CHAPTER IV

FOOD PROCESSING INDUSTRIES
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Introduction

Food occupies the first position among the hierarchical needs of human beings. Energy is required for sustaining all forms of life on the earth and so food is the basic need of mankind for survival. Food is intimately woven into the physical, economic, psychological, intellectual and social life of human beings. It is a part of his culture and is filled with many different meanings and symbolisms for all individuals at various ages and stages of their maturity. The primitive man was largely dependent for his food on fruits and animals. The discovery of fire marked a turning point in the process of civilization and man has learnt to cook food. He found that cooked food is tastier than uncooked food. During the course of time, man changed his food habits according to his taste, experience and availability of food materials and changing seasons of the years.

Food for consumption should have the proper appearance, colour, juiciness, texture, odour and taste. During the past few decades great advance have been made in the study of the whole field of the properties, preservation and processing of raw food and of the behaviour of finished products. The advancement of science and technology offered the people new food processing vessels, equipments and tools but still people was in search of new techniques to speed up the cooking process in order to cope up with fast changing lifestyle. Modern men and women who do not have sufficient time to cook food in the conventional methods have to yield themselves to the newer life styles as regards cooking and food habits.

Business houses ranging from small manufacturers to multinational corporations are capitalizing this situation and they have started innovating
cooking intermediaries. In spite of the pre-eminent position of food in day-to-day life, scientific research on many aspects of food production and consumption had not received the needed action. However, during recent decades there has been considerable progress in introducing science and technology in all aspects of the food production and consumption chain.

By and large consumers still perceive the conventional grinding to be the best due to purity, quality and natural taste. However, to a majority, this is far from practice due to constraints of time, non availability at regular prices and other reasons. During the past processed food items found favour with a considerably smaller segment and that too predominantly in urban area. However changing life style pattern is accelerating the shift faster than ever. One of the sectors, which are benefited from this changed environment, is the food-processing, especially products like curry powders, pickles, jam etc.

Food was historically processed for preserving the same against famine or for improving its taste and eating quality. Mechanical processing through equipment was developed to reduce the time and labour involved in manual methods. For a long period such preservation and preparation methods were only used on domestic scale to serve the needs of the family. However, as societies developed, specialization took place and trades developed. These were the fore runners of the present food processing industries.

Food being an integral part of human existence and survival, the need for food as a product would remain as long as mankind itself. The changing life style and preferences of consumers offer a golden opportunity for the food industry to transform itself into a major contributor to the national economy.

History of Food Processing

As our ancestors learned to use fire, they learned simple cooking, such as broiling hunted game or baking meat on hot stones. By smoking raw meat,
we can not only store meat longer, but also make meat tastes better, with smoke elements added. It is said that smoking was the first food processing in the world.

The origin of food processing goes all the way back to ancient Egypt, yet the period of those developments seems to symbolize the history of the culture of mankind. Nowadays, bread, which is characterized by its use of the fermentation action of yeast and which uses wheat flour as its raw material, is baked all over the world. The origins of beer also go back to Babylon and Egypt in the period from 3,000 to 5,000 BC. The foundation of the modern industry was built up with the introduction of machinery and technology of new methods from Germany. Nowadays, the processed foods that are thriving in grocery shops are modern processed foods and traditional foods, but their manufacturing technology, process control and manufacturing and packaging environmental facilities have been advanced and rationalized to an incomparable extent in the last 30 years. As a result, products with high quality and uniformity are now being manufactured. This is based on the advancement of food science, and is, moreover, due to the general introduction of hygienic, applied microbiology, mechanical engineering, chemical engineering, electronic engineering and high-polymer technology.

