India**

Year	Kerala		India	
	No. of licence	Production (tonnes)	No. of licence	Production (Tonnes)
1969	44 (4.80)	2,200 (3.03)	904	72,610
1981	160 (6.10)	11,600 (8.50)	2,611	1,36,000
1993	230 (4.40)	17,680 (3.40)	4132	5,12,100
Growth rates	422.70	703.60	357.00	605.30

*Source: Government of India (1995)*

In 1969, the number of FPO licenses accounted for 4.8 per cent of All India licences and the share of production was placed at three percent. However there was steady growth and by 1981 Kerala's share is the total number of units has increased to 6.1 percent and share in total production to 8.5 per cent. But from 1981 to 1993 the share declined to 5.5 per cent from 8.5 to 3.41 in the case of output of the industry. It is thus clear that the fruit and vegetable processing industry could not keep pace with the accelerated development that had taken place at all India level in eighties and early nineties.

### **Processing industry in Thrissur District**

Thrissur, the cultural capital of Kerala, is also known for its contribution to the agricultural sector. The establishment of the Kerala Agricultural University and the development of pockets of fruit and vegetable production centres in the heart of the district headquarters and in the remote areas of the district signifies the contribution of Thrissur district to agricultural sector. With 32 registered units and more number of unregistered units, the contribution to processing sector also signifies the importance of the district in the horticultural sector of Kerala.

The oldest and the still existent unit in the district got established during March 1947, by name Canning Industries Cochin Limited (CAICO). The unit started functioning on its own using the raw materials available in the district. This made them depend on a Bombay based firm after two years of its functioning. However, during the subsequent five years the lessons learned from the Bombay firm were sufficient to build confidence in the management to take on the responsibility on their own shoulders. So, they started producing and marketing its own canned products under the brand name Caico. The company got its brand name established in due course of time and became the approved supplier to the Indian Army.

The district also has a well known Fruit and Vegetable Marketing Co-operative Society (Fruitcos) with farmer members. The main activity of the society is procurement and marketing of fresh fruits and vegetables. Later they felt the need for storage and preservation and started a processing unit. But now the unit is in stagnation stage.

A number of units emerged and started operating in the district. The prominent among them were Dalco Canning Ltd., P.O. Food Packers, Sagara Food Packers, Naveen Food Products etc. Out of these units, Dalco Canning Ltd. and P.O. Food Packers were closed down. Despite the failure of these processing units, more units entered the field of fruit processing. Kalyan Food Products, a unit of Kalyan Soft Drinks is another unit started. With new strategies and promotional methods, Kalyan Products soon became popular among retailers and consumers in a short time. Entering the market as a competitor to Caico, Kalyan's market share is on the increase as per the market trends and has a good product range.

Units like Premier Food Products located away from the town was started with the aim of entering to all range of processed items. But it could not withstand the material cost that increased in the recent past. Finally they got diverted to the production of synthetic soft drinks. However, the unit still depends on horticultural producers by processing and marketing pickles under the brand name 'Premier'. Premier is the popular among the customers of the locality and nearby areas due to its taste and quality. The unit holds a good status in the local markets. Now new units like Naveen Food Products, Devi Food Products etc. have started processing of fruits and vegetables.

In Kerala, even with a variety of exhaustive fruits like jack fruits, papaya, banana, mango, cashew apple and pineapple, the people in Kerala is facing the problem of non-availability of fruits during off seasons. The major reason for this is the absence of adequate processing units. In the absence of adequate processing facilities, the grower is not assured of the off-take of his produce and is quite often left to the mercy of the markets. Starting up of new processing ventures will not only protect the farmers from the evils of liberalization and globalization, but also will reduce the wastage of resources. As finance is the major input required for starting new processing units, the financing agencies has an important role in supporting the units by offering cheap credit at affordable terms and conditions.

Further, there are some specialities for banking activities in Kerala. The Kerala banks are flooded with funds but they find it difficult to disburse the credit mainly due to small size of the state and also the non-availability of viable proposals. In this context



the financing of agro-processing units has an added potential provided the entrepreneurs come forward with venture ideas like agri-business and banks take a liberal stand to promote agro-processing and new associated activities. Thus it is appropriate to examine the present pattern and trends in finance, and the study was conducted with the following objectives:

1. To examine the extent and pattern of institutional finance to the fruit and vegetable processing units.
2. To identify the factors influencing the repayment behaviour of the selected units.

### **Practical/Scientific utility**

The present study is an endeavour to examine the financing pattern of fruits and vegetable processing industry in Thrissur district. The performance of the selected units were analysed by using five years data (1998 to 2002) with the help of various ratios and percentages. The findings of the study would be useful to the prospective entrepreneurs who are interested in processing ventures which in turn will help the farmers to fetch better prices for their products.

The study also analysed the factors influencing the repayment behaviour of the selected fruits and vegetable processing units. The conclusion and findings of the study may help the banks to form new lending policies and this may help them to know whether there are ample opportunities in financing fruit and vegetable processing units. The study also brings light to the problems, if any, faced by the entrepreneurs which will help the entrepreneurs to concentrate in that areas and which would enable the banks to take corrective actions, if necessary.

### **Limitations of the study**

. In evaluating the study, limitations have to be taken note of:

1. The study was based on a sample of ten out of thirty firms in Thrissur district and hence the findings of the study cannot be generalised.

2. The processing of vegetables in Kerala was undertaken only by very few firms, mainly because of the lack of availability of processable vegetables. Most sample units were concentrated in the processing of fruits like pineapple, mango and orange. Hence the field study focused more on fruit processing firms.
3. The selected units did not avail long term loans during the study period. So, the study was concentrated mainly to working capital loans.

### **Organisation of the report**

The report is organised into five chapters. Besides the first chapter, the second chapter gives a comprehensive review of the available literature. The methodology adopted for the study including the study area, study period, sample size and statistical tools employed are explained in chapter three. The fourth chapter is earmarked for results and discussion besides presenting a brief profile of the selected units. The last chapter presents the summary of findings and conclusions of the study followed by references, appendices and the abstract of the thesis report.

## Review of Literature

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## CHAPTER II

### REVIEW OF LITERATURE

The production of fruits and vegetables in India have increased considerably. Even with the increased production, fruits are not readily available in adequate quantity in the markets. This is because of poor harvest, handling, storage, transportation facilities or lack of infrastructure and the inadequacy of marketing set up. Loss of fruits and vegetables occur due to the tune of up to 30 per cent amounting Rs.23,000/- crore annually. India wastes more fruits than are consumed in a country like UK. Although we are one of the largest producers of raw-materials for the processing industry in the world, the industry itself is under-developed in India. Less than four per cent of the fruit and vegetable production is only processed in India.

In the present situation, more than 90 per cent of the fruits and vegetables are marketed by the farmers in the fresh form. In this context, fruits and vegetables processing becomes critical. This would mop-up surpluses at farm sector and ensure fair price to the producer. The processing of fruits and vegetables will help to reduce the quantitative and qualitative losses from the producing centres to the consuming centres and it also helps the consumers to get the products at reasonable prices. Studies which could quantify the losses at different points like picking, packing, grading, transportation, storage, etc. are seriously lacking. The special characteristics of fruits and vegetables distinguish them from other agricultural crops. Their natural characteristics like moisture content, texture and unique size make them highly perishable resulting in huge post-harvest losses. The prospective entrepreneurs need finance to start the agro-processing units. The banks should come forward to finance the emerging agro-processing units.

Large volume of research has been done on various aspects of industrial development in India especially in small scale industrial sector. Most of these studies were with reference to the organized industrial sector because of the non-availability of

data. However, of late, there have been attempts to study the role and significance of small scale industries in the industrialisation process. Agro-processing is an emerging area in the small scale industrial sector. Eventhough there are a lot of research works in agricultural processing and on its technological aspects, studies relating to its economic and financial aspects are very limited. The objective of this chapter is to develop and establish a theoretical frame work for the study based on ideas and concepts expressed in the existing literature of both theoretical and empirical value. So, an attempt is made here to make a review of some significant studies on the following aspects.

1. Processing aspects
2. Financial aspects
3. Repayment aspects

### **Processing aspects**

Muralia (1979) while studying the linkages of fruits and vegetables processing and preservation units inferred that the growth of per capita income, urbanization and growing population are the main reasons for increasing the total demand for food and raw-materials. The demand pattern has also undergone a shift from inferior to superior foods and from raw to processed or 'convenient' foods calling for the development of processing industries.

Mani (1989) in his study found out that finance is the major constraint faced by the fruit and vegetable processing industry in Kerala. The seasonal nature of this industry demands processing of large quantities of raw materials to meet the demand throughout the year. This calls for large investment which most of the cottage and small industries are subject to considerable difficulties in procuring finance from the banks.

Parameswaram (1981) pointed out that the low level of output is indicative mainly of a narrow base of domestic demand. So, in his opinion Government should initiate

steps to popularize the fruit juices and concentrates. Government is planning to set up distribution centres at New Delhi, agro-industrial complexes in few selected states and also rural processing centres.

David (1984) finds prospects for processed products in a nuclear family where the husband and wife work. To meet the flaring family expenses, canned products serve them as the best when cooking and cooks to be the problems.

...

Vijayaraja (1990) in his study highlighted the role of institutional credit, stressed the need for market financing of farm produce and examined the role played by the agro-based and processing industries in agricultural marketing and market financing. It is suggested that by effecting a vertical integration between the agricultural sector and agro-based and processing industries, problems relating to agricultural marketing can be considerably reduced.

...

Kambar and Singh (1991) suggested that the cost of processed food can be reduced considerably by proper monitoring of post harvest operations for which conservation of materials, efficient and judicious use of inputs, by product utilization, capacity utilisation etc. are important.

Balasudhahari (1991) while analyzing the coconut based food and oil milling industries found that the performance of the agro-processing units in Kerala were far above the break even point. The major problems faced by the units were shortage of raw materials, lack of credit facilities, lack of demand for the products, competition from other units and the most important one being the problem of taxation.

Chandha and Rethinam (1992) in a paper on export of horticultural crops estimated that in India there are over 4000 food processing units with FPO license and a total installed capacity which is barely adequate to handle 0.5 per cent of the total farm out put. This leads to a low capacity utilization of 35 per cent in the fruit and vegetable

processing industry. It is mainly due to seasonality, locational disadvantages and high perishability of fresh products.

Subramanyam and Sudha (1993) argued that encouraging the fruit and vegetable processing industry will certainly help India in earning much needed foreign exchange as there exists good scope for exports. The highly seasonal nature coupled with perishability results in wide fluctuations. Processing is one of the measures to earn income from this situation.

Thakur and Devender (1993) in their study considers the potential of processed food industry and remarked that the progress is not more than moving by the surface.

Sarin (1993) recognized the food processing industry as a golden goose to be nurtured and not hacked and it is not happy with the abolition of excise duty alone by the Government as the taxes on containers, boxes, cans etc., have not been put down and considers it a major constraint in the entrance to domestic and foreign markets.

Raju (1994) viewed the establishment of more processing units as a measure to check the social problems in mounting unemployment. The process of value addition will help in reducing the post harvest losses and will also indirectly create employment opportunities. He added that the high literacy rate of the state will help the processors in marketing these value added products.

Alagh (1995) studied the prospects of agro-based industrialization and pointed out that the de-acceleration of capital formation in the agricultural sector will require both the revival of public investment and the rural credit systems. Agro based industrialization can base itself only on a scheme of faster and more widespread growth.

Batti and Varma (1995) presented an analysis of fruit and vegetable processing in India as both a method of preserving excess agricultural production and generating income. Information is presented from empirical studies carried out on selected food

processing units in three districts of Haryana. The present food industry is male oriented. So the study identified the role of performance and linkages of different organizations and institutions with in fruit and vegetable processing to identify the appropriate food processing technologies for dissemination among rural family.

Jeeja (1996) in her study found that overhead cost of the industry increases when the product mix is high. The marketing channel is also not convenient to the producers and the channel involving dealers was the most effective one. The study suggested a new model for improving the performance of processing industries.

Swaraj (1998) explained the importance of processing industry. The world production of food and drink products has gone up considerably with the increase in the population. Better processing, packaging technologies and distribution network have facilitated the growth. The volume of output in industrialised world has grown slowly in recent years due to market saturation. But many companies have managed to increase their turnover by making greater value addition to their products. The industries in developing countries have achieved a high growth rate due to rapid increase in demand for processed food from urban population.

Susanta and Pal (1999) pointed out that eventhough India has emerged as one of the most horticulturally important countries in the world, a very insignificant portion; less than one per cent of production is used by the processing industry compared to 83 per cent in Malaysia. India has become a favourable location for investment with opportunities for collaboration of fruit and vegetable processing industry as a result of the measures taken by the government such as removal of certain restrictions, exemption of excise duty etc.

Gupta and Kulkarni (1999) opined that agro-industries at rural threshold plays a vital role in economic development. This can act as a solution to the declining employment opportunities because of urbanization. Generation of additional income will



in turn increase the total cash flow in the village, which will help to improve the standard of living of the local population.

Rathore and Dhareja (1999) after analyzing the scope for entrepreneurship in 21<sup>st</sup> century, concluded that the new economic environment offers scope for entrepreneurship in agriculture sector. Some of the areas which provide immense scope for entrepreneurship are food processing and packaging, preservation of seasonal vegetables and fruits, preparation of fruit juice and pulp etc.,

Khan (2000) in his report on WTO reiterated the urgency of setting up of more and more fruit and vegetable processing units to protect the farmers from the evils of liberalization and globalization. After the introduction of liberalisation and globalisation, the prices of agricultural commodities have come down drastically. One of the major solutions suggested by him for this severe crisis is the production of value added commodities.

Goyal (2000) after studying the importance of food exports from India, came to a conclusion that it creates productive jobs in rural areas, improve income of the farmers by enhancing productivity and by eliminating wastages and it also helps to earn valuable foreign exchange. But the food processing that is taking place today is at a low level i.e. less than two per cent of the total production.

Brahmaprakash (2000) stated the importance of processing industries by arguing that it provides employment opportunities in rural areas, enhance the income of the farmers, reduce wastage of resources along with increasing exports which adds inflow of foreign exchange. In spite of being the second largest producer of fruits and vegetables in the world after China, only 4.8 per cent of total production is commercially processed. Thus, there exists a vast untapped potential for agro processing in India which should be exploited.

Shete (2000) after studying the importance of agro processing industry concluded that it provides opportunities in encouraging investments in forward, backward and sideway linkages and thereby generate considerable employment opportunities. There is a greater awareness of the nutritional value of various products which again open up wider market possibilities. In short, agro processing promises excellent potential to boost our economy, due to the enormous opportunities both in the domestic and export market. It is therefore important to develop linkages between farm and industry to help agricultural development through creation of backward and forward linkages, adding value to farmer's products and increasing their income.

Milkho and Manjeet (2000) concluded that the number of processing units has risen about eight per cent during the years 1980-1997. The installed capacity also increased, but because of low capacity and capacity utilization, the volume of processing is very low. He visualises great scope and potential of becoming India a leading country in processed fruit and vegetable products only if it removes constraints presently being faced.

Chawla (2002) studied the increasing importance of food processing industry in the development of agricultural sector. Even though the so called sunrise industry has not been able to realize its full potential due to low demand, consumer interest is shifting from traditional products to high value products. Food processing and allied activities add a lot of value to the farm produce, thereby increasing the income of the farmer. It also generates numerous employment opportunities, reduce wastage, diversifies rural economy and promotes rural industrialization. She suggested to increase current rate of food processing from just two per cent to 10 per cent by 2020.

### **Financing aspects**

Uniamikogbo (1994), while evaluating the performance of various agricultural credit guarantee schemes by the Government of Nigeria found that for an effective

contribution from commercial banks to Nigeria's economic development through the provision of agricultural credit and finance, there is a need for intensified efforts from both the Government and private sector. Rural branches of banks should be strengthened in terms of personnel, resources and number. Farmers should be made aware of the available sources of finance, their locations, administrative and operational procedures. There are many institutions involved in agricultural credit. To avoid duplication of activities and scarce resources, efforts should be geared towards the co-operation of these activities. Research into agricultural inputs that can be of use to local farmers should be encouraged by the Governments. The role of private sector is also important.

Gadre and Deshpande (1983) suggested that financing of small business section of the society has to be viewed by the bank as a social obligation. For this, the banks have to fix the level of such advances and the number of borrowers for the bank as a whole and for each branch for guidances of the staff. He also suggested that repayment programme should be commensurated with borrower activity and income generation in consultation with him.

Iqbal (1990) while analysing his study on financing of agro based industries in U.P found that one of the major constraints faced by agro-processing units is lack of financial resources. This factor becomes all the more acute when the resources for development have to come from domestic savings which are necessarily low in a state like U.P.

Desai and Namboodiri (1992) found that small scale industries have mainly a city oriented deposition. They suggested that location of these industries should be encouraged in rural areas where the basic raw material, labour and incremental income would emerge.

Liu (1994) in the study "Building an agriculture financial credit system in developing country" observed that agricultural credit is one of the most important

instruments for agricultural development in Taiwan, with a farming system that is growing in capital intensive. Its policy is primarily to provide adequate credit to support the agricultural production in general. He also studied the role of agricultural credit in developing countries and institutional credit for agriculture.

Petranov *et al.* (1994), concluded in their study that the Government should intervene in the form of resolution of held over bad loans and provisions of collateral guarantees, financial consultation for farmers, training for bank officials etc. The flows of credit to agriculture have decreased since the beginning of the economic reforms in Bulgaria. So the Government should take measures to help agricultural sector.

Bharathan (1995), highlighted in his study the major problems faced by small scale industries units as marketing and finance. While 44 per cent of the surveyed units account finance as their problem 42 per cent account finance as their major constraint.

Zemlyanskiy (1996) pointed out that priority areas for investment in Russia's agro-industrial complex include dairying, meat, fruit and vegetable processing and storage. Despite a shift from larger to smaller scale agricultural production, there are at present too few smaller and medium size processing enterprises.

Ramesha (1998) observed that eventhough different agencies provide finance to small scale industrial sector (SSIS), the major role is played by the commercial banks. Out of the aggregate funds available to small scale enterprises, the share of commercial banks was 78 per cent. The bank credit to SSIS has shown an upwardly trend and the outstanding advances of public sector banks to SSI sector has almost double over the last six years. Despite the increasing role of commercial banks, it is often said that the SSI sector is grossly under financed. Moreover, there have been substantial variations across states in the distribution of scheduled commercial banks finance to SSI sector and it was widened between 1990 and 1996. Thus, it is essential to take cognizance of these aspects while framing policies to augment flow of credit and to reduce disparities.

Reddy (1998) mentioned that credit for small scale industries is mainly provided by the Small Industries Development Bank of India (SIDBI) supported by a host of other institutions such as State Finance Corporations and Commercial Banks. Small scale industrial sector raises term credit and working capital required by it from commercial banks, Regional Rural Banks (RRB) and state financial corporations. The banking system provides mainly working capital and the State Financial Corporations provide mainly investment capital.

Mohanty and Kar (1999) concluded that lending to the small scale units is unprofitable due to low administered interest rate and large incidence of default. It is observed that small units largely encounter working capital rationing imposed by banks. It is found that increased proportion of bank finance to other finance has a negative impact on investment and this is largely because of the uncertainty involved in obtaining the same. Moreover, it is interesting to note that with increase in the proportion of bank finance to other finance, vindicating thereby, the much established contention that larger loans are less risky. They also pointed out that as the lending to SSI units is risky, either finance is not provided at all or if provided, only in a limited quantity, at a delayed time and on disadvantageous terms and conditions. Restricted access to finance not only erodes the profitability of many units, but checks a number of viable and profitable projects from being undertaken. The real problem is encountered in meeting the working capital requirements which is the prime factor responsible for the failure. A positive association between external finance particularly bank finance and growth of the enterprise is often recorded. As the bank credit is rational, industrialists are forced to depend on high cost and exploitative in the formal sector.

Neelamegam and Inigo (1999) observed that finance is an important input for an industry. In India, unlike in developed countries small scale industries are in infancy, because most of the SSI businesses are in most cases non-technical business. As the promoters of small scale industries are people of meager means, a basic weakness of

these industries is that they suffer from weak equity. They concluded that small industries with strong equity base performed well compared with SSI with weak equity base. It is to be noted that the SSI units with strong equity position could really contribute much to the economy in terms of providing more employment opportunity, increase in production and so forth. Therefore, it is suggested that more equity type of assistance has to be provided to SSI units in addition to normal type of loan assistance, which will strengthen the own fund position of SSI units. ...

Bandopadhyay (1999) pointed out that the Khadi and Village Industries Corporation (KVIC) has changed its financing pattern to project approach. But, it will not be suitable for the minimum educated small entrepreneurs as it demands the preparation of project report and the security norms of the banks. Moreover, the increased rate of interest will become an additional burden to the small units.

Shete (2000) pointed out that eventhough India has significant position in both the production and processing of fruit and vegetable it is limited to 1.6 percentage. Major problems for the growth of this industry are high cost of raw materials, poor infrastructure and outdated technology, more participation of corporates in production and transportation of products, absence of cold chains to preserve the produce, lack of sufficient funds and non-operation of contract farms. Lack of finance also makes small and medium sized units valuable. As agro processing projects are risky and because of the poor record of the companies, financial institutions or banks some times reject these proposals, but entrepreneurs are blaming failure entirely to the bank.

Chakravarthy (2000) pointed out that State Bank of India (SBI) started financing small scale industries in 1956 under the piolet scheme. Later SBI has introduced a number of new schemes for financing rural industries. However, the main source of finance for the development of industries in these project areas till 1969 was the central budgetary allocations which included grants and loans by the centre to the state for

sanction of advances under the state aid to Industrial Act. The State Bank of India played only a supporting role by financing industries set up in the project areas under its 'Liberalized scheme'. The units financed were comparatively larger in size and were required to comply with the usual requirements of providing margins, maintenance of proper books of accounts etc.

Sharma (1990) emphasised that small scale industries can play a significant role in the process of economic growth in the developing countries like India. His study examined the whole gamut of problems relating to production, labour, finance, marketing and exports of small scale industries. He also highlighted the role of various institutions and agencies in the development and working of small scale industries in the country.

Subbaraman (1991) opined that employment breeds poverty and that can be eradicated by spreading the network of village industries in every nook and corner of the country. Therefore, the job generating capacity of the village industries cannot be overemphasized.

Babu (1991), in his study opined that vital area which the small scale entrepreneur has to manage is finance. The entrepreneur has to give correct picture of the requirements regarding term loans and working capital in the project presented by him to the financial institutions. Also proper planning of sources and application of funds must be ensured by the entrepreneur to avoid financial deficiency of the unit.

Sharma (1991) observed that financial problem is the basic cause of industrial sickness in most of the units. The Government has taken steps to solve this problem by setting up the Industrial Reconstruction Bank of India. Also comprehensive schemes of liberal finance to small scale industries should be designed to overcome the problem of non-availability of finance. He recommends that guidelines should be issued to financial institutions especially commercial banks to avoid delay in sanctioning of loans.

Pandit (1996) pointed out that high incidence of the closed units is a very disgusting feature of our otherwise fast growing small scale industrial sector. One of the dominant causes identified for the closure of units is lack of finance. The financial sector reforms, especially of the capital market are easing the constraints in the availability of working and fixed capital. Export market can be tapped efficiently by the small sector if effective steps are initiated.

Toor (1995) suggested that if the banks want to see their small scale industries loan accounts performing, the extension of factoring services should be taken upon a priority basis which could prove to be a supporting finance activity since that will take care of the largest component (receivables) of working capital requirement of units, which quite often under financed by banks for variety of reasons.

Rajendra *et al.* (1995), in their study attributed the success of any small scale unit on timely and adequate availability of finance. Small entrepreneurs especially in the rural areas, do not have adequate resources of their own and have no access to raise capital in the market. Government policy treats small scale industries sector as a priority sector for being provided with credit by banks and financial institutions. Commercial banks, co-operative banks and RRB's provide short term loans and meet the working capital requirement of small scale industries unit.

Rao (1994) pointed out that the interest on the part of banks in assisting sick small scale industries units or extending credit facilities to new small scale industries units is sharply dwindling. The reason behind this is that the bankers do not want to add further to the existing figures of non-performing assets. The solution lies in enforcing accountability for not nursing a viable unit in time.

Arora (1992) opined that the commercial banks have entered the field to provide credit facilities to the small scale units in a big way. The commercial banks have adopted a liberalised approach, the cardinal feature of liberalised approach being the need based



credit. In view of various handicaps and difficulties that the small scale units have to face the banks are now making relaxation in the terms and conditions of the loan wherever necessary.

Ramamurthy *et al.* (1991) in their study conducted in the twin cities of Hyderabad and Secunderabad disclosed certain problems affecting small scale units. Security demanded by the banking and non banking institutions is one of the problems which lead the people to the money lenders. Also the SSI units face difficulties in complying with repayment schedules for the loans taken from financial institutions. The problem of lack of finance is reported by the units in all ranges of investments .

Ray (1986) brought forward the fact that small industry gets elbowed out by the large and medium scale industries in the procurement of bank finance and institutional credit. Compared to the large scale sector, the requirements of the cottage, rural and small industrial sector is proportionately small. Even around 10 percent of the total investment in the former would be more than adequate. Further he pointed out that this cannot be achieved except by specific assignment of investment capital for this sector by the government through co-operatives, commercial banks, including nationalised banks and different financial institutions.

Kalchetty (1989) in his study observed that 30 percent of the units, did not approach any financial institution for finance because of complicated procedures and numerous documents which had to be submitted along with the application. He also observed that 48 percent of the units did not face any problem in getting finance from financial institutions except delay in release of funds, complicated procedure and lack of knowledge of the officers in-charge of projects.

## Repayment aspects

Review regarding the financial crises faced by small scale units, Rondinell (1979) stated that rare entrepreneurs face various problems in establishing themselves and surviving in developing nations. He added that the units finance their activities from family savings or credit obtained at high interest rates through money lenders. Small entrepreneurs were deprived of technical assistance and managerial advances due to lack of resources.

Wali (1980) found that a large part of overdues is due to willful default which is committed quite often by the upper class of farmers. He also pointed out that magnitude of Non Performing Assets (NPAs) was lowest with agricultural labourers when compared to small, marginal and large farmers.

Kilam and Katuria (1990) observed that the importance of small scale industries lies in channelising entrepreneurial talent, generating employment and promoting economic growth with economic decentralisation. But lack of availability of finance hinder the growth of SSI. Even after getting strict direction from RBI, there are complaints from the SSI entrepreneurs that banks generally make delay in the sanction of working capital limits and also that the limits sanctioned are not sufficient enough and need based. In future, the banks have an important role to play in strengthening SSI. They should develop themselves not only as financiers but also professionalise themselves as experts in understanding economy as a whole and industry in particular.

Sharma (1990) emphasized that small scale industries play a significant role in the process of economic growth in the developing country like India. He provided an indepth account of the problems and prospects of an important and fast growing segment of small scale industries in India namely, the sports goods industry. The study examines the whole gamut of problems relating to production, labour, finance, marketing and exports. It also highlights the role of various institutions and agencies of this industry.

Rao and Sathyanarayan (1991) while analysing the factors influencing the repayment behavior pointed out that education, annual income, socio-economic status, land holding and irrigation potentiality are the crucial variables that influence the repayment behavior of the borrowers.

Rao (1994) in his study pointed out that small scale industry face difficulties in complying with the repayment of schedules for the loans taken from the financial institutions. The units surveyed were of the opinion that the repayment is too short which leads to increased rate of overdues in the SSI sector.

Toor (1995) reported in a study on the working capital problems of small scale industries and argues that the most important reason for the failure of small scale industrial units has been considered to be finance.

Sharma and Khan (1995) in their study revealed that Non Performing Assets (NPAs) tend to increase with the size of holding. The large farmers are causing more chronic NPAs. However, the large and medium farmers are reluctant to repay the loans, inspite of having adequate financial base.

Mazood (1997) opined that most of the SSI units are running at a loss. Over dues of the industrial loans is increasing over the years. The major reason for non-repayment is the low income from the project. He also pointed out that the repayment performance over the years does not show any progressive implication on the part of the bank.

Rajeev (1998) concluded in his study on food processing industry that the fruit and vegetable processing industry has good prospects in the future as it is possible to absorb more labourers with lesser amount of capital as the capital labour ratio of this industry is lowest. He also visualised finance as a major problem faced by this industry due to its seasonal characteristics. As commercial banks are reluctant to lend huge funds

for working capital needs of this industry, the units find difficulty in the procurement of raw-materials during harvest season.

Kar (1999) in her study attempted to assess the repayment capacity of SSI units with the help of some financial ratios. The important factors which determine the repayment of small scale industrial loans are level of inventory working capital usage, amount of debt and equity. Some borrowers may not repay the loan because of the availability of loans at concessional interest rate. There are defaulters with willfull nature and default by creditworthy customers because of unforeseen circumstances. So, the banks must identify the type of borrowers before lending the amount.

To sum up, review of literature pinpointed the importance of processing industries in the economy. The huge production base and post-harvest losses add to the need for setting up of more processing units. Studies on financing of small scale industries throw some light on the need for finance to these industrial units and the present status of finance given to this sector. But specific studies on financing of fruit and vegetable processing industry are conspicuous in their absence. Thus the review of literature identifies a gap of empirical studies in the field of financing of agro-processing in general and fruit and vegetables processing in particular.

## Materials and Methods

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## CHAPTER III

### MATERIALS AND METHODS

The analysis of various aspects of agro-processing industries has significance in this liberalised environment. The role played by banks and other financial institutions in the industrial development of the state is also important in a developing country like India. In order to analyse the role of fruit and vegetable processing industry, profitability analysis is required because the profitability and repayment of loans are inter-related. As finance is the basic need of any business activity, the financing patterns of fruit and vegetable processing industry is also to be analysed. So, the present study attempts to analyse the financing pattern of the units and also to examine the factors influencing the repayment behaviour of the selected units. The focus of this chapter is to explain the terms/concepts and to discuss the methodology adopted for analysing the performance of fruit and vegetable processing units. The chapter is divided into two parts, the first part deals with the conceptual frame work and the second part gives a detailed methodology used for the study.

#### **3.1. Conceptual frame work**

The economics of the fruit and vegetable processing units is discussed with the help of Annual Survey of Industries (ASI) methodology conventionally used for studying these types of units. The terms and concepts used for analysing the financing of fruit and vegetable processing industry in Kerala is discussed below:

##### ***i. Working capital***

Working capital means the fund used for day-to-day operations of the business. The textual meaning of the working capital can be defined in two views: Net working capital and gross working capital. Net working capital means the difference between the current assets and current liabilities. Gross working capital is the aggregate of current assets in the business. Here in our study, working capital is defined as the total of current assets.

## ***ii. Fixed capital***

Fixed capital represents the value of fixed assets owned by the business units as on the closing day of the accounting year. Fixed assets include land and building, plant and machinery, vehicles, furniture and fixtures etc. Strictly speaking, while calculating fixed capital, depreciation is also to be accounted. But, majority of the units were started years back and hence depreciation in the value of fixed assets is not considered.

## ***iii. Productive capital***

Productive capital is the total of fixed capital and working capital. This is the total funds invested in the business.

## ***iv. Invested capital***

Invested capital is the total of fixed capital and physical working capital. Physical working capital includes the total of raw materials, semi-finished goods and finished goods. This gives the total amount of capital used for the actual production.

## ***v. Cost of production***

It is the sum total of input costs, wages, salaries and other establishment expenses.

## ***vi. Raw materials***

Fruits and vegetables are major raw materials used in this industry. The other raw materials used for processing and preservation include sugar, preservatives, chilli powder, ginger, mustard, asafetida, oil etc. Labour, water, electricity, fuel, packing materials like bottles, tins, caps and labels are also required for the operations of the processing units.

## ***vii. Products***

Processed items or finished goods of processing units are termed as products.

### *viii. Profitability*

Profitability is the effectiveness or efficiency with which the operations of a business is carried on. Basically it is a concept based on profits. Since it is a relative concept, profits are expressed as a rate or as a percentage to total assets or sales. Profitability is different from profit because it does not reveal how much is earned rather it deals with how efficiently earning is done.

### *ix. Profit*

Here we consider gross profit as profit.

### *x. Product mix*

The product mix is the full list of all products offered for sale by a processing unit.

### *xi. Processing unit*

The processing factory or concern is termed as a unit.

### *xii. Value added*

Value added by manufacturer is a measure of relative importance of the industrial sector in the state's national economy. It is also a measure of the relative importance of a particular unit within the industrial sector itself.

Value added is defined as the difference between the value of output and input. In other words, value added is the sum total of further income such as wages, interest, rent and profits. Fruit and vegetable processing industry is highly labour intensive and the relative size of value added will be more.

## **Methodology**

The methodology of the study is divided into two parts, (a) data collection and (b) data analysis.



### *Data collection*

#### *Study period*

The period of the study was from November 2001 to October 2003. The data collection were done during May-June 2003. The data for five years from 1998 to 2002 were collected for the purpose of study.

#### *Sampling procedure*

The study was conducted among the licensed fruit and vegetable processing units in Thrissur district, which ranks first in the case of number of fruit and vegetable processing units in Kerala. Therefore, Thrissur district was selected as the study area. There are 38 fruit and vegetable processing units in Thrissur district. Twenty five percent of such unit (10 units) were selected for the study. The units were selected on random basis.

#### *Data collection*

The study made use of both primary data and secondary data. Primary data were collected from the selected units with a pre-tested structured schedule. The secondary data were collected from the banks from where these units have taken loans. The following variables were used for collecting data:

1. Investment at the time of establishment
2. Working capital finance
3. Details of assets and liabilities
4. Financial parameters like total raw-materials, labour, other expenses, total costs, sales and profits etc.
5. Working capital limits
6. Opinion about bank finance
7. Amount repaid
8. Problems faced by processing units
9. Value added

10. Installed capacity and capacity utilization
11. The nature and extent of loans availed by the units – institution-wise and quantum-wise
12. Terms and conditions of loans
13. Monitoring practices
14. Items of fixed and variable costs
15. Repayment schedules and repayment procedures

### *Analysis of data*

The data collected from the ten selected units were analysed by using simple arithmetic techniques like averages, percentages, ratios etc. The ratio analysis used in our study is taken from the annual survey of industries methodology. The following ratios are calculated for analysing the data.

- |   |                                 |
|---|---------------------------------|
| 1. Fixed capital/invested capital ratio   | 11. Value added/input ratio     |
| 2. Fixed capital/productive capital ratio | 12. Inventory/sales ratio       |
| 3. Fixed capital output ratio             | 13. Working capital/sales ratio |
| 4. Invested capital/output ratio          | 14. Profit/equity ratio(ROE)    |
| 5. Value added/invested capital ratio     | 15. Debt equity ratio           |
| 6. Input/invested capital ratio           | 16. Returns on investment       |
| 7. Output/invested capital ratio          | 17. Profit margin               |
| 8. Input output ratio                     | 18. Current ratio               |
| 9. Output input ratio                     | 19. Output capital ratio        |
| 10. Value added/output ratio              | 20. Capacity utilisation        |

The opinion of the entrepreneurs was collected with the help of seven statements. The statements are given valued of 5, 4, 3, 2 and 1, which represented the most positive degree to the most negative degree of opinion. The maximum score obtainable for a statement was 50. The scores of all the respondents for each statement under each head were summed up first to arrive at the total score of each statement. The total score of each

statement was then divided by the maximum possible score to derive the index for that statement. The formulae used for calculating index is given below:

$$\text{Index of each statement} = \frac{\text{total score of that statement}}{\text{Maximum score}} \times 100$$

The formulae employed for calculating the composite index is given below:

$$\text{Composite Index: } \frac{\sum x}{m \times n \times s} \times 100$$

where,

$$\begin{aligned} \sum x &= \text{Sum of the total score of all entrepreneurs} \\ n &= \text{number of respondents} \\ s &= \text{number of statements} \\ m &= \text{maximum score} \end{aligned}$$

Subsequently the scores of each statement was converted into different health zones as Excellent (75 – 100), Good (50 – 75), Average (25 – 50) and Poor (0 – 25). The evaluation of the statements were done on the basis of these different health zones.

## Results and Discussion

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## CHAPTER IV

### RESULTS AND DISCUSSION

India is one among the many important fruit and vegetable producing countries in the world. According to Food and Agriculture Organisation (FAO) estimates, India accounts for over eight percent of the fruit and vegetable production of the world. Even with second largest position in the production, India processes only less than four percent of the total production. The Prices of various agricultural products like fruits and vegetables are coming down drastically. So, the accent should be shifted gradually from primary to processed fruits and vegetables to help the farmers. Moreover, in the present high tech society, the demand for processed products especially ready to eat food products is increasing gradually.

One of the important requirements for starting a new venture is finance. Kilan (1990) in his study reported that banks generally deny to sanction the loan to new processing units considering its risk factor. Jyothirmayee Kar (1990) concluded that the repayment of small scale industrial loans is not satisfactory.

In the present chapter, an attempt is made to analyse the extent and pattern of institutional finance to the selected units, the important factors influencing the repayment behavior of the units and also important problems experienced by the units. Profitability is one of the important factors influencing the repayment of the units which is determined by the cost of production.

As mentioned just now the objectives of the present study are to analyse the extent and pattern of institutional finance to fruit and vegetable processing units and also to examine the factors influencing the repayment behaviour of the selected units. But these objectives can be examined only if we have a very clear idea about the economics of the units. Practical wisdom suggests that one of the important determinants which necessitates finance and its repayment is the entire financial dynamics behind its working. Thus the analysis is systematically developed starting with general profile.

- 1) Profile of the selected units.
- 2) Extent and pattern of institutional finance.
- 3) Factors influencing the repayment behavior.

Out of the 32 fruit and vegetable processing units, 10 units are taken for the detailed study. A profile of these 10 units form the first part of this chapter. The second section analyses the first objective of the study i.e.. analysing the extent and pattern of institutional finance to the units. The factors influencing the repayment behaviour of the selected units which is the second objective of the study is analysed in the last section.

### **GENERAL PROFILE OF THE UNITS**

Ten fruit and vegetable processing units have been selected for the study comprising Kalyan Products (A), Sagara Food Packers (B), Canning Industries Cochin Ltd., (C), Naveen Food Products (D), Home Made Food and Spices (E), Premier Food Products (F), Narassu Food Products (G), Devi Pickles (H), New Komala Food Products (I), and Premiers Food Products (J). The profile of these units is given in the ensuing paragraphs.

#### ***a) Installed capacity of the units***

The sample firms are classified on the basis of installed capacity as done by the Ministry of Food Processing Industries (Table 4.1.). The four categories are as follows :

- a) Home Scale Units (HSU) - producing less than ten tonnes of processed fruit / vegetable yearly.
- b) Cottage Units (CU) – produce in the range of 10-50 tonnes per annum.
- c) Small Scale Units (SSU) - producing 50-150 tonnes per annum.
- d) Large Scale Units (LSU) - producing more than two hundred and fifty tonnes per year.

Table 4.1 Installed capacity of the selected units

SL No.	Units	Installed Capacity (Tonnes)	Scale of units
1	A	10,000	LSU
2	B	5	HSU
3	C	3,000	LSU
4	D	50	SCU
5	E	8,000	LSU
6	F	36	CU
7	G	50	SCU
8	H	25	CU
9	I	40	CU
10	J	28	CU
Total		21,234	

Source : Books and accounts of sample units

In our study, it is clear from table 4.1 that four units come under cottage units (40 percent). Small scale firms constitute twenty percent of the total (i.e. two units) and three units come under large scale category. Only one unit is classified under home scale unit. This revealed that substantial percentage of the sample firms are small or tiny.