The most remarkable developments until now have been convenient pre-cooked frozen foods, retort pouch foods and dried foods. The mass production of excellent quality processed foods without using unnecessary food additives has been made possible in the last 30 years by grading and inspecting the process materials, carrying out proper inspections of processed foods, and advances in processing technology, installation and packaging technology and materials. The history of processed food is the history of the rationalization of advanced technology related to raw material treatment operations, processing operations, storage operations, other processing equipment, cleaning of
facilities, sterilizing and conservation treatment operations and effluent and waste treatment operations. Worthy of note recently the are developments in container and tank lorry transportation, concentration using membrane technology in processing operations, vacuum refrigeration, vacuum freezing and pressurized extrusion molding using two axle extruders. In storage operations, technologies such as vapor drying, heat exchange sterilization, deoxygenating agents, sterile filling packaging and PET bottle packaging have been developed. We have heard the plans of soft drinks manufacturers who want to switch from active sludge methods of wastewater treatment to methane fermentation methods.

The history of canning begins with a Frenchman named Nicolas Appert, who in 1810 discovered that when jar of food in which no air is present are boiled, the food will not spoil. The first food processing plant was located in England and began operating about 1813. Electronic appliances developed in the late 20th century used for a variety of food processing functions including kneading, chopping, blending and pulverizing. The food processor was invented by Pierre Verdon whose Le Magi Mix, a compact household version of his own earlier restaurant- scaled robot-coupe, was first exhibited in Paris in 1971.

Evolution of Food Processing Industries

The change over from fresh, natural food to processed food started about two hundred years ago when people began to prefer more refined flour because of its finer texture and milder flavour in their baking and cooking. Industrial processing of food started on a small scale in the nineteenth century. Towards the end of the century, an increase in scientific understanding started the change from craft based to science-based industry that is continuing today. The preparation of a wide range of ready to eat and convenience food is a relatively recent development. Today the food industry produces a wide variety of items,
which by various methods of processing and refining, are standardized, made palatable, attractive and quick and easy to prepare.

Modern trends have made many food sources into processed items. Food industry is developing in accordance with modern living. Almost all food groups are now processed into ready made or ready to taste items. Pre cooked or half cooked items are also available. Thus the food items are processed in very many ways and they are marketed in various forms. The people are at present more conscious than ever about the protein content and ayurvedic and medical value of what they consume. They are therefore more attracted towards natural and quality items. In the busy and time conscious modern world ready-made and semi-processed products including condiments and spices are more needed and in great demand.

**Objectives of Food Processing Industries**

The food processing industries have the below mentioned objectives

1. To extend the period during which a food remains wholesome by preservation techniques which inhibit microbiological or biochemical changes and thus allow time for distribution and home storage;

2. To increase variety in the diet by providing a range of attractive flavours, colours, aromas and textures in food.

3. To change the form of the food to allow further processing.

4. To provide the nutrients required for health

5. To generate income for the manufacturing company.

Food processing has been practiced from time immemorial at various levels, the more popular items being pappads, pickles etc. These products prepared in low scales by housewives to meet their family requirements are in fact processed foods. Today the food processing industry has assumed a more definite shape and based on the end product, it can be categorized as processed-
1. Fruits and Vegetables
2. Biscuits and bakery products
3. Instant/convenient foods
4. Confectionary and chocolates
5. Diary and Diary products
6. Soft drinks and fruit preparations
7. Beverage items
8. Fishery and Marine products
9. Meat and poultry

Each of these categories covers a wide range of product offering wide scope for processing activities.

**Classification of Food Processing Industries**

Food processing industries are industries, which transform food materials into edible articles by utilizing different methods of processing. All food processing involves a combination of procedures to achieve the intended changes to the raw materials. The food processing industries can be classified into-

1. Primary processors who produce simple homogenous products like ghee, oil, sugar etc.
2. Secondary processors who produce diversified products like chocolate, pickle, jam, curry powder, squash etc. by utilizing sophisticated techniques.
3. Tertiary processors producing food like infant food, breakfast cereals, noodles etc utilizing costly mode of processing.