#### b) Ownership pattern

The fruit and vegetable processing units can be classified on the basis of ownership into proprietary, partnership, co-operative society, company and Government owned units. Table 4.2 shows the ownership pattern of the selected units.

Table 4.2 Pattern of selected units

Type of ownership	No. of units	Percentage to total
Proprietary	9	90
Company	1	10
Total	10	100

Source : Books and accounts of sample units.

From table 4.2, it can be observed that majority of the sample firms are proprietary firms (90 percent). The remaining one firm is a public limited company. This showed that proprietary form of business is more suitable for fruit and vegetable processing industry.

**c) Year of establishment**

The sample units were grouped on the basis of year of establishment and the result is presented in table 4:3.

Table 4.3. Year of establishment of selected units

Year	No. of units	Percentage to total
1940 - 1950	1	10
1950 - 1960	-	-
1960 - 1970	3	30
1970 - 1980	2	20
1980 - 1990	2	20
1990 - 2000	2	20
Total	10	100

*Source : Books and Accounts of sample units*

It can be seen from the table that majority of the firms were established after 1960 - as out of ten units, nine (90 percent) were established after 1960. The reason may be the increased demand for processed fruit and vegetable products in the state.



#### ***d) Location of the sample firms***

The important factors which influence the location of the factories are (a) cheap labour, (b) availability of raw materials, (c) proximity to markets, (d) facilities for the despatch of finished goods etc. (Hoff man, 1958). Besides these, historical factors also play an important role.

On the basis of the location, the sample firms are grouped as rural and urban. Out of the 10 units selected, six are in rural areas and the remaining four are in urban areas. Thus it can be seen that fruit and vegetable processing firms preferred rural areas to set up units rather than urban areas. The main reason pointed out was that easy availability of cheap labour.

#### ***e) Registration status of the firms***

The sample firms are all registered as per the norms of the F.P.O order 1955 which is controlled by the Ministry of Food Processing Industries. At the same time, all units were not registered under the Factories Act, 1948. Only three units (30 percent) out of ten were registered as factory units. From the survey, it was clear that large scale units were registered as factory units. So, we may conclude that the majority of the units of fruit and vegetable processing industry in Kerala are outside the purview of factories Act, 1948.

#### ***f) Profile of the entrepreneurs***

An examination of the profile of entrepreneurs with regard to age, sex, education and religion assumes significance. Though the number of firms were ten, one unit is excluded as it belongs to the category of public limited company. The age-wise distribution of the entrepreneurs of the sample units is presented in Table 4.4.

Table 4.4. Age group of the entrepreneurs of selected units

Age group (years)	No of units	Percentage to total
31-40	2	23
41-50	4	44
51 and above	3	33
<b>Total</b>	<b>9</b>	<b>100</b>

Source : Field data

From table 4.4, it can be seen that the entrepreneurs spread in all age group. 77 percent of the entrepreneurs belonged to the age group of 41 and above only two entrepreneurs were included under the young group of below 40 years.

### *Educational Qualifications of the Entrepreneurs*

The educational qualifications of the entrepreneurs assume significant importance in the working of fruit and vegetable processing units which is exhibited in Table 4.5.

Table 4.5. Educational qualifications of the entrepreneurs of sample units

Qualification	No. of units	Percentage to total
Primary	-	-
Secondary	5	56
Graduation & above	4	44
<b>Total</b>	<b>9</b>	<b>100</b>

Source : Field data

From table 4.5. it can be observed that all the entrepreneurs are educated though there are variations in their levels of educational levels. The table also revealed that while fifty six percent of the entrepreneurs are having school education, 44 percent (4 units) has completed their graduation. One entrepreneur in the sample units has PG Diploma in Food Technology, six entrepreneurs had attended short term training course in Food Technology conducted by Small Industries Service Institute (SISI) and District Industries Centre (DIC). From this, it is evident that educated persons with entrepreneurial ability are coming forward to start fruit and vegetable processing units as a means of self employment.

### *Religion*

Religion-wise distribution of entrepreneurs of the sample units is presented in Table 4.6.

Table 4.6 Religion-wise distribution of the entrepreneurs of sample units

Religion	No. of entrepreneurs	Percentage to total
Hindu	4	44
Muslim	-	-
Christian	5	46
Total	9	100

From table 4.6. we can see that Christians account for largest share ie. 55 percent. Even though, Hindus account for more than 60 percent in Kerala's population, their share in fruit and vegetable processing industry is only 44 percent. None of the sample units was started by Muslim entrepreneurs. Thus, we can conclude that the Christian entrepreneurs dominate in the fruit and vegetable processing industry.

## **B) EXTENT AND PATTERN OF INSTITUTIONAL FINANCE TO FRUIT AND VEGETABLE PROCESSING UNITS**

The important requirement for starting a new venture is finance. Running the day to day operations of the business is also impossible without finance. In the development of small scale industrial units, financial institutions like banks play a commendable role. It is often apprehended by the institutional financiers that lending to Small Scale units is risky. In such cases, either finance is not provided at all or if provided, only in limited quantity at a delayed time and on disadvantageous terms and conditions. Restricted access to finance not only erodes profitability of any enterprise but also checks a number of viable and profitable projects from being undertaken. Most of the small scale units are started with low fixed capital investment, often financed from own savings or borrowings from other sources. In most of the cases, the real problem is how to meet the working capital requirements which is more than half of the investment needs. Institutional finance given to the selected units is discussed in this section.

### ***a) Finance at the time of establishment***

For the establishment of every unit one important and basic requirement is finance. Entrepreneurs use their own funds and loans and advances from banks and other financial institutions for establishing and running business. In general, the sources of funds for the establishment of business can be divided into own funds and borrowed funds which is exhibited in table 4.7.

From table No. 4.7, we can infer that the share of borrowings in total funds is less compared to own funds in the case of majority of units. The average borrowings come only 38 percent of total funds; the rest 62 percent is own funds. The second, seventh and ninth units are using only their own funds for business.

Table 4.7 Sources of funds at the time of establishment of selected units

Units	Own funds	Borrowed funds		Total
		Loans from banks	Loans from others	
A	9.9 (45)	3.38 (15)	9.0 (40)	22.5 (100)
B	3.54 (100)	-	-	3.54 (100)
C	24 (85)	4.2 (15)	-	28.2 (100)
D	4.34 (70)	1.86 (30)	-	6.2 (100)
E	10.78 (55)	4.9 (25)	3.92 (20)	19.6 (100)
F	1.197	1.17	4.85	2.85 (100)
G	4 (100)	-	-	4 (100)
H	0.25 (10)	2 (80)	0.25 (10)	2.5 (100)
I	2.80 (100)	-	-	2.80 (100)
J	1.59 (26)	1.035 (46)	0.63 (28)	2.25 (100)
Average	5.79 (62)	38 (2.2)	1.43 (10)	93.64 (100)

Source : Books and accounts of the selected units  
Note : Figures in parenthesis show percentages to total

Many of the selected units were started in early 1970's and 80's. The units were set up by joint families with sound financial status. Moreover, banking facilities were not developed to that extent. One unit started with the retirement benefit from the employment. So the borrowing was less compared to own funds. Another important reason was that the units were small when they set up compared to their present size, which limited the requirement of capital.

### b) Working Capital Finance

The capital of a business unit can be divided into fixed capital and working capital. Working capital is necessary for running the day to day business of the firm. Working capital can be defined as the total of current assets and it includes cash in hand, cash at bank, stock, debtors less current liabilities such as creditors, bills payable etc. The units depend on commercial banks for their working capital finance. Working capital finance is available in the form of cash credit, key loan facilities, overdraft and other short term

loans. All the units selected were availing working capital finance in the form of cash credit from different public sector banks. The details of working capital finance availed by different units is expressed in table No. 4.8

Table 4.8 Details of working capital finance of selected units

				Rs. in Lakhs
Units	Working Capital Limits	Average use	Type of security	Name of Banks
A	6	3.8	Property	SBT
B	1	0.3	Stock	SBT
C	19	Nil	Land	Canara bank
D	2	1.8	Land	SBI
E	4	2.2	Property	Canara bank
F	4	5.0	Property	IOB
G	7	4.5	Land	SBT
H	1	0.6	Land	PNB
I	4	1.5	Land	Canara Bank
J	2	2.6	Land	SBT
A	6	3.8	Property	SBT

Source : Field data

From table 4.8 it is clear that for working capital, units depend mainly on public sector commercial banks. In the opinion of the units, working capital finance is not a problem as finance is getting adequately. But, there is no full utilisation of working capital limit. The main reason for this was the seasonality factor. The season for the fruit and vegetable processing units is from January to April. During this period, units draw complete limit in cash credit account for the procurement of raw materials. Then they repay it after the sales. Therefore, while taking the average utilisation of the working capital limit, there is no full utilisation of the limit sanctioned.

The security for the working capital finance is mainly title deeds of lands and other properties. Only one unit has taken loan on the security of stock of materials.

*c) Availability of Working Capital Finance*

Working capital finance is the major problem faced by the small scale units especially the adequacy of the limit. Table 4.9 depicts the adequacy of working capital finance. The working capital worked out for the units is compared with the working capital limit sanctioned to the units.

Table 4.9 Availability of working capital of selected units

			<i>Rs. in Lakhs</i>
Units	Working capital required	W.C. limit sanctioned	Percentage to total
A	12.90	6	47
B	1.63	1	61
C	55.24	19	34
D	3.30	2	60
E	10.32	4	40
F	6.0	4	66
G	13.49	7	54
H	2.6	1	38
I	6.74	4	59
J	4.80	2	42

*Source : Books and accounts of the units*

From table 4.9, it is clear that more than 50 percent of the working capital is financed by the banks in the case of five units. The rest of the working capital is financed by the own funds or long term liabilities. One unit in the sample has not availed any amount as working capital loan even with a cash credit limit of Rs.19 lakhs.

**d) Investment And Financing Pattern**

The total productive capital of a unit is divided into two components; fixed capital and working capital. Working capital here means the total of current assets. Table 4.10 depicts the investment pattern of the selected units.

Table 4.10 Structure of productive capital of the selected units

Units	(Rs. in lakhs)				
	Fixed capital	Percentage to total	Working capital	Percentage to total	Total capital
A	27.93	68	12.90	32	40.83
B	1.00	38	1.63	62	2.63
C	16.80	23	55.24	77	72.04
D	9.5	75	3.30	25	12.55
E	22.34	68	10.32	32	32.66
F	15.45	72	6.00	28	21.45
G	14.09	51	13.49	49	27.58
H	5.2	66	2.60	34	7.80
I	7.05	51	6.74	49	13.79
J	12.36	72	4.80	28	17.16

*Source : Books and accounts of the units*

From table 4.10, it is clear that the share of fixed capital in the industry as a whole constituted about 53 percent and the working capital accounted for forty seven percent. Thus the share of fixed capital in the total capital is higher than the working capital. The share of fixed capital is higher in large scale units when compared to small scale units. Major reason for this is that large firms are capital intensive while small units are labour intensive.



### e) Financing Pattern

The total capital and liabilities of the units can be divided into own funds, investment subsidy and borrowed funds (debit). Own funds of the proprietary units are capital brought by the entrepreneurs. Borrowings are mainly from banks, other private institutions and from friends and relatives. Investment subsidy is availed from Government, Khadi and Village Industrial Corporations etc. Table 4.11 presents the financing pattern of the selected units.

Table 4.11 Financing pattern of the selected units

Units	(Rs in lakhs)			
	Own funds	Investment subsidy	Borrowed capital	Total capital
A	10(44)	0.5(2)	12(54)	22.50 (100)
B	3(77)	0.54(14)	35(9)	3.89 (100)
C	24(79)	1.5(5)	5.0(16)	30.50 (100)
D	3.00(48)	0.20(3)	3.0(49)	6.20 (100)
E	8.00(44)	0.51(3)	9.6(53)	18.11 (100)
F	2.00(41)	0.31(6)	2.62(53)	4.93 (100)
G	5.00(44)	0.42(9)	6.5(47)	11.50 (100)
H	2.4(47)	0.48(9)	2.5(44)	5.16 (100)
I	2.5(42)	0.21(4)	3.3(54)	6.01 (100)
J	2.00(43)	0.26(6)	2.4(51)	4.66 (100)
Total	61.9(54)	4.73(4)	47.27(42)	113.90 (100)

Source : Books and accounts of the units.

Note : Figures in parenthesis show percentages to total

It is clear from the table that the highest share of finance was from own funds, [54 Percent]. But if we exclude one unit from the list (Unit C), borrowed funds will be high when compared to own funds, (60 Percent). The unit excluded was started by collecting

share capital from the public as it is incorporated as a company under The Companies Act. Thus it is evident that the industry relied heavily on debt as a means of financing the processing operations in the state.

*f) Composition of fixed capital of the sample units*

The fixed capital of the units consists of investment in land and Building, Plant and Machinery and other fixed Assets. Table 4.12 gives the structural composition of the fixed capital for the selected units.

Table 4.12 Composition of fixed capital of sample units

Rs. in lakhs

Units	Land	Building	Plant and Machinery	Other fixed assets	Total
A	8(35)	4.32(19)	9.64(42)	0.90(4)	22.86(100)
B	-	-	0.50(33)	1.00(67)	1.5(100)
C	1.5(17)	4.00(24)	10.00(60)	1.16(7)	10.66(100)
D	0.75(8)	4.00(42)	2.00(21)	2.7(29)	9.45(100)
E	6.4(35)	3.45(19)	7.71(42)	0.81(4)	18.37(100)
F	1.00(6)	8.0(52)	5.00(32)	1.45(10)	15.45(100)
G	4.00(28)	6.00(42)	1.23(9)	3.16(22)	14.39(100)
H	0.50(10)	3.00(58)	1.50(28)	0.20(4)	5.2(100)
I	3.2(27)	4.80(42)	0.98(8)	2.75(23)	11.73(100)
J	0.80(7)	6.40(52)	4.00(32)	1.16(9)	12.36(100)
Total	26.15(20)	43.97(34)	42.56(34)	15.29(12)	129.70(100)

Source : Books and accounts of units

Note : Figures in parenthesis show percentages to total

From table 4.12, it is evident that the fruit and vegetable processing industry utilised the highest share of fixed capital [34 Percent] for purchasing building and plant

and machinery and the lowest share [12 Percent] in other assets which include furniture and other equipments. The large scale units like unit A, C and E, utilized the highest percentage of fixed capital for procuring plant and machinery where as the small units like unit B, G and I, utilised lower share of their fixed capital for investing in plant and machinery. The second largest share [20 Percent] is invested in land.

**g) Constituents of working capital**

Working capital consists of physical working capital (That is stock of raw materials, finished goods and semi-finished goods), cash in hand , cash at Bank and the amount to be received from debtors. The division of working capital into these three components are presented in table 4.13.

Table 4.13. Working capital position of selected units

Rs. in lakhs

Units	Physical working capital	Cash in hand	Debtors	Total
A	10.30(79)	2.6(20)	0.20(1)	13.1(100)
B	0.75(67)	0.1(9)	0.28(24)	1.13(100)
C	25.29(48)	16.59(32)	10.77(20)	52.65(100)
D	2.00(75)	0.40(15)	0.25(10)	2.65(100)
E	3.34(59)	2.08(36)	0.26(5)	5.68(100)
F	2.25(42)	1.50(19)	1.5(19)	5.25(100)
G	2.56(38)	3.76(55)	0.48(7)	6.8(100)
H	1.50(75)	0.30(15)	0.20(10)	2.00(100)
I	2.04(37)	3.06(56)	0.39(7)	5.49(100)
J	1.80(43)	1.20(29)	1.20(28)	4.20(100)
Total	51.83(52)	31.59(32)	15.53(16)	98.95(100)

Source : Books and account of units  
 Note : Figures in parenthesis show percentages to total

From table 4.13 it is clear that on an average that fruit and vegetable processing industry utilised about Rs.9.9 lakhs as working capital. The highest share [52 percent] of this was the physical working capital and the lowest share was the debtors (16 percent). Physical working capital constitutes the highest share in large scale units and cash in hand and cash at bank is more in small units when compared to large units. The amount to be received from debtors is more in small units when compared to large units. This implies that the smaller firms have to rely more on credit sales than large firms.

From the above analysis, we may conclude that bank finance is getting adequately and timely in the fruit and vegetable processing industry. The important requirement for the unit is working capital finance. All the units selected are availing working capital finance in the form of cash credit. There is under utilisation of working capital finance as the units are not drawing the entire limits through out the financial year. None of the selected units did not avail long term loans during the study period. So, the availability of finance is not a serious problem for these selected.

### **C. FACTORS INFLUENCING THE REPAYMENT OF LOANS**

It is often apprehended by the institutional financiers that lending to SSI units is risky due to default in repayment of loans. The non repayment of loans can be divided into two parts. One part arising due to default by credit worthy borrowers is because of certain unforeseen circumstances encountered by them like occurrence of loss in business and loss due to some natural calamities. The second part is willful defaulters. We cannot identify very precisely the factors which lead to non-repayment by willful defaulters.

All the selected sample units did not avail long term loans during the study period. As discussed in the previous part they availed only working capital finance in the form of cash credit. Hence, the question of non-repayment or default of long term loans does not arise in the case of these selected 10 units.

## 1. Cost structure and profitability analysis

Cost structure plays an important role in the success of a manufacturing unit. The important cost items are raw materials, labour charges, packing charges, chemicals, other inputs and other establishment costs.

### a) Raw materials

In the fruit and vegetable processing industry raw materials include fresh fruits, fruit juices, chemicals and other inputs like sugar, salt, oil etc.

### i) Fresh fruits

Out of the 10 selected units, eight units are producing fruit products like squash, fruit juices and jams. The major raw materials used by these units are fresh fruits. The important fruits processed by the units are mango and pineapple. Besides these, the units also process tomato, grapes and oranges. Table 4.14 gives the details of fresh fruits used by the selected units from 1998 to 2002.

Table 4.14 Fresh fruits used by the selected units

(Rs. in lakhs)

Units	1998	1999	2000	2001	2002	Total	Average
A	12.06(14)	14.8(18)	16.05(19)	18.00(21)	23.49(29)	8.40(100)	16.88
B	0.69(15)	0.85(18)	0.96(20)	1.29(27)	1.05(21)	4.82(100)	0.96
C	17.80(18)	18.28(18)	20.46(21)	26.95(27)	16.17(16)	99.66(100)	19.93
D	1.96(17)	2.00(17)	2.46(21)	2.44(21)	2.72(24)	11.58(100)	2.32
E	9.64(15)	11.84(17)	12.83(18)	14.39(22)	19.31(28)	69.73(100)	13.95
F	1.32(15)	1.60(18)	1.57(17)	2.13(24)	2.43(27)	9.05(100)	1.81
G	-	-	-	-	-	-	-
H	1.15(15)	1.48(19)	1.61(20)	1.80(23)	1.87(24)	7.91(100)	1.58
I	-	-	-	-	-	-	-
J	1.22(15)	1.44(18)	1.58(20)	1.78(22)	1.97(25)	7.99(100)	1.60
Total	45.84(16)	52.28(18)	57.51(20)	68.78(23)	69.01(24)	293.42(100)	58.68
Average	4.59	5.23	5.75	6.88	6.90	29.3	

Source: Books and accounts of selected units.  
Note: Figures in parenthesis show percentages to total

From table 4.14, it is clear that the average cost of the fresh fruits consumed by the industry has increased from Rs 4.59 lakhs in 1998 to Rs.6.90 lakhs in 2002. The cost of fresh fruits has increased in all the years for all the 10 units. The percentage increase is high in large units when compared to small units.

*ii) Cost of fruit juice concentrates*

Fruit production in Kerala is seasonal in nature. Small units have not the facilities of processing large quantity of fruits during the season. So, the units process the fruit juice concentrates for maintaining production throughout the year. Mainly they are procuring pineapple pulp and mango pulp. The cost of fruit juice concentrates of the selected units is given in table 4.15

Table 4.15 Cost of fruit juice concentrates

Rs. in lakhs

Units	1998	1999	2000	2001	2002	Total	Average
A	0.9(28)	0.6(18)	0.44(13)	0.9(25)	0.58(16)	3.42(100)	0.68
B	0.1(15)	0.12(18)	0.13(20)	0.14(22)	0.16(25)	0.65(100)	0.13
C	1.89(15)	1.96(16)	2.15(17)	3.29(26)	3.26(26)	12.55(100)	2.51
D	-	-	-	-	-	-	-
E	0.72(21)	0.48(14)	0.35(10)	0.72(21)	0.46(14)	3.45(100)	0.64
F	0.26(12)	0.46(22)	0.31(15)	0.49(23)	0.59(28)	2.11(100)	0.42
G	-	-	-	-	-	-	-
H	-	-	-	-	-	-	-
I	-	-	-	-	-	-	-
J	0.22(12)	0.36(20)	0.32(18)	0.42(23)	0.50(27)	1.82(100)	0.36
Total	4.09(18)	3.98(17)	3.70(16)	5.96(26)	5.55(24)	23.28	
Average	0.68	0.66	0.61	0.99	0.93	-	-

Source : Books and accounts of units  
 Note : Figures in parenthesis show percentages to total

From table 4.15, it is evident that the average cost of fruit juice concentrates in the industry increased from Rs.68 lakhs to Rs.93 lakhs. Out of the 10 sample units, only six units (37 per cent) are using fruit juice concentrates for the production. The cost increases in all the years in all six units.

### iii) Vegetables

An important raw material used by the fruit and vegetable processing industry for making pickles is vegetables. The important vegetables used by this industry are mango, lime, gooseberry, garlic, carrot and other vegetables. The cost of vegetables used by the sample units is given in table 4.16

Table 4.16 Cost of vegetables used by sample unit

							Rs. in lakhs	
Units	1998	1999	2000	2001	2002	Total	Average	
A	1.80 (29)	1.12 (19)	0.88 (14)	1.15 (19)	1.16 (19)	6.19 (100)	1.24	
B	0.11 (17)	0.12 (18)	0.13 (20)	0.14 (21)	0.16 (24)	0.66 (100)	0.13	
C	1.12 (7)	2.56 (15)	3.58 (21)	4.56 (27)	5.12 (30)	16.94 (100)	3.39	
D	0.60 (25)	0.68 (17)	0.80 (20)	0.90 (23)	0.96 (25)	3.97 (100)	0.79	
E	1.44 (29)	0.96 (19)	0.70 (14)	0.92 (19)	0.92 (19)	4.94 (100)	0.99	
F	0.20 (16)	0.22 (17)	0.25 (19)	0.30 (25)	0.32 (25)	1.29 (100)	0.25	
G	8.04 (16)	9.14 (18)	9.81 (20)	10.61 (21)	4.88 (25)	49.98 (100)	9.90	
H	0.28 (18)	0.29 (19)	0.30 (20)	0.32 (21)	0.33 (22)	1.52 (100)	0.30	
I	4.02 (16)	4.57 (19)	4.90 (20)	5.30 (21)	5.94 (24)	24.73 (100)	4.95	
J	0.18 (16)	0.20 (18)	0.22 (20)	0.24 (22)	0.26 (24)	1.10 (100)	0.22	
Total	17.79 (16)	19.94 (18)	21.58 (20)	23.58 (26)	27.05 (25)	109.94 (100)	21.99	
Average	1.78	0.99	2.16	2.36	2.71	10.99		

Source : Books and Accounts of the units  
 Note : Figures in brackets show percentage to total

From table 4.16 it is clear that the share of vegetables is high in two units which produce only pickles. Vegetables are mainly used in the units to produce pickles. The average cost of vegetables used in the industry increased from Rs.1.78 lakhs in 1998 to Rs. 2.17 lakhs in 2002.

#### iv) Chemicals

In order to retain the shelf life of the processed products chemicals are used in the fruit and vegetable processing industry. The important chemicals used by the industry are acetic acid, food colours, essences, potassium meta sulphate, Sodium benzoate, acetic acid, etc. Table 4.17 presents the cost of chemicals used in the units.

Table 4.17 Chemicals used by selected units

Units	Rs. in lakhs						Average
	1998	1999	2000	2001	2002	Total	
A	0.09 (30)	0.06 (20)	0.10 (33)	0.02 (7)	0.029 (10)	0.299 (100)	0.06
B	0.01 (20)	0.01 (20)	0.01 (20)	0.01 (20)	0.01 (20)	0.05 (20)	0.01
C	1.98 (15)	2.16 (16)	2.96 (22)	3.29 (24)	3.23 (24)	13.62 (100)	2.72
D	0.02 (13)	0.03 (20)	0.029 (19)	0.031 (20)	0.042 (27)	0.152 (100)	0.03
E	0.072 (19)	0.048 (12)	0.086 (22)	0.089 (23)	0.091 (24)	0.386 (100)	0.08
F	0.011 (28)	0.01 (25)	0.007 (18)	0.009 (23)	0.003 (8)	0.04 (100)	0.008
G	0.72 (18)	0.80 (20)	0.80 (20)	0.88 (21)	0.91 (22)	4.11 (100)	0.82
H	0.015 (38)	0.018 (45)	0.007 (18)	0.009 (23)	0.003 (7)	0.04 (100)	0.008
I	0.36 (18)	0.40 (19)	0.40 (19)	0.44 (22)	0.45 (22)	2.05 (100)	0.41
J	0.031 (14)	0.092 (41)	0.078 (35)	0.011 (5)	0.011 (5)	0.223 (100)	0.045
Total	3.23	3.63	4.48	4.76	4.78	23.66	4.73
Average	0.32	0.36	0.44	0.48	0.48	2.37	

Source : Books and Accounts of the units

Note : Figures in brackets show percentage to total



From table 4.17 we can infer that the average cost of chemicals used in the industry has increased from Rs.32,000 in 1998 to Rs.48,000 in 2002. The average cost of almost all the units are low except in unit 'C'. The percentage of chemicals to total cost in every year is around 20 percent. The main reason for the increase in cost of chemicals is the increase in the volume of output and also the rise in the price of chemicals.

### b) Other inputs

Cost of other inputs like spices, salt, sugar, oil etc used in the fruit and vegetable processing industry is exhibited in table 4.18

Table 4.18 Cost of other Inputs

Rs. in lakhs

Units	1998	1999	2000	2001	2002	Total	Average
A	0.18 (10)	0.20 (11)	0.66 (36)	0.48 (27)	0.29 (16)	1.81 (100)	0.36
B	0.27 (18)	0.28 (19)	0.29 (20)	0.31 (21)	0.32 (22)	1.47 (100)	0.29
C	0.89 (17)	0.98 (19)	1.06 (20)	1.08 (20)	1.28 (24)	5.29 (100)	1.06
D	0.081 (18)	0.082 (18)	0.099 (22)	0.092 (20)	0.096 (22)	0.45 (100)	0.09
E	0.14 (10)	0.16 (11)	0.52 (36)	0.38 (27)	0.23 (16)	1.43 (100)	0.29
F	0.022 (10)	0.026 (18)	0.072 (33)	0.062 (27)	0.033 (15)	0.215 (100)	0.04
G	0.12 (12)	0.18 (18)	0.23 (22)	0.22 (22)	0.27 (26)	1.02 (100)	0.20
H	0.06 (17)	0.066 (19)	0.079 (22)	0.073 (20)	0.077 (22)	0.355 (100)	0.07
I	0.06 (12)	0.09 (18)	0.12 (24)	0.11 (21)	0.13 (25)	0.51 (100)	0.01
J	0.022 (10)	0.026 (12)	0.072 (33)	0.062 (29)	0.033 (15)	0.215 (100)	0.04
Total	1.85 (16)	2.09 (18)	3.20 (28)	2.87 (25)	2.76 (24)	11.57	2.30
Average	0.18	0.20	0.32	0.28	0.28		

Source : Books and Accounts of the units  
 Note : Figures in brackets show percentage to total

From table 4.18 it is clear that the average cost of other inputs used by the industry increased from Rs.18,000 in 1998 to Rs.28,000 in 2002 with 55 percent increase. For all units except unit 'C', the average cost of other inputs stands less than one lakh rupee.

### c) Cost of packing materials

The Nature of packing and packaging plays an important role in the marketing of fruit and vegetable processed products. Good packing not only increases the shelf life of the products but also helps to attract the attention of the customers of the products. The important packing materials used in fruit and vegetable processing industry are glass bottles, plastic jars, cartons, caps, labels, plastic pouches etc. Pickles are mainly poured in glass bottles and pouches. Juices are packed in glass bottles which are arranged in cartons. Jams are packed in plastic tins and in glass bottles. Table 4.19 depicts the cost of packing materials used in the industry.

Table 4.19 Cost of packing materials used by sample units

Units	Rs. in lakhs						Average
	1998	1999	2000	2001	2002	Total	
A	0.36 (26)	0.20 (15)	0.27 (20)	0.24 (18)	0.29 (21)	1.36 (100)	0.27
B	0.55 (15)	0.65 (18)	0.72 (19)	0.89 (24)	0.90 (24)	3.71 (100)	0.74
C	6.52 (16)	7.98 (20)	8.12 (20)	9.65 (24)	8.17 (20)	40.44 (100)	8.08
D	0.34 (19)	0.36 (19)	0.38 (20)	0.40 (21)	0.40 (21)	1.88 (100)	0.38
E	0.288 (27)	0.16 (15)	0.21 (19)	0.19 (18)	0.23 (21)	1.08 (100)	0.21
F	0.44 (24)	0.26 (14)	0.48 (26)	0.31 (17)	0.33 (18)	1.82 (100)	0.36
G	1.44 (18)	1.60 (20)	1.68 (21)	1.50 (19)	1.62 (21)	7.84 (100)	1.57
H	0.27 (18)	0.28 (19)	0.30 (20)	0.32 (21)	0.32 (22)	1.49 (100)	0.30
I	0.72 (18)	0.80 (20)	0.84 (21)	0.75 (19)	0.81 (21)	3.92 (100)	0.78
J	0.44 (24)	0.26 (14)	0.48 (26)	0.31 (17)	0.33 (17)	1.82 (100)	0.36
Total	12.37 (19)	12.55 (19)	13.48 (20)	14.56 (22)	13.40 (20)	66.36 (100)	
Average	1.24	1.25	1.35	1.46	1.34		

Source : Books and Accounts of the units

Note : Figures in brackets show percentage to total

From table 4.19 it can be observed that with the increase in the size of the firm, the share of packing cost also increased. The principal reason for this difference in packing cost was that the smaller size units often use second hand bottles for packing which naturally reduces the cost of packing. Moreover, there are local sales in the case of small units which does not need costly packing. Large scale firms will never indulge in this type of practice which logically increases their packing cost. The average cost of these units was Rs.1.24 lakhs in 1998 which increased to Rs.1.34 lakh in 2002 with 8 percent increase which is only marginal.

#### d) *Employment pattern*

Labour is very crucial in any productive activity and assumes special significance in the case of fruit and vegetable processing industry as it is labour intensive in nature. The employment pattern of the selected units is exhibited in Table 4.20.

Table 4.20 Employment pattern of the selected units

Units	No. of male workers	% to total	No. of female workers	% to total	No. of total workers	No. of permanent workers	% to total	No. of casual workers	% to total	Total
A	5	11	40	89	45	30	66	15	34	45
B	2	33	4	67	6	2	33	4	67	6
C	2	3	66	97	68	60	88	8	12	68
D	2	10	18	90	20	6	30	14	70	20
E	4	11	35	89	39	20	51	19	49	39
F	1	10	9	90	10	4	40	6	60	10
G	1	9	11	91	12	4	33	8	67	12
H	1	15	6	85	7	3	42	4	58	7
I	1	17	5	83	6	3	50	3	50	6
J	1	13	7	87	8	3	37	5	63	8
Total	20	9	201	91	221	135	61	86	39	221

Source: *Books and Accounts of the units*

The ten selected units together give employment for 221 workers. The average number of workers for the industry as a whole is twenty two. We can also observe from the table that the share of permanent labourers is high when compared to casual/temporary labourers. The number of permanent labourers are more in large units while in small units casual labourers occupy highest share.

It is also relevant to classify the permanent and casual workers as male and female. The share of female workers was substantially higher, i.e. 91 per cent. In large scale firms as well as in small units, female workers are dominating. So, we may infer that the fruit and vegetable processing industry is gender biased. But all the entrepreneurs and managers of the units are males. The highest share of females was seen in processing operations and packing. But the share of females in administration is very low and it is very insignificant in the case of marketing.

#### *e) Labour charges*

Agricultural processing industries in general and fruit and vegetable processing industry in particular are labour intensive. 80 percent of the work in this industry is undertaken manually. Table 4.21 explains the details of labour charges incurred in the selected units.

Table 4.21 reveals that the average labour cost of industry is Rs.10.73 lakhs. Labour cost increased from Rs.1.84 lakhs in 1998 to Rs. 2.36 lakh in 2002. As it is a labour intensive industry, the labour cost constitutes 20 percent in all the units. There is less fluctuation in the case of labour cost among the units during the study period.

Table 4.21 Labour cost of selected units

Units	Rs. in lakhs						Average
	1998	1999	2000	2001	2002	Total	
A	3.24 (16)	3.60 (18)	4.33 (22)	3.84 (20)	4.64 (24)	19.65 (100)	3.90
B	0.69 (16)	0.78 (18)	0.85 (20)	0.98 (23)	1.02 (24)	4.32 (100)	0.86
C	5.15 (16)	5.62 (18)	6.98 (22)	7.28 (23)	6.42 (20)	31.45 (100)	6.29
D	0.95 (16)	0.98 (17)	1.10 (17)	1.44 (24)	1.44 (24)	5.91 (100)	1.18
E	2.59 (16)	2.88 (18)	3.46 (22)	3.07 (20)	3.71 (24)	15.71 (100)	3.14
F	0.68 (18)	0.70 (19)	0.73 (20)	0.75 (20)	0.82 (23)	3.68 (100)	0.74
G	2.59 (20)	2.60 (20)	2.66 (20)	2.66 (20)	2.68 (20)	13.19 (100)	2.64
H	0.60 (17)	0.65 (18)	0.70 (19)	0.80 (22)	0.85 (24)	3.60 (100)	0.72
I	1.29 (20)	1.30 (20)	1.34 (20)	1.33 (20)	1.34 (20)	6.60 (100)	1.32
J	0.60 (19)	0.62 (19)	0.64 (20)	0.65 (20)	0.74 (22)	3.23 (100)	0.65
Total	18.38 (17)	19.73 (18)	22.79 (21)	22.80 (21)	23.66 (22)	107.36 (100)	2.47
Average	1.84	1.97	2.28	2.28	2.37	10.73	

Source : Books and Accounts of the units

Note : Figures in brackets show percentage to total

### f) Total cost

The survival of any unit depends mainly on its profitability which in turn is determined by the cost incurred for production. Only profit making units can repay the loans promptly. Total cost of the units include, cost of raw-materials, wages, other inputs, packing cost etc. Table 4.22 shows the total cost incurred in the selected units from 1998 to 2002.

Table 4.22 Total cost incurred

Units	Rs. in lakhs						
	1998	1999	2000	2001	2002	Total	Average
A	18.63 (14)	20.66 (15)	22.73 (17)	24.59 (18)	30.47 (22)	135.71 (100)	27.14
B	4.52 (19)	4.32 (18)	3.99 (17)	5.38 (23)	5.25 (23)	23.46 (100)	4.70
C	85.52 (18)	86.68 (19)	91.51 (20)	102.13 (22)	99.61 (21)	465.45 (100)	93.09
D	4.55 (18)	4.61 (18)	5.13 (20)	5.19 (20)	6.22 (24)	25.70 (100)	5.14
E	14.90 (16)	16.52 (18)	18.18 (19)	19.67 (21)	24.38 (26)	93.65 (100)	18.73
F	2.34 (15)	2.84 (19)	2.75 (18)	3.48 (23)	3.89 (25)	15.30 (100)	3.06
G	14.40 (17)	16.00 (19)	16.80 (20)	17.60 (21)	19.20 (23)	84.00 (100)	16.80
H	2.70 (17)	2.82 (18)	3.05 (20)	3.45 (22)	3.56 (23)	15.58 (100)	3.12
I	11.52 (17)	12.80 (18)	13.44 (20)	14.08 (21)	15.36 (22)	68.40 (100)	18.68
J	2.13 (15)	2.53 (18)	2.79 (20)	3.14 (22)	3.55 (25)	14.14 (100)	2.83
Total	161.21 (17)	169.78 (18)	180.37 (20)	198.71 (22)	211.49 (23)	921.56 (100)	184.31
Average	16.12	16.98	18.04	19.90	21.15	92.16	

Source : Books and Accounts of the units

Note : Figures in brackets show percentage to total

From Table 4.22, it is clear that the total cost of production of the fruit and vegetable processing industry increased during the study period. The average cost increased from Rs.16.12 lakhs in 1998 to Rs. 21.15 lakhs in 2002. Over the reference period total cost increased by 31 percent. The total cost of all the units has increased during the year.

### g) Product Mix

Fruits and vegetable processing industry came into existence in India more than a century ago with the manufacture of traditional products like pickles, preservers,

chutneys etc. Over the years it has considerably grown and diversified by producing canned fruits and vegetables, jams, jelly, dehydrated products, fruit juices, squashes, syrups, soft drinks etc. The major processed items of the sample units are pickles, jams, juices, squash and jellies. Ninety per cent of the units produces pickles which is ranked first in the product mix. Eight units (80 per cent) produce fruit juices and squashes. The less produced item in the product mix is dehydrated fruits and vegetables, which is produced only by two units. 60 per cent of the units produced jams and jellies and three units produce sauces. Out of the ten sample units, the fast moving product of six units is pickles, especially tender mango pickle. The fast moving products of these units are mango, juice and mixed jams.

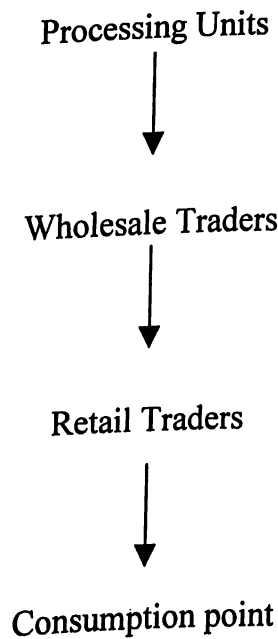
#### *h) Market of the products*

The main revenue source of an industrial unit is derived from the marketing of its products. For marketing their products, fruit and vegetable processing units in Kerala depend heavily on open market agents in order to ensure regularity in supply. Direct retailing is practiced by the units only occasionally, when customers nearby or those visiting the unit demand for a bottle of jam or squash. In the normal course, produce moves through dealers or distributors and the retail outlets are the final point of sale. This happens due to the chain that have developed in the distribution pattern which cannot be eliminated due to reasons like inconvenience in distributing to consumers directly and so on. Most of the units have their own vehicles for distributing products. They take the products to the distribution centers in these vehicles. Small units distribute their products locally to hostels, hospitals and other type of institutions. Out of the 10 sample units, 6 units distribute their produce outside the district, four units distribute outside Kerala and only three units are exporting their products that too, less than ten per cent of their total sales. As the data on area-wise classification of sales are not available, it is not possible to give a clear picture about the local, state, national and export markets. From the discussions with the entrepreneurs, we can observe that the market within the district comes around 45 per cent, outside the district it is 55 per cent comprising 30 per cent within Kerala, 15 per cent outside Kerala and 8 per cent exports.