The food products for the present study includes Curry Powder, Pickle, Jam, Squash, Pappad, Avil and Chips manufactured and sold under any particular brand name. Adorning the kitchen shelf of any employed women is a
plethora of instant mixes, semi cooked foods and ready to use cooking ingredients, which can save time for cooking. The workingwomen appreciate readymade mixes and similar items that aid them in cooking within their limited time. Pickles are very traditional items that are always having demand. Fruit based jams have gained popularity today, with the growing importance for bread and other snack items. The manufacture of squashes like orange, lemon, pineapple, mango and lime are making progress on commercial scale. The most traditional, ever in demand snack is chips, made of potato, tapioca, jackfruit and banana. Despite the development of various new items, there is hardly any drop noticed in the demand for these items, be it in urban, semi-urban or rural market. The manufacture of pappads and Avil has traditionally been controlled by the cottage and small-scale sector. But in the recent years, the corporate sector has also started showing interest in these items.

**Food Processing Industry- World Scenario**

Food processing industries have become synonymous with highly sophisticated and technically advanced countries. More than any other country, the United States has moved into food processing as a way of life. A great number of American housewives take jobs outside of their home-keeping duties, and therefore processed foods become an essential element in quick, carefree food preparation. As some food products are needed in almost every populated area, the food processing industries tend to be ubiquitous, that is they are found everywhere, widely dispersed in small individual firms located partly in relation to their raw material supplies and partly to the market they serve. Despite the generally fragmented structure of the industry, there are usually a few firms, which dominate in each particular branch of food processing.

The group of G-20 countries, a grouping of developing countries led by Brazil, China, India and South Africa has sought further policy reforms and market liberalizations on the part of the developed world. At the Geneva
meeting of WTO, the members have agreed on the further reduction of overall
trade distorting domestic support, the elimination of all forms of export
subsidies and reduction of import tariffs. The EU already anticipated this by
drastically reforming the Common Agricultural Policy. Besides agricultural
policies and trade arrangements, demand-supply trends and the macro
economic environment also significantly influence trade. Another important
factor is the change in currency rates.

India has the potential to become a major player in the world trade of
spices. She has the potential to grow into an important food processing country
and to tap the global trade in a big way, due to its varied agro-climatic
conditions, which assures steady supply of agro commodities and fruits through
out the year.

**Food Processing Industries in India-An Overview**

India being a mixed economy, with the public sector traditionally
dominant in infrastructure areas and the basic industries, is a vast country of
rich natural and human resources. Its development, therefore, depends on how
natural and human resources are best utilized. The varied agro-climatic
conditions provide enormous scope for the cultivation of almost all tropical,
subtropical and temperate fruits and vegetables. She has a global monopoly in
spices and spice products and has abundant spice resources. Spices and spice
products play an important role in our economy by using it domestically and
earning export revenue.

Prior to the First World War, all processed food was imported into the
country and there was no indigenous production. However, imports of
processed items were disrupted during the First World War and consumption
requirements of Defense forces called for indigenous supply of food products.
The outbreak of the Second World War rendered the imports of canned food
more difficult and the increased demand of processed food by armed forces
stationed in India provided a boost to the industry. A few large scale units sprang up in places like Bombay, Calcutta and Delhi where the raw materials were easily available. After independence, in the early fifties, the Government took several measures to develop this industry by imposing quota restrictions on imported food products, meeting all defense requirements from indigenous manufacture. The establishment of CFTRI at Mysore in 1950 was a landmark in the technological development of food industry in India.

A strong and dynamic food processing industry is important for diversification and commercialization of agriculture upon which depends 70 per cent of the country's population. The sector is critical to India's development, for it establishes a vital linkage and synergy between the two pillars of the economy - Industry and Agriculture. It ensures value addition to agricultural products, generates employment, enhances income of farmers and creates surplus for export of agro foods. Food processing industry in India is one of the largest in terms of production, consumption, export and growth prospects. The output from the sector is estimated at $65-70 billion or about Rs 3, 00,000 crore, out of which value added food products comprise $22.2 billion. The sector has been growing at about 7 per cent a year (The Hindu Business Line, April 6, 2007).