The entrepreneurs are not ready to go for export even in this free-trade economy after liberalising all the barriers in the international markets. One entrepreneur mentioned the reason for this as the nature of export. Now the importers are accepting goods only on consignment basis. They will give the sales proceeds only after the complete marketing of the products. It will take more than six months and by that time the shelf life of the product will be over and it might become unusable and the loss have to bear by the units. So, according to the entrepreneurs, export is not profitable and viable. Moreover, competition from other countries like China and US is also an important problem

The major reason for a fall in the market is the absence of promotional activities. Majority of the selected units do not depend on publicity and promotion. Only two units give their advertisement in different media like news paper and television. Even the people nearer to that unit do not know the location of the unit in that area. So, the units are not in a position to promote their local sales.

#### **Distribution channel of processing units**





*i) Total sales*

The survival of any firm is based on its production and sales. There are a number of factors which affect the sales like competition in the market, price of the product, quality of the product, publicity given in different media etc. Sales directly affect the profitability of the units which in turn determines the repayment capacity. Total sales of the selected units are given in table 4.23

Table 4.23 Total sales of selected units

Rs. in lakhs

Units	1998	1999	2000	2001	2002	Total	Average
A	24.00 (15)	27.00 (18)	32.00 (20)	37.00 (23)	38.00 (24)	158.00 (100)	31.60
B	6.80 (19)	6.96 (20)	6.68 (19)	7.28 (21)	7.56 (21)	35.28 (100)	7.06
C	96.51 (19)	98.68 (19)	101.61 (20)	108.83 (21)	109.57 (21)	515.20 (100)	103.04
D	6.19 (18)	6.45 (18)	7.12 (20)	7.32 (21)	8.27 (23)	35.35 (100)	7.07
E	19.20 (15)	21.60 (17)	25.60 (20)	29.60 (24)	30.40 (24)	726.40 (100)	25.28
F	3.50 (17)	3.80 (19)	3.90 (19)	4.25 (21)	4.89 (24)	20.34 (100)	4.07
G	18.00 (17)	20.00 (19)	21.00 (20)	22.00 (21)	24.00 (23)	105.00 (100)	21.00
H	4.95 (18)	5.16 (18)	5.70 (20)	5.85 (21)	6.61 (23)	28.27 (100)	5.65
I	14.40 (17)	16.00 (19)	16.80 (20)	17.60 (21)	19.20 (23)	84.00 (100)	16.80
J	3.20 (17)	3.60 (19)	3.80 (20)	3.92 (21)	4.20 (23)	18.72 (100)	3.74
Total	196.75	209.30	224.21	243.65	252.70	1126.33	225.26
Average	19.68	20.93	22.42	24.37	25.27	112.63	

Source : Books and Accounts of the units  
 Note : Figures in brackets show percentage to total

From the table, it is seen that the sales of the fruit and vegetable industry has increased during the study period by 29 percent. The total sales of the industry during the study period was Rs. 921.56 lakhs. The percentage increase in sales (29 percent) is less compared to cost (31 percent). The main reason for a fall in rate of growth in sales is the competition from multinationals and local units.

### *j) Quantity of production*

Data on item-wise production of the sample units are not available except that of CAICO. Table 4.24 presents the item-wise production of various fruit and vegetable products in CAICO.

Table 4.24 Item-wise quantity of production in CAICO

Units (in '000 kg)

Sl. No.	Products	1998	1999	2000	2001	2002
1	Pickle ...	104.25 (41)	105.01 (42)	113.05 (43)	108.76 (44)	86.18 (41)
2	Juice	44.18 (17)	43.08 (17)	31.08 (12)	24.02 (10)	22.96 (11)
3	Jams	43.15 (17)	46.66 (18)	54.32 (21)	53.81 (22)	49.89 (24)
4	Squash	31.36 (12)	38.48 (15)	34.27 (13)	28.38 (12)	19.86 (10)
5	Sauce	8.94 (3)	7.39 (3)	12.38 (5)	13.55 (6)	15.81 (8)
6	Fruit pulp	8.16 (3)	0.19 (-)	5.36 (2)	-	-
7	Syrup	12.94 (5)	6.30 (3)	6.66 (3)	7.50 (3)	10.93 (5)
8	Canned vegetables	1.79 (0.7)	1.47 (0.5)	0.80 (-)	1.19 (0.05)	-
9	Mango Bar	1.35 (0.5)	1.61 (0.5)	2.40 (1)	2.49 (1)	2.67 (1)
10	Canned fruits	0.29 (0.11)	-	-	4.49 (2)	-
Total		256.41 (100)	250.19 (100)	260.35 (100)	244.20 (100)	208.30 (100)

Source: Books and Accounts of CAICO

It is evident from Table 4.24 that the quantity of production declined during the last two years. The major reason pointed out was the competition from multinationals and starting of new units in the local area. Pickles, juices, jams and squashes contributes the lions share of quantity produced by CAICO. Pickles, jams, juices and squashes altogether contribute 90 per cent of the production.

### ***Value added***

The important advantage of the processing of food and vegetable is value added to the raw-materials. Value addition is found to be high in labour insensitive industry like food and vegetable processing. Table 4.25 shows the value added in the selected firms in different years.

From Table 4.25 we can see that the total value added in the industry in different years shows an increasing pattern. The total value added increased by 27 per cent from 1998-2002. Value added percentage also increased every year. There is high value added in large units.

### ***Profit earned by the units***

The prosperity of the industry depends on the margin of profit earned. The profitability of the unit is determined by a number of factors like cost incurred for various items like fruits, vegetables, chemicals etc., wage rate, selling and distribution expenses and such other factors. Profit and repayment of the loan are directly related. Profit making units can only repay the loans correctly and promptly. Table 4.26 explains profit earned by the sample units during the five year period.

The profit earned by the fruit and vegetable processing units during the study period, increased only by seven percent. The industry earned a profit of Rs.209.8 lakh during the study period. The percentage increase in profit is gradually coming down because, as analysed earlier cost increased at a higher percentage than increase in sales during the study period.

Table 4.25 Value added of the selected units

(Rs. in lakhs)

Name of unit	1998			1999			2000			2001			2002			Total	Average
	Output	Input	Value added	Output	Input	Value added	Output	Input	Value added	Output	Input	Value added	Output	Input	Value added		
A	24.00	15.39	8.61	27.00	17.06	9.94	32.00	18.40	13.60	37.00	20.79	16.21	38.00	25.84	12.16	60.52	12.10
B	6.80	1.73	5.07	6.96	2.02	4.94	6.68	2.23	4.45	7.28	2.78	4.50	7.56	2.69	4.87	23.83	4.77
C	85.52	30.20	55.32	86.68	33.92	52.76	9.15	38.33	53.18	98.83	48.82	50.01	109.57	37.23	72.23	283.34	56.67
D	6.19	3.00	3.32	6.45	3.15	3.30	7.12	3.78	3.34	7.32	3.56	3.16	8.27	4.22	4.11	17.23	3.45
E	19.20	11.84	7.36	21.60	13.65	7.95	25.60	14.70	10.90	29.6	16.69	12.91	30.40	21.24	9.16	48.28	9.66
F	3.50	2.25	1.25	3.80	2.58	1.22	3.90	2.69	1.21	4.25	3.31	0.95	4.89	3.71	1.18	5.81	1.16
G	18.00	10.32	7.68	20.00	11.72	8.28	21.00	12.52	8.48	22.00	13.21	8.79	24.00	14.68	9.32	42.55	8.51
H	4.95	1.77	3.18	5.16	2.13	3.03	5.70	2.30	3.40	5.85	2.52	3.33	6.61	2.60	4.01	16.95	3.39
I	14.40	5.16	9.21	16.00	5.86	10.14	16.80	6.26	10.54	17.60	6.59	11.01	19.20	7.33	11.87	52.77	10.55
J	3.20	2.11	1.09	3.60	2.38	1.22	3.80	2.75	1.05	3.92	2.82	1.097	4.20	3.11	1.096	5.55	1.11
Total	-	-	102.09	-	-	102.78	-	-	128.2	-	-	111.97	-	-	130.00	-	-
Average	-	-	10.20	-	-	10.28	-	-	12.82	-	-	11.20	-	-	13.00	-	-

Source: Books and Accounts of the selected units

Table 4.26 Profit earned by the selected units

Rs. in lakhs							
Units	1998	1999	2000	2001	2002	Total	Average
A	5.37 (13)	6.34 (15)	9.27 (23)	12.41 (30)	7.53 (19)	40.92 (100)	8.18
B	5.37 (35)	2.64 (17)	3.29 (21)	1.90 (12)	2.35 (15)	15.55 (100)	3.11
C	10.99 (22)	12.00 (24)	10.10 (20)	6.70 (14)	9.96 (20)	29.75 (100)	9.95
D	1.64 (17)	1.84 (19)	1.99 (20)	2.13 (22)	2.05 (21)	9.65 (100)	1.93
E	4.30 (13)	5.80 (17)	7.42 (22)	9.93 (30)	6.02 (20)	33.47 (100)	6.70
F	1.16 (23)	0.96 (19)	1.15 (23)	0.77 (15)	1.00 (20)	5.04 (100)	1.01
G	3.60 (17)	4.00 (19)	4.20 (20)	4.40 (21)	4.80 (23)	21.00 (100)	4.2
H	2.25 (18)	2.34 (18)	2.65 (21)	2.40 (19)	3.05 (24)	12.69	2.34
I	2.88 (17)	3.20 (19)	3.36 (20)	3.52 (21)	3.84 (23)	16.8 (100)	3.36
J	1.07 (22)	1.07 (22)	1.01 (20)	1.13 (23)	0.65 (13)	4.93	0.99
Total	38.63 (18)	40.19 (19)	44.44 (21)	45.29 (22)	41.25 (20)	209.8 (100)	41.96
Average	3.86	4.02	4.4	4.53	4.13	20.98	

Source : Books and Accounts of the units  
 Note : Figures in brackets show percentage to total

## 2. Ratio analysis

Structural ratios can be put to considerable use for fixation of targets and for making comparisons. It also helps to determine the repayment capacity of the selected units. So in this section an attempt is made to compute the activity ratios, profitability ratios and long term solvency ratios.

1. Fixed capital/invested capital ratio
2. Fixed capital/productive capital ratio
3. Fixed capital output ratio
4. Invested capital/output ratio
5. Value added/invested capital ratio
6. Input/invested capital ratio
7. Output/invested capital ratio
8. Input output ratio
9. Output input ratio
10. Value added/output ratio
11. Value added/input ratio
12. Inventory/sales ratio
13. Working capital/sales ratio
14. Profit/equity ratio(ROE)
15. Debt equity ratio
16. Returns on investment
17. Profit margin
18. Current ratio
19. Output capital ratio
20. Capacity utilisation

#### a) Structural ratios

Structural ratios can be used to analyse the financial position of the various units which is exhibited in Table 4.27.

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Table 4.27 Structural ratios

Rs. in lakhs

Units	Fixed capital to invested capital	Fixed capital to productive capital	Fixed capital to output	Invested capital to output	Input invested to capital	Output invested capital	Value added to invested capital
A	0.69	0.64	0.61	0.88	0.77	1.14	0.36
B	0.67	0.50	0.20	0.30	1.20	3.36	2.16
C	0.26	0.14	0.08	0.31	1.10	3.23	2.13
D	0.78	0.74	1.14	1.46	0.35	0.68	0.34
E	0.69	0.64	0.60	0.88	0.78	1.14	0.34
F	0.87	0.72	3.16	3.61	0.21	0.27	0.07
G	0.70	0.52	0.59	0.86	0.71	1.16	0.45
H	0.71	0.60	0.78	1.04	0.36	0.91	0.55
I	0.70	0.63	0.60	0.86	0.44	1.16	0.72
J	0.87	0.72	2.90	3.37	0.22	0.30	0.08
Total	0.55	0.51	0.47	0.86	0.56	1.16	0.60

Source: Books

Note: For actual figures – See appendix V

The fixed capital to invested capital ratio of the fruit and vegetable processing units stood at 0.55 and fixed capital/ productive capital ratio at 0.51. The relatively low ratio reflects the high labour intensity of the industry. But if we account the units individually, three units reflect relatively high ratios.

The low capital intensity is further illustrated by the behaviour of fixed capital/output ratios except in the case of three units. High invested capital/output ratio showed the increase in stock of materials, semi-finished goods and finished goods. The ratio is very high in the case of four units. Input is also related to invested capital ratio. This ratio stood at 0.56. Another important variable is value added which is related to invested capital. The ratio is 0.60 which shows the high value addition of the industry.

#### b) Activity ratios

The activity ratios show the efficiency with which the resources of the firm have been employed. Table 4.28 explains some activity ratios of the fruit and vegetable processing units.

Table 4.28 Activity ratios of selected units

Units	(Rs. in lakhs)			
	Input /output ratio	Output /input ratio	Value added /output	Value added/input
A	0.68	1.47	0.32	0.47
B	0.36	2.80	0.64	1.81
C	0.34	2.94	0.66	1.94
D	0.51	1.96	0.50	0.97
E	0.69	1.43	0.30	0.43
F	0.75	1.32	0.24	0.34
G	0.61	1.64	0.39	0.63
H	0.39	2.54	0.61	1.54
I	0.39	2.62	0.62	1.62
J	0.74	1.35	0.26	0.35
Total	0.49	2.06	0.51	1.06

Source: Books

Note: For actual figures – see Appendix V

The input/output relations are also very important in production economics. A low input/output ratio indicates high turnover for each unit of input used and hence a rise in input output ratio normally shows a rise in the cost of inputs when inputs are measured in value terms. The input/output ratio of the industry is 0.49 while the output /input ratio is 2.06 which reflects the high turnover of the fruit and vegetable processing industry. The ratios varied from unit to unit. In the case of small units, the ratio is very high because of the increased input cost resulted by the absence of economies of scale. Value added is also related to output and input. Value added/input ratio and value added/output ratio explain the contribution of the industry in terms of inputs and outputs and there is proportional relationship between ratio and the contribution. Value added /output ratio stood at 0.51 i.e., 51 percent of the total output is value added. Value added/ input ratio is very low i.e., 1.06 which probably shows low input use efficiency.

### **c) Inventory /sales ratio**

It is possible to link productivity, repayment capacity and inventory/sales ratio. Inventory sales ratio shows the efficiency of the firms to sell its products. It is calculated by dividing the total sales by average inventory. Higher the ratio, the lower will be the time a firm has to keep inventory.

From table 4.29 it is clear that the firms could sold its products very quickly. The ratio is high in the case of all the units. Thus the higher the ratio, lower will be the holding time of the inventory. The fruit and vegetable processing industry needs to hold the inventory for 90 days which shows the highest efficiency in selling their products. This helps to increase the repayment capacity of the units.

Rajeev (1998) agrees with this opinion by stating the inventory to sales ratio of the industry is 7.51 and the days of inventory holding is 49. The fruit and vegetable processing industry could sell its products very quickly. He opined that large firms are more efficient in selling their products (45 days) than small units (132 days).



Table 4.29 Inventory sales ratios of Selected Units

(Rs. in lakhs)

Units	Sales (2002)	Inventory (2002)	Inventory/sales ratio	Days of inventory holding
A	38.00	10.31	3.68	99
B	7.56	0.75	10.08	36
C	109.57	25.29	4.33	84
D	8.27	2.65	3.12	117
E	30.40	8.21	3.70	99
F	4.89	2.25	2.17	168
G	24.00	6.34	3.79	96
H	6.61	2.10	3.15	116
I	19.20	3.42	5.61	65
J	4.20	0.96	4.38	83
Total	252.7	62.28	4.03	90

Source: Books and accounts of the units

#### d) Working capital/ sales ratio

Working capital can be related with sales in order to measure the efficiency with which the resources of the firm have been employed. A very high proportion of working capital relative to sales indicates failure and hence there will be non-repayment of loans. Table 4.30 showed the working capital to sales ratio of the selected units.

Table 4.30 Working capital/sales ratio of the selected units

Units	Working capital	Sales	(Rs. in lakhs)
			Working capital to sales
A	12.90	38.00	0.34
B	1.63	7.56	0.22
C	55.24	109.57	0.50
D	3.30	8.27	0.39
E	10.32	30.40	0.33
F	6.00	4.89	1.23
G	13.49	24.00	0.56
H	2.60	6.61	0.39
I	6.74	19.20	0.35
J	4.80	4.20	1.14
All	117.02	252.70	0.46

Source: Books and accounts of the units

It is clear from the table that the working capital to sales ratio of the fruit and vegetable processing industry stood at 0.46 ie., working capital constitutes 46 per cent of the sales. The low ratio indicates the efficiency of the units in deploying its resources.

#### e) Profitability analysis

A firm should earn profits to survive and grow over a long period of time. Profitability is used as a standard for measuring financial performance of any business firm. On the one hand, profitability is a measure of economic efficiency and the

motivation for profit provides an incentive to attain efficiency. Profitability and repayment of loans are inter-related. As there is no single measure of profitability, we calculated three ratios of profitability, namely:

- i) Profit margin
- ii) Return of investment
- iii) Return on equity

Table 4.31 depicts the profitability ratios of the selected units:

Table 4.31 Profitability ratios of selected units

(Rs. in lakhs)

Units	Equity	Total capital	Sales	Profit	Return on investment	Return on equity	Profit margin
A	10.00	40.83	38.00	7.53	0.18	0.75	0.20
B	3.00	2.63	7.56	2.35	0.89	0.78	0.31
C	24.00	72.04	109.57	9.96	0.14	0.42	0.09
D	3.00	12.55	8.27	2.05	0.16	0.68	0.24
E	8.00	32.66	30.40	6.02	0.18	0.75	0.20
F	2.00	21.45	4.89	1.00	0.05	0.50	0.20
G	5.00	27.58	24.00	4.80	0.17	0.96	0.20
H	24.00	7.80	6.61	3.05	0.39	1.27	0.46
I	2.50	13.79	19.20	3.84	0.28	1.54	0.20
J	2.00	17.16	4.20	0.65	0.04	0.32	0.15
All	61.90	248.74	252.70	41.25	0.17	0.67	0.16

Source: Books and accounts of the units

### ***i) Profit margin***

It indicates the relationship between profit to sales. The prosperity of a firm depends on the ratio of profit to sales. A higher ratio indicated the higher overall efficiency of the firm and better utilization of economic resources. On the other hand a low ratio implied lower utilization of resources and lower efficiency. It is clear from Table 4.31 that the aggregate ratio for the units was estimated at 0.16 i.e. 16 per cent profit was earned by the units. The profit margin is similar in almost all the units and it ranges between 15-20 per cent except in two units. The net profit margin steeply declined when the size of the firm increased where as the productivity increased in turn with increase in the size of the firms.

### ***ii) Return on investment***

Return on investment is calculated by dividing the net profit by capital employed. It helps in assessing the overall economic efficiency and provides a starting point to study the impacts and trends in the performance of an industrial enterprise. The ratio for the selected units are presented in table 4.31. The ratio for the total sample firms is 0.17 (17 percent) while taking the units individually, the ratio ranges between 15 to 17 percent except one unit (unit B). In substantiating to this Rajeev (1998) calculated that the return on investment for the fruit and vegetable processing industry is 0.15 ie. 15 percent. The small scale units had return on investment in the range of 5 to 16 percent and that of large scale firm it ranged between 8 to 16 percent.

### ***iii) Return on equity***

This is estimated by dividing the net profit with equity (own funds) and the ratio values can be expressed in percentage. This helps to give an idea as to the earnings a firm makes on the owners capital (equity). It is helpful in knowing whether the

investment would be making in terms of return as compared to the risk involved. The ratio of profit to equity is shown in Table 4.28. It can also be observed that the rate of return on equity for the industry was very high i.e. 67 percent. For two units i.e., unit H and unit I, the ratios are very high i.e., 1.27 and 1.54 respectively.