Agriculture being the main occupation of the country, there is a vast scope for development of food processing industry in India. The industry can not only meet the growing demand of processed food in local market but it also has better prospects for exports. Although we are one of the largest producers of raw materials for the food processing industry in the world, the industry itself is extremely underdeveloped in India. India can supply raw materials round the year from its available cultivable land of 51 per cent compared to the world average of just 11 per cent. It is the second largest producer of food, vegetables and fruits. But only about 2 per cent of total production is
commercially processed in India, which is far below the level compared to many developed and developing countries, such as Malaysia (83 per cent), Philippines (78 per cent), Brazil (70 per cent) and USA (60 to 70 per cent). (CFTRI)

Food processing offers excellent scope for development in an agrarian economy like India. Since the country produces a wide range of fruits, vegetables, cereals etc, there is high scope for the development of food processing industry. With the traditional home made preparations still in vogue, a new series of processed food preparations on a mass scale on commercial basis has emerged for the last ten to fifteen years.

**Status of Food Processing Industries**

Processed food has great demand both in international and domestic market. With a population of 1 billion, India has the potential to be one of the world's largest markets for agro food products. Currently, processed food accounts for merely 2 per cent of total food production in India, which is very low as compared to the western countries.

**Table 4.1**

<table>
<thead>
<tr>
<th>Rank of industry</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employment in million</td>
<td>1.6</td>
</tr>
<tr>
<td>Per cent of total industrial labour force</td>
<td>19</td>
</tr>
<tr>
<td>Total industry output in percentage</td>
<td>14</td>
</tr>
<tr>
<td>Output as per cent of GDP</td>
<td>5.5</td>
</tr>
<tr>
<td>Estimated turn over(US$ billion)</td>
<td>32.2</td>
</tr>
<tr>
<td>Unorganized sector(US$ billion)</td>
<td>24.9</td>
</tr>
</tbody>
</table>

Source: CUTS Centre for International Trade, Jaipur
The industry ranks fifth in size in the country in terms employment as it employs nearly 19 per cent of the industrial labour force. Above all, as stated in the Union Budget 2005-2006, this Industry would create 2.5 lakh jobs every year. Taking market forces such as rising income level and changing consumer behavior due to rapid economic growth into consideration, it is expected to reach a growth rate of 10 per cent in 2010 & 25 per cent in 2020 (Indian Food Processing, 2006- Market Research Report).

The food processing industry is labour intensive and offers major employment opportunity. The most important growth drivers for the Indian processed food is rapid economic growth that have led to an increase in the disposable income of urban and rural middle class which is the largest consumer group of processed food. Even though our processed sector has the deficiencies like poor infrastructure, poor distribution system, exhibitive packaging cost, relatively obsolete food laws and regulations, lack awareness of hygienic and nutritive value of food among consumers etc, the deficiencies are at the verge of extinction due to the evolvement of new technology introduction and educated urban consumers. These factors show that the food processing industry is a high priority industry and it has got a brilliant future.

From the very early times itself, spices have been used to add flavour to eatables and they were made domestically. But as time changed and with the manufacture of various kinds of machineries within our country itself, spice powders and condiments began to be available for various purposes. Though small scale and large-scale industrial units were involved in the production, the products of small-scale industrial units were mainly meant for exports. Hence, small-scale entrepreneurs as well as educated unemployed youth could start the industries to produce such products with a comparatively small investment.

A large number of food processing units in the country are in the small scale and household sector, which contributes substantially to the economy. In
most of the units in the cottage and small-scale sectors, traditional methods of processing are predominant. The government has encouraged the development of co-operatives in certain areas including the processing and marketing of food products. However, a number of large Indian and multinational groups have a strong presence in this sector and have made important contribution to its development.

The food processing industries in India are broadly classified into (a) unorganized and cottage scale industries and (b) organized processed food industries, with further division into the following sub-sectors:

1. Primary food processing
2. Spice and horticultural products
3. Diary and live stock products
4. Fish and fish products and
5. Consumer goods industry (other processed food).

**Importance of Food Processing Industries**

One of the most important growth drivers for the Indian processed food is rapid economic growth that has lead to an increase in the disposable income of emerging strong urban and rural middle class people, which is the target group for processed food. The second growth driver is socio-cultural change, which is helping to create a mindset of acceptance of processed food. The third growth driver is the change in food habits. Though all these conditions are necessary for the growth of the processed foods, they are not sufficient. Ultimately, it is the technology and innovation, which drives the growth. Food processing industry in India has obtained significant position in recent years and this can be attributed to the following factors.

1. It is more labour intensive, particularly at the unskilled level. Hence workers of lower strata without expertise can be provided effective
employment. It provides employment opportunities especially for the rural population.

2. It can be promoted and managed easily by women folk. Even widows and destitute can take up such units to earn their living comfortably.

3. It does not require high know-how. Our traditional cooking methods with very minor alterations will be sufficient for the products in this sector.

4. It leads to better utilization of the varied cultivation in our country. Much of the items otherwise being wasted could be put to productive purposes.

5. Its products enjoy a great export market. So, concerted efforts in this area are of national interest.

6. It requires only simple infrastructure facilities and does not require elaborate governmental support.

7. It assures stable prices for the produce of the farmers and thereby stimulates agricultural production.

8. It promotes co-operative movement and ensures participation of the producer farmers in the development process.

9. It is considered as a high priority sector for bank finance as it requires high working capital for preservation and packaging, as the raw materials are available only in a particular season.

Policies and Regulations-

Government Policy

The Government has been trying to simplify the support procedures involved in establishing food processing units. The food items are products for public consumption. So it must be prepared under the most hygienic conditions and methods. The final product should satisfy basic specifications. To ensure
this, the Government has prescribed the following registrations as pre-requisites before venturing into any food processing activity.

1. Registration with the Department of Food, Government of India to obtain FPO License for dealing in fruit and vegetable processing.

2. PFA licence from the Health Department concerned for engaging processing of cereal, pulse and other items.

3. For spices and pickles, AGMARK specifications are obligatory. Conformity with ISI standards for items other than spices though preferable, is not obligatory.

The food processing industry is declared as a priority sector industry. All food processing industries other than milk food, malted foods and flour, and a few items reserved for the small scale sector, included in the list of high priority industries, are eligible for automatic approval for 51 per cent foreign equity participation. All items of packaging for food processing industries, excluding the items reserved for small-scale sector, are also eligible for this facility. There is no requirement for obtaining industrial license for setting up or expanding capacity in a food processing industry, provided the unit is not located within 25 kilometers from the property of the standard urban area limits of a city having a population of more than one million, except in case of distillation and brewing of alcoholic drinks, manufacture of sugar animal fats and oils. There has been liberalization in the import export policy. Agro based units are also allowed to be set up as 100 per cent export oriented units. To encourage the development of agro-based industries, the government has exempted agro-based products like canned fruits, dried vegetables, jams, pickles etc, from excise duties entirely.
Regulations

To ensure proper development and growth of the food-processing sector, the government has instituted various laws and regulations. The various regulations governing this industry can be broadly classified into two, viz, compulsory legislation and voluntary standards.

A. Compulsory Legislations

1. Prevention of Food Adulteration Act, 1954

This is the basic statute intended to protect the common consumer against the supply of adulterated food and specifies different standards on various articles of food. The standards are of minimum quality level intended for ensuring safety in the consumption of food items and for safeguarding against harmful impurities, adulteration etc.

2. Essential Commodities Act, 1954

The main objectives of the control orders formulated under the provisions of this Act are to regulate the manufacture, commerce and distribution of essential commodities including food. The orders include-

(a) Fruit Products Order, 1955- This order regulates manufacture and distribution of all fruit and vegetable products, sweetened aerated waters, vinegar and synthetic syrups. Manufacture or relabelling of these products can be carried out only after obtaining a valid license from the Ministry of Food Processing Industries.

(b) Solved Extracted Oils, De-oiled Meat and Edible Flour Control Order, 1967 and Vegetable Product Control Order, 1976- These orders control the production and distribution of solvent extracted oils, deoiled meal, edible flours and hydrogenated vegetable oils.
(c) **Meat Products Control Order, 1973** - This order regulates manufacture, quality and sale of all meat products.