From the analysis, the profitability of the fruit and vegetable processing firms in Kerala was inferred to be satisfactory though there were differences among various units. As mentioned earlier, profitability and repayment capacity of the units are directly related. So, we may conclude that the repayment capacity of the fruit and vegetable processing industry is satisfactory.

#### f) Debt/equity ratio

The repayment capacity can be measured on the basis of debt/equity ratio. A low debt/equity ratio reduces the chances of failure and therefore regular repayment is expected from such firms. The debt/equity ratios of the selected units are given in Table 4.32.

Table 4.32 Debt/equity ratio of the selected units

			(Rs. in lakhs)
Units	Total debt	Equity capital	Debt/equity ratio
A	12.00	10.00	1.20
B	0.35	3.00	0.12
C	5.00	24.00	0.20
D	3.00	3.00	1.00
E	9.60	8.00	1.20
F	2.62	2.00	1.31
G	6.50	5.00	1.30
H	2.50	2.40	1.04
I	3.30	2.50	1.32
J	2.40	2.00	1.20
Total	47.24	61.91	0.76

Source: Books and accounts of selected units

From Table 4.32 it is clear that debt equity ratio for the industry was 0.76 implying a higher share of equity to debt. Eight out of ten units had the debt/equity ratio of more than one. So, we can conclude that the sample firms utilized a higher share of debt to finance their operations.

**g) Current ratio**

The liquidity position of the sample firms can be examined by computing current ratio of different units. It can be calculated by dividing the current assets by current liabilities which is presented in Table 4.33.

Table 4.33 Current ratio of the selected units

(Rs. in lakhs)			
Units	Current assets	Current liabilities	Unit ratio
A	12.90	6.80	1.90
B	1.63	0.50	3.26
C	55.24	24.71	2.24
D	3.30	2.50	1.32
E	10.32	5.34	1.93
F	6.00	4.50	1.33
G	13.49	7.00	1.93
H	2.60	1.35	1.93
I	6.74	3.50	1.92
J	4.80	3.60	1.33
Total	117.02	63.80	1.83

Source: Books and accounts of selected units

From Table 4.33 it may be observed that the current ratio for the industry as a whole was 1.83 signifying that the liquidity position was satisfactory. Thus on this basis, there are ample provisions for discharging the liabilities with assets. For all the units, current ratio is more than one. In two units, it is greater than two and for one unit it is 3.26. It is clear that all firms had higher current ratio to discharge their liabilities.

### ***h) Capacity utilization***

Fruits and vegetable processing industry in Kerala is in a very critical position owing to multiple number of factors. One among them is the low capacity utilization. The capacity utilization of the selected units is given in Table 4.34.

Table 4.34 Capacity utilization of selected units

Units	Installed capacity (tonnes)	Production (tonnes)	Percentage (Col.2 to 3)
A	10000	1000	10
B	50	28	56
C	300	300	100
D	5	2	40
E	50	26	52
F	50	15	30
G	5000	1600	32
H	5000	2000	40
I	1000	600	60
J	25	12	48
Total	27180	5593	20

Source: Books and accounts of the units

Table 4.34 reveals that the overall capacity utilisation of the units was only twenty percent. The main reason pointed out by the units for under utilisation of capacity is competition. Higher the capacity utilisation, higher would be the productivity of the industry. Thus, the productivity of fruit and vegetable processing industry in Kerala is not satisfactory.

### 3. Opinion about bank finance

It is often apprehended by the institutional financiers that lending to small scale industrial units are risky. In such cases, either finance is not provided at all or if provided, only in a limited quantity, at a delayed time and on disadvantageous terms and conditions. Restricted access to finance not only erodes the profitability of many of operating enterprises but reduces the chances of a number of viable and profitable projects from being undertaken. In this context, the opinion of the entrepreneurs are asked with the help of seven statements and the results are presented in Table 4.35.

Table 4.35 Opinion about bank finance

Sl. No.	Statements	Score	Percentage to total score	Zone
1	Bank finance is getting timely	46	92	Excellent
2	The amount of finance is adequate	44	88	Excellent
3	The rate of interest is reasonable	32	64	Good
4	There are proper monitoring practices	44	88	Excellent
5	Bank officials are taking effective measures for recovery	40	80	Excellent
6	Working capital finance is available without any difficulty	41	82	Excellent
7	Security norms and comfortable	37	74	Good

Out of the seven statements listed, five fell in the excellent zone. Only two statements i.e. statements about the interest rate and security norms were found in good



zone. The composite index of the statement fell within the excellent zone. It is surprising to note that none of the statements fell under the average of poor health zones. The entrepreneurs are satisfied with the terms and conditions of the banks in financing their operations.

#### **4. Problems and prospects of Kerala fruit and vegetable processing industry**

The major problems of the industry are the following: ...

##### ***a) Finance***

For smooth operation and expansion of any industry, accessibility to finance on reasonable terms is important. It is also applicable to fruit and vegetable processing industry due to its seasonal characteristics. The units are getting finance from the banks adequately. But the industry has to process the fruits and vegetables during the harvesting period itself which is very short. They have to be stored for a considerable period of time and this necessitates large amount of working capital finance. But the units cannot withdraw more than the allowed limit from banks.

##### ***b) Inputs***

In Kerala fruits/vegetables are grown largely as subsidiary crops rather than as a main crop. No large orchards/estates for growing vegetables/fruits are available to facilitate the processors to obtain quality fruits/vegetables. Thus processors have to depend on agents to process fresh fruits/vegetables which will invariably increase their prices. The non-availability of fruits with processing quality is another problem of the industry.

Problems in respect of other raw materials also exist. Processors indicated that as the availability of Sulphur free sugar in the market is low, they were forced to utilise the ordinary sugar which reduces the quality of jams, squashes, syrups and canned fruits. Also, the packing materials like glass bottles, plastic jars, tin cans, plastic cups, cartons and wooden boxes are also in short supply in Kerala. This is mainly due to the fact that

the firms producing these materials are located outside state. The acute shortage of electricity which is essential for processing operations is also another important problem.

### *c) quality control*

Quality plays a crucial role in the marketing of food products in general and the fruit and vegetable products in particular. Quality products can be produced only if proper quality inspection is made at different stages such as at the time of procurement of fruits/vegetables, processing operations and packaging stages.

In India FPO Act, 1955 and Prevention of Food Adulteration Act, 1954 lay down certain statutory provisions regarding the quality of fruit/vegetable products. Only very few firms in Thrissur have laboratory facilities and technical personnel to test the quality of processed firms. This is mainly because majority of the units in Thrissur are home scale/cottage scale units who cannot afford to set up individual quality control facilities. Thus lack of common quality control laboratories in Kerala force many processors not to control their fruit/vegetable products which lead them to get out of the market.

### *d) Marketing*

Another problem of the industry is its inability to market effectively its products even in Kerala market. This is mainly due to the stiff competition faced by the industry in the state from the known brands of transnational companies. Multinationals produce quality products using advanced technologies at cheap cost and market at lower prices in Kerala market. Small units in Kerala using traditional technologies cannot afford to sell their products at low price because of the high cost of production. Multinational brands because of the well organised marketing strategies have positioned themselves in the Kerala market by various sales promotional campaigns. Most of Kerala firms could not counter the penetration of the state/regional markets by these multinational brands. More over there is no effective market intelligence net work for Kerala firms. All these

limitations of the Kerala units are the consequence of little resource power at their disposal for spending heavily for capturing market like multinational companies.

Kerala firms find it difficult to increase sales in world markets because of the following constraints.

- 1) In order to build up contacts with foreign purchasers and to popularise products in international markets, the exporting firms have to participate in world fairs and exhibitions abroad which is expensive.
- 2) Exporters have to invite potential purchasers to their manufacturing facilities to impress on them the quality and the quantity and standards of their products.
- 3) Absence of proper quality control facilities also drive away the units from international market.
- 4) In order to keep the relations continuing with the importers abroad, the entrepreneurs/managers of the firms have to visit them frequently which is difficult for the small units, because of lack of resources.

*R.P*

#### ***e) Government policy***

In this connection, entrepreneurs have pointed out that certain policy measures of Government are not conducive for the healthy development of fruit/vegetable processing industry.

The Kerala Land Reforms Act 1964 had exempted plantations like tea, coffee, rubber and cardamom from ceiling but neglected estates growing pineapples, cashew and other fruits/vegetables. Several studies have shown that this has resulted in large scale shifting of crops from fruits/vegetables to plantation products. This naturally takes away incentives to grow fruits/vegetables for processing .

Government imposes several arbitrary duties and levies on fruit/vegetable products which invariably increase. The market price of these products are beyond the capacity of middle income groups. The prevailing slab system of sales tax on the sales

turnover of fruit products like jam, squash and juices per year have to pay 12 percent sales tax, whereas others producing less than fifty lakhs per annum need to pay four percent sales tax. Thus, this discriminatory system of sales taxation forces many entrepreneurs to reduce their annual production within fifty lakhs only. Tax incidence on many food processing equipments like freezers, air conditioners and machinery are leading to high cost of fixed investments.

Lack of subsidy in investment finance is another problem faced by fruit/vegetable processing industry. Duty drawback scheme for the export of fruit/vegetable processing unit is also inadequate/negligible.

### **Conclusion**

From the foregoing analysis, it is evident that the fruit and vegetable processing industry has good prospects in the future as it is possible to absorb more labour with lesser amount of capital. But the industry should diversify in its operation by introducing innovative products. With the existing size and nature of the units, the role of finance and the problem in availing loans are very less. The important problems faced by the units are inadequacy of demand and competition from other units. As banks are flooded with money, they can turn their attention in financing the agri-business ventures which is one of the emerging sector in the present globalized world.

## CHAPTER V

### SUMMARY AND CONCLUSION

India is becoming a global power in terms of agricultural produce, not as a global power in terms of meeting global standards. Above all, India has to produce enough food for its people. This agricultural prosperity will also help to reduce poverty. But it is not enough to stop at agriculture alone as it is not sufficient for the people and the country. The losses in food sector are high. In the fruit and vegetable sector the losses are estimated to be as high as 30 per cent. In the milk it is about five per cent. So, we need to give much greater attention to post-harvest technologies i.e., mainly to agricultural processing.

Fruit and Vegetable (F&V) Processing Industry is an important agro-based industry. It helps to minimize losses of fruits and vegetables, prolong the availability of fresh produce, create employment opportunities in rural areas and ensures regular availability of nutritious and hygienic food products. The benefits brought by the industry directly and indirectly are particularly great. Some of the derived benefits resulting from this industry are migration of labour, increase in demand of supplementary raw materials, chemicals and packaging materials and increase in export earnings. Hence, a study on financing of Fruit and Vegetable Processing Industry in Thrissur District is necessary with the following objectives:

1. To study the extent and pattern of institutional finance to the fruit and vegetable processing industry.

2. To study the factors influencing the repayment behavior of the selected units.

## Summary & Conclusion

The study was conducted among ten Fruit and Vegetable Processing units out of the total units in Thrissur District and the study was conducted for a period of five years from 2005 to 2010. The primary data collected with a pre-tested questionnaire schedule and the secondary data used from the books and accounts of the units and banks. The

## CHAPTER V

### SUMMARY AND CONCLUSION

India can emerge as a global power in terms of agricultural produce, not as a diffident exporter but as one capable of meeting global standards. Above all, India should be able to grow plenty of food for its people. This agricultural prosperity will also largely help to reduce rural poverty. But it is not enough to stop at agriculture alone as benefits from it are to accrue to the people and the country. The losses in food sector are large i.e. 10 per cent. In the fruit and vegetable sector the losses are estimated to be as high as 25 percent, in the milk it is about five per cent. So, we need to give much greater attention to post harvest technologies i.e., mainly to agricultural processing.

Fruit and Vegetable (F&V) Processing Industry is an important agro-based industry. It helps to minimize losses of fruits and vegetables, prolong the availability period for processed products and helps to create employment opportunities in rural areas. Besides this, it also ensures regular availability of nutritious and hygienic food products to the consumers. The benefits brought by the industry directly and indirectly stimulate horticultural growth. Some of the derived benefits resulting from this industry are reduction in migration of labour, increase in demand of supplementary raw materials like sugar, chemicals and packaging materials and increase in export earnings. Hence, a study on the Financing of Fruit and Vegetable Processing Industry in Thrissur District was taken up with the following objectives:

1. To examine the extent and pattern of institutional finance to the fruit and vegetable processing units.
2. To identify the factors influencing the repayment behavior of the selected units.

The Study was conducted among ten Fruit and Vegetable Processing units out of the 32 units in Thrissur District and the study was conducted for a period of five years from 1998 to 2002 using mainly primary data collected with a pre-tested structured schedule. Secondary data were also used from the books and accounts of the units and banks. The

data were analyzed with the help of mostly bi-variate and multi-variate tables. Arithmetic techniques like averages, ratios, percentages, etc., were computed. The major findings of the study are summarized in following paragraphs.

### ***Major Findings of the Study***

1. The sample firms are classified on the basis of installed capacity. Forty percent of the sample units come under small-scale category. So the substantial percent of the sample firms are tiny or small.
2. In respect of ownership, it was observed that the industry was mostly organized as proprietary (Ninety percent) and the remaining one unit is company type.
3. Majority of the sample firms were established after 1960 (90 per cent) because of the increased demand for processed products.
4. The location preferences of the firms were in rural areas because sixty per cent of the sample firms were in rural area. In other words the revealed preference suggested that the industry is located near the sources of supply of labour, fruits/vegetables rather than near the consuming centers.
5. The Registration status of the units showed that only 30 per cent of the units were registered under Factories Act, 1948. But all the units are registered as per the norms of Food Products Order, 1955, which is controlled by the Ministry of Food Processing Industries. So, majority of the units in fruits and vegetable processing industry in Kerala are outside the purview of Factories Act, 1948.
6. A study of entrepreneurial characteristics revealed that more than seventy per cent of the entrepreneurs belonged to the age group of above forty years and all of them are educated.
7. The religionwise distribution of the entrepreneurs revealed that 56 percent of the sample units were started by Christian entrepreneurs and the rest 44 percent by Hindus. Thus, we can conclude that the Christian entrepreneurs dominate in the Fruit and Vegetable Processing Industry.

### *Extent and Pattern of Institutional Finance to Fruit and Vegetable Processing Units*

1. In the development of small-scale industrial units, financial Institutions like banks play a relevant role. Most of the small-scale units are started with a low fixed capital investment often financed from own savings or with borrowings from other sources.
2. Non-availability of the working capital is the major problem faced by the small-scale units.
3. The units were started with capital comprising own funds, loans from banks and loans from other sources. The share of owned funds in the total capital at the time of establishment was high i.e., 62 per cent and the share of borrowings was less. Three units started their operations with only own funds. The major reasons for the reduced share of debt are: a) units are started by the entrepreneurs with sound financial status and b) the units were small when they set up. Moreover, banking facilities were not developed to the extent at that time.
4. Working capital is the funds required for day- to -day operations of the business. The selected units were mainly depending on public sector commercial banks for their working capital. For the sample units, getting working capital is not a problem, but there is no full utilization of the sanctioned working capital because of the seasonality factor. The season for the fruit/vegetable processing unit is from January to April. The units draw complete limit in cash credit account for the procurement of the raw materials and repay after the sales of the products. So the average utilization of working capital finance will be less than the limit sanctioned. The security accepted by banks for the cash credit is title deeds of land and other properties except one unit.
5. More than 50 per cent of the working capital of the fruit and vegetable processing industry in Thrissur District is financed by the Public Sector Commercial Banks and the rest of the working capital needs are met with their own funds.
6. The share of fixed capital in the total capital is higher when compared to working capital with a share of 53 percent and 47 percent respectively. As large scale



firms are capital-intensive units, the share of fixed capital is more and that of small units is less.

7. The analysis of financing pattern of the sample units revealed that the highest share of the finance was from owned funds because of the influence of one unit. Otherwise, the share of borrowed funds is high when compared to owned funds (60 percent). So, the fruit and vegetable processing units relied heavily on debt as a means of financing their processing operations. The fixed capital of the selected units is constituted by building (34 percent), plant and machinery (34 percent), land (20 percent) and other assets (20 percent). The working capital of the units comprises 52 percent of physical working capital i.e., stock of materials, 32 percent of cash in hand and at bank, the rest 16 percent constitutes debtors. The amount to be received from debtors is more in small units when compared to large units, which implies that the smaller firms have to rely more on credit sales than large firms. The 16 per cent share of debtors in total working capital denotes that the credit sale is less in the industry.

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### ***Factors Influencing the Repayment of the units***

The selected fruit and vegetable processing units have not taken long-term loans during the study and they enjoyed working capital finance in the form cash credit. So the discussions on repayment schedule and procedures are irrelevant. However, factors which lead to the repayment of working capital loan were discussed. As profitability, cost structure and repayment are interconnected, cost structure and profitability analysis was also undertaken.

1. The average cost of the fresh fruits consumed by the units has increased from Rs. 4.59 lac in 1998 to Rs. 6.90 lakh in 2002 along with an increase of costs in all the units. The cost of fruit juice concentrates also increased by Rs. 25 lac during the study period. The share of vegetable cost was high in units producing only pickles. The cost of chemicals and cost of other inputs also increased during the

study period by 20 percent and 55 percent respectively. The cost of packing materials like cans, tins, bottles and cartons also increased by 8 percent.

2. As fruit and vegetable processing industry is labour intensive, the analysis of employment pattern and the cost of labor assumes significance. 61 percent of the total employees are permanent in the fruit and vegetable processing units. The rest 39 percent is casual workers.
3. The sex wise classification of the employees showed that 91 percent of the workers in these units are female workers. So, we can conclude that fruit and vegetable processing units are dominated by female workers. But all the entrepreneurs of the units are males. So the share of females in processing and packaging is more while in the administration, woman participation is less. The average cost of labour increased around 25 percent during the study period.
4. The total cost as well as the total sales in the units increased during the study period. The percentage increase in sales (29 percent) is less compared to cost (39 percent). The price of raw materials has increased considerably whereas the price of the final products remained constant.
5. The total value added in the industry in different years shows an increasing pattern. It has increased by 27 per cent from 1998 to 2002 proving high value addition in this industry.
6. The total market of the selected units comprises of local, state, and export market. The market within the district comes around 45 percent and the rest 55 percent is outside the district comprising 30 percent within Kerala and export market of 8 percent. The units are not adopting any promotional activities like advertising or publicity. The customers are not even aware of the existence of these units in their local area.
7. The profit earned by the fruit and vegetable processing units increased by seven per cent during the study period. The percentage increase in profit is gradually coming down because of the higher percentage increase in cost compared to sales.

### **Ration analysis**

Various types of ratios were worked out to revalidate the above mentioned arguments and to find out the factors influencing the repayment of loans.

1. The relatively low fixed capital to invested capital ratio reflects the high labour intensity of the units. The low capital intensity is further illustrated by the behavior of fixed capital/output ratio. The high value added/invested capital ratio revealed the high value addition of the industry.
2. Various activity ratios like input/output ratio, output/input ratio, value added/output ratio, value added to input ratio, inventory sales ratio and working capital sales ratio were also calculated. The low input output ratio (0.49) and high output input ratio (2.06) show the high turnover of the fruit and vegetable processing industry. The input/output ratio is high for small units because of the absence of economies of scale. The value added output ratio is 0.51 and value added input ratio is 1.06.
3. The high inventory sales ratio (4.03) reflects the efficiency of the units in selling their products fastly. The fruit and vegetable processing units need to hold the inventory for 90 days which shows highest efficiency in selling their products which in turn helps to increase the repayment capacity of the units. The low working capital sales ratio (0.46) indicates the efficiency of the units in deploying the resources of the fruit and vegetable processing units.
4. Analysis of profitability is also done to assess the repayment capability of the units. The important ratios in profitability analysis are profit margin, return on investment and return on equity. The average profit margin of the fruit and vegetable processing is 0.16 and it ranges between 15 to 20 percent except in one unit. (Unit B). The return on equity of the units comes around 0.67. So, the profitability of the fruit and vegetable units in Kerala was observed to be satisfactory, even though there are differences among various units. The

repayment capacity of the fruit and vegetable processing industry is also satisfactory in terms of profitability.

5. The debt/equity ratio of the industry was 0.76 implying a higher share of equity to debt. If we exclude two units from the list, the debt equity ratio will become more than one. Thus the units very much depend on debt when compared to equity.
6. In order to assess the liquidity position of the units, current ratio was worked out. The current ratio of the units is 1.83 signifying that the liquidity position of the units was satisfactory. All the sample firms had higher current ratio to discharge their liabilities.
7. The overall capacity utilization of the unit was only twenty per cent. So there is significant under utilization of the installed capacity of the units.
8. The opinions of the entrepreneurs on the bank finance was collected with the help of seven statements and their opinion is positive and satisfactory as composite index is 70 percent. The opinion about interest rate was less satisfactory compared to other statements. So the banks should give more loans at low interest rates.

In the present liberalized economic environment the fruit and vegetable industry is facing multifarious constraints to develop. The major among them was the mobilization of adequate finance for working capital needs during seasons. Another important problems faced by the industry are penetration of market because of brand images built by competitors and lack of publicity, lack of quality control and laboratory facilities, and difficulties in procuring quality fruits and vegetables. The government policies like Kerala land Reforms Act, 1964, duties and levies imposed by government on fruits / vegetable products, lack of subsidy in investment finance etc., are the other important issues faced by the units

## Policy implications

From the study, it was revealed that rather than finance, marketing is the major problem for the agro-processing units. However the following policy implications are suggested.

- 1) In order to solve the marketing problem, the entrepreneurs are ready to start producing new products. But, it requires production incentive and marketing incentive. Further, in the context of globalization, value added concept is very important. Hence, it is suggested to appoint a task force exclusively for processing of fruits and vegetables at the earliest to look into these issues.
- 2) Certain entrepreneurs feel that the present rate of taxes and other levies are little high. Hence, policy measures may be initiated to provide financial incentives.
- 3) The prospects of any venture depends on diversification. One of the emerging areas of diversification related to fruits and vegetables is newly popularised agribusiness concept. The concept of agribusiness was emerged both as a consequence of liberalized economic policy and expanding domestic trade. Agribusiness includes the total input farm product sector that supply farm input, involved in production, handle the processing, distributing and retailing of the product to the final consumer. Hence the commercial banks in the state should come forward to finance these agribusiness ventures.
- 4) From the study, it was also revealed that a good share of dependence for finance is on public sector banks. At the same time one of the local sources like co-operative banks can think of extending financial support for starting agro-processing business ventures. NABARD can take initiative on this line.
- 5) Today one of the prominent and interesting discussions is on women empowerment. Earlier we have seen that this industry is female biased but entrepreneurs are males. Thus centralized efforts may be promoted to establish a link between women empowerment activities like Kudumbashree, Self Help

Groups (SHGs), micro entrepreneurship and agro-processing including agribusiness.

### **Conclusion**

Agriculture is still the back bone of the Indian economy. But the priorities are changing. Commercialization of agriculture and planting of cash crops and horticultural crops are the recent trends. But the output of non-food crops can be effectively utilised only if forward and backward linkages are well established. In this linkage process, agro-processing and agribusiness are two effective links. This will also promote the value addition which is one of the important objectives of globalization. Globalization is the order of the day and “one has to think globally and act locally in the spirit of the reforms process”.



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# FINANCING OF FRUIT AND VEGETABLE PROCESSING INDUSTRY IN THRISSUR DISTRICT

By

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## **ABSTRACT OF THE THESIS**

*submitted in partial fulfilment of the  
requirement for the degree of*

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**Department of Rural Banking and Finance Management**

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**KERALA, INDIA**

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## ABSTRACT

The study entitled “*Financing of Fruit and Vegetable Processing Industry in Thrissur District*” was conducted with the following objectives: 1) to examine the extent and pattern of institutional finance to the fruit and vegetable processing units and 2) to identify the factors influencing the repayment behaviour of the selected units. The study was conducted among ten fruit and vegetable processing units out of the 32 units in Thrissur District for a period of five years from 1998 to 2002 using mainly primary data collected with a pre-tested structured schedule. Secondary data were also used from the books and accounts of the units and banks. The study revealed that a substantial percent of the sample units are tiny or small which are organized in the form of sole proprietorship. Majority of the sample firms were established after 1960 because of the increased demand for processed products that too by Christian entrepreneurs. Even though all the units are registered as per the norms of Food Products Order, 1955, majority of the units in fruits and vegetable processing industry in Kerala are outside the purview of Factories Act, 1948. The study also revealed that most of the small-scale units were started with a low fixed capital investment. The share of owned funds in the total capital at the time of establishment was high compared to borrowings, as the units were small and started by the entrepreneurs with sound financial status. The units mainly depend on Public Sector Commercial Banks for their working capital. Study also revealed that the major problem faced by the units is the inadequacy of working capital during the season. More than 50 percent of the working capital requirement of the units is financed by the public sector commercial banks and the rest are met with their own funds. The share of fixed capital in the total capital is higher when compared with working capital. The large-scale units are capital intensive as the share of fixed capital is more. The analysis of the financing pattern revealed that the highest share of finance was from borrowed funds. Building, plant and machinery contribute major share of the fixed capital while the stock of raw materials occupy highest share in working capital. The lower share of sundry debtors of the units denotes that credit sale is less in the industry. The analysis of the cost structure revealed that all the major cost items like cost of fresh fruits, fruit juice concentrates, chemicals and cost of other inputs have increased during



the study period. The share of vegetable cost is high in units producing only pickles. The percentage increase in sales is less compared to cost, which adversely affected the profit of the units. The value added of the industry has increased by 27 percent during the study period. The industry depends heavily on local market for the sales of their product, as their promotional activities and marketing are not adequate. To supplement the analysis with the absolute values, ratios are worked out classified into three categories namely structural ratios, activity ratios and financial ratios. Structural ratios reassured the earlier arguments. Activity ratios and profitability ratios established that the dependence on debt is minimum and institutional finance has nothing to do only little. The potential for institutional finance depends on to what extent the industry can diversify and also to what extent the banking agencies can come forward to provide financial assistance for venture financing.

APPENDIX I

SCHEDULE FOR DATA COLLECTION FROM THE UNITS

State	
City/Town/Village	
Area	Rural/Urban
Registration	Proprietary/co-op/pvt/public/partner
Registered/unregistered	
Establishment	
Do you have any other units	Yes/No
Unit operating in the owned building	Owned/Rented

- a. Dairy based and/or vegetable products
- b. Fruit juices and concentrates
- c. Squashes
- d. Fruit powders
- e. Sauces
- f. Jams and juices
- g. Pickles (item wise)
- h. Pickles
- i. Dried and Preserved fruits

Appendices

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## APPENDIX I

### SCHEDULE FOR DATA COLLECTION FROM THE UNITS

#### A) Basic details

1. Name of the unit :
2. Address of the unit :
3. Location : Rural/Urban
4. Type of ownership : Proprietary/co-op/pvt/public/partner
5. Registered/unregistered :
6. Year of establishment :
7. Do you have any other units : Yes/No
8. Whether operating in the owned building : Owned/Rented
9. Installed capacity :
10. Product mix CP
  - a. Dehydrated fruits/vegetable products
  - b. Fruit juices and concentrates
  - c. Squashes
  - d. Fruit powders
  - e. Sauces
  - f. Jams and juices
  - g. Pickles (item wise)
  - h. Chutneys
  - i. Canned and Preserved fruits

### 11. Details of the entrepreneur

- a. Name
- b. Age
- c. Sex
- d. Qualification
- e. Brief History

### B) Financing Pattern

#### 1. At the time of Establishment

Sl. No.	Type of Finance	Amount (Rs.)
A	Own Finance	
B	Government Subsidy	
C	Loans From Banks (Details of period, rate of interest, and purpose)	
D	Other Financial Institutions	
E	Other, if any	

#### 2. Additional Investment

Sl. No.	Type of Finance	Amount (Rs.)
A	Own Finance	
B	Government Subsidy	
C	Loans From Banks (Details of period, rate of interest, and purpose)	
D	Other Financial Institutions	
E	Other, if any	

#### 3. Working Capital Finance

Sl. No.	Particulars	1998	1999	2000	2001	2002
1	Amount (limit)					
2	Rate of interest					
3	Type (cc/loan/od)					
4	Period of loan					
5	Installment					
6	Type security (with the bank or unit)					

4. Are you entitled to any concessional Finance? Yes/No

If yes, State nature.

- a. Amount
- b. Rate in interest
- c. Purpose
- d. Subsidy element
- e. Year

5. How much of the loan amount was actually utilised for the purpose?

*Profitability Details*

Sl. No.	Expenses/Income	1998	1999	2000	2001	2002
1	Raw Materials a. Fresh fruits b. Dried fruits c. Fruit juices d. Fresh vegetables e. Dried vegetables f. Edible oils g. Spices h. Others				...	
2	Chemicals a. Acetic acid b. Food colors c. Essences d. Citric acid e. Others					
3	Packing materials a. Bottles and jars b. Cartons/Wooden boxes c. Labels					
4	Other inputs a. Electricity b. Water c. Fire wood d. Coal e. Gas f. others					

5	Labour Charges a. Manager b. Food technologist c. Supervisor d. Skilled workers e. Unskilled workers f. Sales staff g. Others					
6	Other expenses a. Rent b. Telephone and postage c. Interest d. Taxes e. Commission f. Depreciation					
7	Income a. Sales (Value) b. Other income if any					

6. Capacity utilisation

7. Assets and liabilities

Sl. No.	Assets/Liabilities	Amount As on
1	Fixed assets a. Land b. Building c. Plant and machinery d. Transport equipment e. Tools f. Furniture and utensils g. Electric fittings h. Others	
2	Current assets a. Raw materials b. Semi-finished goods c. Finished goods d. Amount receivable e. Cash in hand and at bank	
3	Long term liabilities a. Loans and advances b. Capital and reserves c. Others	

4	<b>Current liabilities</b> a. Sundry creditors b. Overdraft c. Others	
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*C) Marketing of the product*

1. Channels of distribution
  - a. Direct marketing
  - b. Through shops
  - c. Exports

2. Quantity of production

Sl. No.	Commodity	1998	1999	2000	2001	2002
1	Juices					
2	Jams					
3	Pickles					
4	Jellies					
5	Others				<i>Q.P</i>	

3. Which is your fast moving product

4. How globalization affects your markets

*Seasonality factor*

- a. procurement of raw materials (month wise) at least for one year
- b. Production
- c. Sales

*D) Repayment procedures*

Timeliness of the loan

Adequacy of the loan

Rate of interest

Total repayment period

Installment amount

Whether you are repaying directly or through export proceedings

*Mode of repayment*

- a. Monthly
- b. Quarterly
- c. Half yearly
- d. Yearly

1. Did you repay all the installment of the loan Yes/No

2. Amount of loan repaid

3. Amount outstanding

4. Number of installments defaulted presently

Amount of default

Penal interest

5. Is the number of installments prescribed for repayment is appropriate and convenient to you?

6. If no, how many installments did you feel appropriate?

*E) Reasons for default in repayment (Rank them in order)*

- a. Inadequacy of income
- b. Defective loan policies
- c. Fixation of unrealistic due dates
- d. Lack of recovery efforts
- e. Managerial problems
- f. Faith in write off
- g. Non availability of needed inputs in time



h. Reduction of demand in the market

i. Others (specify)

Whether the bank officials are visiting your organization regularly?

If yes, interval of visit: for supervision

for loan recovery

Are you getting reminders from the bank if any installment is due

Opinion about bank finance

Sl. No.	Statement	S.A	A	NO	D	S.D
1	Bank finance is getting timely					
2	The amount is adequate					
3	Rate of interest is reasonable					
4	there are proper monitoring practices					
5	Bank officials will take effective measures for recovery					
6	Working capital finance is available without any difficulty					
7	Security norms are reasonable					

Major problems faced by the unit

1. Financial problems
2. Marketing problems
3. Availability of raw materials
4. Quality control problems
5. Policies of the Government

Details of subcontracting

## APPENDIX II

### FRUITS AND VEGETABLE PROCESSING UNITS IN THRISSUR DISTRICT

1. CAICO
2. New Komala Food Products, Chelakkara
3. Haressu's Food Products, Chelakkara
4. Pieco Industries and Canning Co., Thalakkottukara
5. Pio Food Packers, Kureechira
6. Jayco Food Products, Ollur
7. Posh Food Products, Mulankunnathukavu
8. Kalyan Products, Kuttallur
9. Rerray Food Products, Puranattukara
10. Johnson Food Products, Irinjalakkuda
11. Sreeja Enterprises, Puzhayunnur
12. Arkey Food Makers, Patrieekal
13. Asian Food Products, Kuravillasserri
14. Shares Special Achar, Kadilkkadavu
15. Sebees Company, Eravu
16. Kalyan Soft Drinks
17. Sudha Products
18. TKD Traders, Motherakanny, Palaikkulam
19. Dia Pickles, Edathuruthy
20. Maya Pickles, Kottappuram
21. Sagara Food Packers, Ollukkara
22. Sams Food Products, Edathureethy
23. Janatha Mahila Sangam, Mala
24. Homemade Food & Spices, Vadoorkkara
25. Devi Food Products, Chembukkavu
26. Preethy Pickles, Vadakkancherry
27. Chithra Food Products, Vadakkancherry
28. Topil Traders, Kodungalloor
29. Top Achar, Karuvannur
30. Ganesh Food Products, Anthikkadu
31. Premier Food Products, Vettickal
32. Naveen Food Products, Ollur

## APPENDIX III

### NAME AND ADDRESS OF THE LICENSES IN KERALA

Sl. No.	Name and address of the factories
1	Canning Industries Cochin Ltd., Caico Road, Valarkavu, Thrissur 680 006
2	Malabar cost Products, Thodupuzha Road, Vazhakulam. Ernakulam 686 670
3	Visco Food Products, Vazhakulam, Ernakulam 686 670
4	Malabar Fruit Products, Neelampuzha Kavala, Vazhakulam, Ernakulam. Dt.
5	Kalyan Products, Kuttanellur, Thrissur 680 006
6	Kerala Agro Products, Arampuzha, Punalur, Quilon Dt.
7	Madurai Soft Drinks P. Ltd, Ayikarpadi P.O. Malapuram Dt. 637 637
8	Kerala Co-operative Milk Marketing Federation Ltd., Central Producyion Dairy, K.C.M.M.F. Ltd., Punnakara, Aleppy Dt.
9	Accelerated Freeze Drying Co., Ltd., Ezhupunna. Allapuzha. 688 548
10	S.L.K. Food Processing, 328/12, Poovattuparamba, Calicut
11	Maruty Foods Private Ltd., PB No.1658, Cochin. 682 015
12	Darico Canning Ltd., Moospet Road, Thrissur
13	Elenjikal foods and Beverages (Inddia) P. Ltd, Edathala P.O., Alwaye, Ernakulam Dt. 683 651
14	Techno Chemicals Industries Ltd., PB No. 74, Oyittil Road, Calicut 1
15	The Canning Industries Cochin Ltd. Edacochin, Cochin 682 006
16	Malabar Fruit Products Pb. No.1. Bharananganam, Kottayam Dt.
17	The Thrissur Fruit and Vegetable Marketing Society Ltd., Nadathara, Via Mission Hospital, Thrissur
18	Premier Food Products, NH. Mannuthy, Thrissur 680 651
19	Uniroyal Marine Export Ltd., 11/9. Vengalam P.O., Changanacherry, Calicut 673 303
20	Uma Exports, V/97. Karumani Road, Kannara P.O. Thiruvananthapuram 695 040
21	S.S. Food Packers, MIE, Angamally, Ernakualam 653 872
22	Regional Agro Industries Development Corporation Ltd., PB No. 407, Cannanore 670 002
23	Standard Beverages, Aruvikara P.O. Via. Karakulam, Thiruvananthapuram Dt.
24	Nirmal Beverages, Aruvikara P.O., Via. Karakulam, Thiruvananthapuram Dt.
25	West India Beverages and Foods Products, Thottada, Cannanore, 670 007
26	Food packs Indiana, Trikariyoor, Via. Kothamangalam, Idukky 686 692
27	Pineapple Marketing Co-op P. Society Ltd., K. 454, Amayanur, Ernakulam 686 025
28	Sri. Mahalaxmi Food Industries, Cheramal Chambers, 27/354 Kurugupally Road, Ernakulam. 682 015
29	Tata Tea Ltd., Mushooms Project, Munnar, Idukki 685 612
30	Allied Beverages, 19/223. Puthiyapalam, Calicut 2
31	Malabar Coast Products, Palathingal House, T.B. Road, Kottayam 1
32	Herbal Isolates P. Ltd., Panacode P.O., Ernakulam Dt. 682 310
33	Sree Sadan Beverages Co., Onden Road, Cannanore

- 34 Naveen enterprises, X/754. Kollad P.O., Kottayam 686 029
- 35 Eastern condiments P. Ltd, Eastern Valley, Adimali, Idukki. 685 561
- 36 Namputhuries Pickle Industries, Manakad P.O. Thodupuzha, Idduki Dt.
- 37 Narasu's food Products, 1/440. Temple Road, Chalakara, Thrissur Dt.
- 38 Kalpaka Processing Co., Neelamperoor, Alleppy Dt.
- 39 Pepper India Corporation, Opp. Vellappally lane, K.K. Roada, Kottayam 1
- 40 Spice Valley Products Ward No. K.V. III. H. No. 2164, Palai, Kottayam 686 575
- 41 Naveen Marcose, XII/125 A. Nattakam, Kottayma, 686 013
- 42 Gandhigram Village Industries Co-Op. Complex. TICCOS Ltd., Vazhoor P.O. Kottayam
- 43 Malabar Food Products, 32/402. A. Chalikavattom, Vennela South, Cochin 25
- 44 Kalyan Food and Bevetages, VII/270. Bridgeview, Bank Junction, Alwaye 683 001
- 45 Avon Be verages, (Cochin) Chitrapura Road, Irimpanam, Ernakulam 682 309
- 46 Malabar canning, XXXVI/1545. M.G. Road, Ernakulam
- 47 Vamana Food products, 1/705, Karanthur P.O., Kunnamangalam, Kozhikode 673 571
- 48 ABC Food Products Kakkathuruthy Road, Chetiparamba, Irinjalakuda, Thrissur 680 121
- 49 Manna Food Industries, Adooparamba, Muvattupuzha, Ernakulam Dt.
- 50 Home Maid Foods and Spices, Vadookara, Thrissur 680 007
- 51 Shati Food Products, Badagara, Kozhikode, 673 106
- 52 Khatai Food Industries, Khatai Mahal, V.R. Menon Road, Cochin 16
- 53 Manoor Enterprises, Kumbazhamuni P.O. Pattanamthitta 689 653
- 54 Gayathri Food Products, MIE Manarcaud P.O., Thodupuzha Idukki Dt.
- 55 Uma Exports, 597, Thannimoodu, Kallar P.O. Idukki Dt.
- 56 Amrutha Fruit Products, Rural Development Centre P.O, Pakalamuttam, Kuruvilangad P.O. Kottayam Dt. 686 642
- 57 Priyadarshini Fruit Products, Vazhakulathu Pariyaram, Kottayam 21
- 58 Thankam Food Products, 22/118. Single Street, Nurani, Palghat 4
- 59 Geo Food Products, Adooparambu, Muvattupuzha P.O. Ernakulam Dt.
- 60 president, Sagar Society (Reg. No.P/193/89), Kuriyanoor P.O Tiruvalla, Pathanamthitta Dt. 689 550
- 61 Malabar Agro Fruit processors, XIV/88. (New No. X10/467), Chittathukkara, Kakkanad, Kochi 682 030
- 62 The Pharmaceuticals and Chemicals (Travancore) P. Ltd., TC/473, Saminath Vilas Pettah, Vanchiyoor P.O. Thiruvananthapuram 695 035
- 63 A.N.M. Proudcts, beliapatnam, Cannanore 10
- 64 Superintendent, Agricultural Research Stn., Nelliampath, Palghat Dt.
- 65 Swadeshi Fruit Products, 16/70, Kuttichira, Calicut-1
- 66 Gecy Food Products, Punkunnam Road, Palai, Kottayam Dt.
- 67 Bymor Food Products, 26/184, Govindapuram, Calicut-6
- 68 Hero Fruit Products, 16/114. Thangals Road, Calicut-1
- 69 Mariana Food Products, Kawdiar road, Thiruvananthapuram 3
- 70 Multi Food Products, 33/654 T.D. Road, Cochin-1
- 71 Vertex Food Products, Thanackal P.O. Thiruvananthapuram 695 313

- 72 Kerala Food Products, Kunnampurathu veedu, Olessa, Kottayam 14
- 73 M.C. Fruit Products, 3/1 82 B. Near 6<sup>th</sup> Rly. Gate. Calicut-1
- 74 Arasco Fruit Products, 15/768. South Beach Road, Calicut-1
- 75 Society of St. Vincent De Paul, Near Railway Station, Alwaye-1
- 76 India Food Industries (workshop) Co-op. Society Ltd., No. S. Ind (K), 135, Puthenangadi Bazar, Market Road, Kanjirapally, Idukki Dt.
- 77 Asian Spices, MIE Pampady, Kottayam Dt.
- 78 Malabar Spices, 2. MIE Manimala, Kottayam Dt.
- 79 The Eves' Foods Products, Spice India Bldg. Quilon-2
- 80 Volga Food Products, 15/502. West Kallai, Calicut-3
- 81 Arikuzha K.I.I.C.S. Ltd, No. K.V. Ind (E) 12. Arikuzha P.O., Idukki Dt.
- 82 Malabar Cost Enterprises, 24/1458. Karumpaidyam. Arts College, Meenachandai, Calicut.
- 83 Fine Food and Allied Products, 12/474, Kuttichira, Calicut-1
- 84 Kerala Soft Drinks, 10 & 4 B. Alappat Cross Road, Ravipuram
- 85 Vikas Products, 23/169, Kannamchery, Calicut 673 003
- 86 Variety Edible & Palatables, 16/453, annie Hall Road, Calicut-23
- 87 Kerala Rural Indl. Service centre, Ambady Naga, Erevichira P.O., Thottakadu, Kottayam
- 88 Foursome Corporation, 3/28. A Post Alavil, Kannur. 670 008
- 89 Neo Food Industries, Paranchockal House, Thukkalassery, Thiruvalla, Kottayam Dt. 689 101
- 90 Garden Fruit Products, Edakattuvayal, Arrakkunam, Ernakulam Dt
- 91 Ino Food Packers, Kodugoor Junction, Vazhoor. 686 504
- 92 Kalyan Soft Drinks, Kuttanallur, Thrissur 680 504
- 93 Azad Processed Food, 20/957, Kallai, Calicut-3
- 94 The Secretary, Nedumangad Processing & Mktg. Girijan Vanitha Co-op.Soc.Ltd., Nedumangad, Thiruvananthapuram Dt. 695 541
- 95 Central Marketing Products, 8/49. A. Kurumandal, South Paravur P.O. Quilon Dt.
- 96 Mount Sahiya, Attapattam, Kumli, Idukki Dt.
- 97 High Range Products, 12/150. A. Nattakam, Kottayam
- 98 Director, Food Processing & Nutrition Centre, Balussery, Calicut Dt.
- 99 Capital Products, P.O. Farook College, Calicut 673 632
- 100 Fruit Preservation Centre, Changanacherry social Service Society, Mallapally West P.O. Pathanamthitta, 686 101
- 101 Arkeyan Food Products, 24/285. Easwari Vilas, Sasthan Koil road, Thycaud, Thiruvananthapuram 695 014
- 102 Kumar Fruit Products, 39/1145-6. Ashok Road, North Kaloore, Cochin-17
- 103 National Beverages, H. No.XX/71. Valiyakunnu Kizhuvaliram P.O. Attingal. 695 104
- 104 Feast Food Products, 4/439(D) Industrial area, Tellicherry, 670 661
- 105 Archana Fruit Products, Kothala P.O. Pambady, Kottayam Dt.
- 106 Naveen Food Products, 425. A. Marathakara, Thrissur Dt.
- 107 Dual Beverages, Thekkumbhagam P.O., Thodupuzha 685 525
- 108 Thirst Aid Beverages Co. Muthoor, P.O., Thiruvalla-689 107
- 109 Volga Food Products, 15/1341, Pallikandi Road, Calicut-3

- 110 Aisty Fruit Products, Thallakam P.O., Kottayam-686 016
- 111 Elite Drinks, Pattankad P.O. 688 531
- 112 Shiaaj Industries, Kalakuttam, Thiruvananthapuram. 695 582
- 113 Malankara Food Products, Pattam, Thiruvananthapuram 695 004
- 114 Arun Giri Food Products, Radhika Gardens, Panniyampadam, Mundur, Palghat. 678 592
- 115 Indian Dry Foods & Exports, Puthoor, P.O. Kottarakara Tk., Quilon Dt.
- 116 Modern Canning Industries, 49/1218. Chettupadukkara, Ponakkara Road, Edappally P.O., Cochin. 682 024
- 117 Sagra Food Products, Panachakam IX/536. A. Mannuthy 680 651
- 118 Southern Food Products, 8/81. A. Ollur Panchayat, Kuttanellur, Nethaji Road, Thrissur-14
- 119 Super Drinks, Kokkalai, Thrissur-1
- 120 Malabar Palatables, 15/1552. Puthiapalam Road, Chalapuram P.O., Calicut 673 002
- 121 Marry Fruit Products, Lavana vazhakulam, Muvattupuzha 686 670
- 122 namimuthar Farm products P. Ltd., TC 24/1028. W & C Hospital Road, Thycaud, Thiruvananthapuram
- 123 Fruiton Proudcts, Nettiadu, Panmana, Edappallikara P.O., Kollam 691 583
- 124 Riya Condiments, 20/1103, Cherumanassery Road, PO Kallai, Calicuty-3
- 125 Thriphy Products, 1.204, A. Ollur Panchayat, Thrissur Dt. 680 306
- 126 Konkan Food Industries, 4.1158, Cheralai, Cochin 682 002
- 127 Indian Foods & Species, 48/1748 B, Perumbatta Road, Elamakara, Cochin 682 026
- 128 Priyadarshini Charitable Society, 216/A. Ward No.3, Puthupariyaram PO, Thodupuzha 685-584
- 129 Thriveni Foods, AP 4.703, Nellimoodu PO, Thiruvananthapuram 695 524
- 130 Grandmas Food Products, S. No.549/7B/549/7A2, Peringuzha
- 131 Seven Charitable Association, 61-V, Temple Road, Vengoor, Kidangoor PO, Angamally 683 591
- 132 Pooram Foods, 11/70. A. West Vellanikkara, Madakkathara PO, Thrissur 680 656
- 133 Travancore Pineapple Canning Co., Chemmathur, Punalur
- 134 Popular Cool Drinks Factory, 1/21. Bazar Road, Mattancherry, Cochin-2
- 135 Kerala Pickles, TC No. 36/293. Palkulangara, Drainage Road, Thiruvananthapuram
- 136 Chatta Products, Chatta House, Chalad, Kannur-1
- 137 Tropical Cannors, Vellikulangara, via Kodakara, Near Chalakudi, Thrissur Dt.
- 138 Aluvilla Cottage Inds. Co-op. Soc. Ltd. Ayanimoodu, Vedicvachakoil, 695 501
- 139 Malappuram Handicrafts & Cottage Inds, Service Co-op. Soc. Ltd, 12/510. Jubilee Road, Malappuram Dt.
- 140 Darling Food Products, Alacode, Elamadesam P.O. Thodupuzha TK, Idukki Dt.
- 141 Kizhakkamkara Mahila Samajam (KIMS), Manvilla, Attipura Panchayat, H.No.A 189/11-Manvetta, Palakad, Road, Kulathoor, Thiruvananthapuram 695 583
- 142 Samco Fruit Products, 32/15. Padanapalam, Chalat Road, Cannanore 670 001
- 143 Kerala Gandhi Smarak Nidhi Fruit Product Processing Centre, Poovanchal P.O. 695 575

- 144 Standard Food Products, 16/466. Mohiuddinpatti, Parappil, Calicut-1  
145 A.D. Mohamed Ashraf Production, 12/55. Pilakool Main Road, Tellicherry-2  
146 Arkay Food Products, 28/741. Patturackal, Thrissur-1  
147 Rasana Foods, 12/484. Chalapuram, P.O., Calicut-2  
148 Paico Home Products, 9/717. B. Manthara Road, Cochin. 682 002  
149 Kwality Condiments, West Kallai, Calicut-3  
150 Mini Food Products, Chettikulangara, Mavelikkara-6  
151 Naveena Food Products, J.J. Bhavan, Keezhattingal, Attingal, P.O.  
152 Accelerated Freeze Drying Co., Ezhupunna. 688 548.  
153 Basraj Food Products, Puranattukara. 680 551  
154 Meghna Exports, Pariyaram, Kuppani, P.O. Thaliparamba, Cannanore Dt.  
155 Indian Foods & Flavours, Ovavanna Road, Calicut  
156 Jaycee Products, 43/404. C. Orrea Road, Pachalam, Cochin 682 012  
157 Lara Pickles & Condiments, 11/560. A. Maradu. Ernakulam. 682 304  
158 Kamala Food Products, 1/564. Temple roaad, Chalakara, Thrissur Dt.  
159 Omega Food Products, 20/588. Customs Road, Tellichery-1  
160 Niyo condiments, 20/468. Attikkal, Sae Mills road, East Kallai, Calicut – 3  
161 Asian Products, 3/138. Sri. Laxmi Mukkai Palghat  
162 Food Processing Co. Brindavan Gardens, Killikavu, Quilon. 691 004  
163 Sosya Pickles, Rachna theatre, Opp. Palipuram, Palghat Dt. 679 305  
164 Simpson Food Products, Maliyilpattu Veenad, Near Pashashilkavu, Vadakkevila,  
Quilon-10  
165 Devki Cottage Inds., 3/82, Choliya edakulam, Calicut. 633 306  
166 Modern Fruit Products, Marathakara P.O., Ollur, Thrissur Dt. 680 306  
167 Seenu Products, 7/592. College road, Palghat  
168 Chakola Beverages, Muringoor P.O., Chalakudo, Thrissur Dt. *68*  
169 Vocational Training Centre, Bethel Ashram, Mission Qrs, Thrissur  
170 Tropical Fruit Products, XVI/332. Main Road, Near Muncipal Office, Tripunithura  
682 301  
171 Mak Food Products, Gujrathi St. Calicut-1  
172 Attarwala Fruit Products Co., Needa Parambakunnu P.O. Veliparamba, Calicut-8  
173 Pycot Foods & Condiments, 24/263, Kalpadam Paramba, Kumhikoya Road,  
Azechavattam, Calicut-7  
174 Ponithura Industries, Kangazha. Kottayam Dt. 686 541  
175 S.B. Food Products, New House, VII/422, Perumkulam. 695 102  
176 Mascot Food Products, 14/480. Thottulipadam Road, Vallampoil west, Calicut  
177 The Dean, College of Horticulture, Kerala Agricultural University, Vellanikkara,  
Thrissur 680654  
178 Prathiksha Food Products, Panummandam, Malappuram – 676 106  
179 Guruji Food Products, 26/1451. A. Heera Manzil, Kommeri, Calicut – 673 007  
180 Chitra Food Products, Perumanzal, Mana PO, Attur, Thrissur Dist.  
181 Jessy Products, Gandhi Raod, 4.345, Nakkadiparamba, Calicut – 673 032  
182 Modern Food Products, 2/184. Nathalam Bazar, Nallalam, Calicut – 673 027  
183 Super King, Choondal House, Choondal Village, Thrissur – 680 502  
184 Preethi Food Products, 1/52 U.C. College, P. Alwaye – 603 102  
185 Leo Foods & Spices, 10 P/402 Chalad, Cannanore - 670 014

- 186 Beekay Food Products, 6/399, Chennkkal PO, Randathani, Malpuram – 676 510
- 187 G.g. Beverages, D. No.699 A. Pazhaveedu PO, Alleppy – 9
- 188 Abraham David, Rose Bldgs, Kayamkulam PO, Alleppey Dist.
- 189 Parvathi Food Products, Parvathi Nivas, Pulikkal Mada, Chelakara, Thrissur dist.
- 190 Aswathi Food Industries, Market Road, Udyampanoor, Ernakulam Dist.
- 191 Sree Vishnu Pickles, Manakad PO, Thodupuzha – 685 584
- 192 Sarathi Food Packers, Mini Indl. Estate, Manakad PO, Thodupuzha
- 193 Amba foods, IV/198. A. Chalakkottukara, Thrissur – 680 005
- 194 Divind Food Products, 12/398 Kayaparamba Road, Halwa Bazar, Calicut
- 195 Major Food Products, Kaithakkad, Cherrathur – 671 313
- 196 Tas Foods & Syrup, 15/2006, South Beach Road, Calicut – 673 001
- 197 Tilak Food Products, Kayikara Lane, Muttathara, Thiruvananthapuram – 695 008
- 198 Roshni Food Products, 46/1402, Vaduthala, Kochi – 682 023
- 199 Bismi Entreprises, VII/412, Gunapai Road, Marakadavu, Cochin-2
- 200 Essjay Cultivators & Food Processors, 1/426, Taj Mahal, Nalanchira, Thiruvananthapuram
- 201 Delicious Food Products, Ward XI.H.No.261, Mangad, Kilikollam, Kollam, Kerala
- 202 Vinayaka Food Products, Mancaud, PO, Thodupuzha, Kerala
- 203 Varma Foods & Spices, 9/730, A. Olavanna, Calicut – 25
- 204 Annapurna Condiments, 15/2010, South Beach Road, Calicut – 673 001
- 205 Mangala Foods, RS No.78/1, Palakulangara, PO, Taliparamba, Kannur Dist.
- 206 Nishi Foods & Condiments, 21/1697. A. Patterthodi, Payyanakkal, PO, Kallai, Calicut
- 207 Malavika Food Processing Unit, C/o. Block Devp. Officer, Mala Block, Kuruvilassery PO, Thrissur Dist. *D.P*
- 208 Aththi Food Products, 69 B. Vijaipuram Panchayat, Mannercaud PO, Kottayam – 686 019
- 209 Cranny's Food Products, VI/26, Mundakayam PO, Varikany – 686 513
- 210 Taste Food Products, Food Products, Onambalam, Mulavana, PO, Kollam – 691503
- 211 K.K. Food Products, 4/213, B&C Palathara, Kottakkal, Malapuram Dist.
- 212 Sagi Food Products, Karimkulam, Puthiyathura, PO, Thiruvananthapuram Dist.
- 213 Harisree Food Processing Unit, Haripad Block, Mannarsala, PO, Alleppey Dist.
- 214 Rafny Food Products, 31/139, Opp. St. Peter's Church, Chalil, Tellicherry – 4
- 215 Green Valley Beverages, VII/324/A. Kuttanellur, PO, Thrissur
- 216 Anurgrah Enterprises, IX/210, A. Nanthiattukunnam, Ezhikkara, N. Paravur, Ernakulam Dist.
- 217 Jyothi Brothers, VIII/205, Love Dale Railway Station, Road, Thiruvananthapuram – 695 582
- 218 Tropical Fruits, Kuravilangad, Kottayam Dist.
- 219 Fine Food Products, 4/370, Chenakkal, Kuttipuram, via. Kottakkal, Malapuram dist.
- 220 Pickles, Ambady TC-10/1064(2) Co-Op. Housing Gardens, Mannanmoola, Peroorkada, PO, Thiruvananthapuram – 695 005



- 221 Block Development Officer, Food Processing & Fruit Preservation Unit, Vypin Block, Ayyampilly PO, Ernakulam Dist.
- 222 Karikattil Enterprises, Ward No.III/621, S.No.77/4 B, Tycauttucherry PO, Shertallai – 688 528
- 223 Lovely Food Industries, Ward No.VII, D. No.203, Poochakkal, P.O., Shertalai – 688 526
- 224 Neema Food Products, Kunnupuram, Abdurachiman, PO, Malappuram Dist.
- 225 Prakash Food Products, 356/XX, Muthoor, Thiruvalla – 7
- 226 Chithra Foods, H. No.252, Vettarakad PO, Thrissur dist – 680 584
- 227 Puthur Food Products, Puthur PO, Thrissur
- 228 Sumithra Food Products, Ancherry PO, Thrissur
- 229 Devi Foods, Chirakkal Kovilakam, Kodungallur, Thrissur
- 230 Nirkan Food Products, Kalathode, Thrissur.

## APPENDIX IV

### NATIONAL INDUSTRIAL CLASSIFICATION (NIC) 1971 CODES AND DESCRIPTIONS – AN EXTRACT

Industry code Division group	Description of Industry
20-21	Manufacture of food products
200	Slaughtering, preparation and preservation of meat
201	Manufacture of dairy products
202	Canning and preservation of fruits and vegetables
203	Processing, canning and preservation of fish, crustacean and similar foods
204	Grain milling
205	Manufacture of bakery products
206	Manufacture and refining of sugar (vacuum pan sugar factories
207	Production of indigenous sugar, boora, khandsari, gur, etc. from sugarcane, palm juice etc.
208	Production of common salt
209	Manufacture of cocoa products and sugar confectionery (including sweet meats)
210	Manufacture of hydrogenated oils and vanaspati, ghee, etc.
211	Manufacture of vegetable oils and fats/other than hydrogenated
212	Manufacture of animal oils and fats, manufacture of fish oil
213	Processing and blending of tea including manufacture of instant tea
214	Coffee curing, roasting, grinding and blending etc.
215	Processing of edible nuts
216	Manufacture of ice
217	Manufacture of prepared animal and bird feed
218	Manufacture of starch
219	Manufacture of food products etc.

**APPENDIX V**

**FINANCIAL AGGREGATES OF SELECTED UNITS AS ON 31-03-2002**

(Rs. in lakhs)

Sl.No.	Fixed capital	Physical working capital	Working capital	Productive capital	Invested capital	Input	Output	Value addition
A	23.12	10.30	12.90	36.02	33.42	25.84	38.00	12.16
B	1.50	0.75	1.63	3.13	2.25	2.69	7.56	4.87
C	8.66	25.30	55.24	63.90	33.96	37.23	109.57	72.23
D	9.45	2.65	3.30	12.75	12.10	4.22	8.27	4.11
E	18.39	8.24	10.32	28.71	26.63	2.24	30.40	9.16
F	15.45	2.25	6.00	21.45	17.70	3.71	4.89	1.18
G	14.39	6.25	11.49	27.88	20.64	14.68	24.00	9.32
H	5.20	2.10	2.60	7.80	7.30	2.60	6.61	4.01
I	11.51	4.99	6.75	18.26	16.50	7.33	19.20	11.87
J	12.36	1.80	4.80	17.16	14.16	3.11	4.20	1.096
<b>Total</b>	<b>120.03</b>	<b>64.63</b>	<b>117.03</b>	<b>237.06</b>	<b>218.08</b>	<b>122.65</b>	<b>252.90</b>	<b>130.00</b>