(d) **Milk and Milk Products Order, 1992** - This order provides for setting up an advisory board to advise the government on the production, sale, purchase and distribution of milk powder.

3. **Standards on Weights and Measures (Packaged Commodities) Rule, 1977**

   These rules lay down certain obligatory conditions for all commodities in the packed form with respect to their quantity declaration.

4. **Export (Quality Control and Inspection) Act, 1963**

   This Act notifies a large number of exportable commodities for compulsory pre-shipment inspection and quality control.

B. **Voluntary Standards**

   There are two organizations in dealing with the voluntary standardization and certification systems in food.

1. **Bureau of Indian Standards (BIS)**

   This organization is responsible for the formulation of Indian Standards in the processed food sector and their implementation by promotion and through voluntary and third party certification system. Manufacturers complying with the standard laid down by BIS can obtain the ‘ISI’ mark, which can be exhibited on their product package.

2. **Directorate of Marketing and Inspection (DMI)**

   This organization enforces the Agricultural Produce (Grading and Marking) Act, 1937, which prescribes Grade Standards for agricultural and allied commodities, which are known as ‘Agmark’ Standards.
3. **Eco-Mark**

The Ministry of Environment and Forests have initiated labelling of environment friendly products, on a national basis. With the consciousness of environment conservation growing day by day the adoption of ECO-MARK in different categories of food products will become necessary. The products will have to carry ECO-MARK a new standard certifying them environment friendly. The scheme provides to indentifying, accreditation and labelling of consumer products which do least damage to the environment and also meet the quality standards/requirements of the relevant Indian Standard for the product. Some of the food products identified under the ECO-MARK Certification are Tea, Coffee, Refined Vegetable oils, Vanaspati, Food Additives/Preservatives, Processed Fruits and Vegetable Products, Infant Foods and Beverages.

4. **ISO Standards**

With the increasing focus being given to the management of quality worldwide, the International Standards Organisation has introduced the quality system standards ISO 9000 series. These Standards provide guidelines and criteria for the formal control of products and services by the manufacturing company and assure the purchaser/consumer a consistent acceptable standard of products and services. ISO Standards reflects a long term concepts and terminology, quality systems and supporting technologies.

Many of these laws were framed some fifty years ago like Prevention of Food Adulteration Act. Similarly many of the statutory orders like Fruit Products Order were made when there was acute scarcity of food items. In the context of liberalization these laws throttle development and invariably work as dampeners for the growth of the industry. Thus there is an acute need for harmonizing the existing food laws and bring about a development orientation to facilitate faster growth of the industry.
Food Safety and Standards Bill 2005

This is a new statute that integrates some different food related laws, administered by different government departments and ministries, simplifying the administration for both the government and the industry. By consolidating several different laws for the food sector, the proposed bill seeks to establish a single reference point for all matters relating to food safety and standards.

The Food Safety and Standards Bill, 2006 as passed by Parliament have been enacted from August 24. The enactment takes care of international practices in guiding and regulating persons engaged in the manufacture, marketing, processing, handling, transportation, import and sale of food. It seeks to serve the consumers' interests through food safety systems. It sets scientific standards and transparency to meet the dynamic needs of the food trade and industry sector as also international trade practices in processed food.

Food Processing Industry in India- Export Trade

Growth of food processing industry will bring immense benefits to the economy, raising agricultural return, ensuring productivity, creating employment and raising the standard of the very large number of people through out the country, especially in the rural areas. Economic liberalization and rising consumer prosperity is opening up new opportunities for diversification in food processing sector. Liberalization of world trade will further open up new vistas for growth.

WTO and Indian Food Industry

Globalization of the food industry is being accelerated at a faster pace than ever. To compete in the international agro food sector, it is important to integrate our quality standards with those already sharing a strong hold in the international food market. Today India is also finding its way through the
global food market. International organizations like WTO and agreements like GATT etc play an inevitable role in the globalization of agro-food sector.

India by virtue of being a member of the World Trade Organization (WTO), has agreed to abide by the WTO stipulations on trade. Traditional territorial barriers were thus slashed, making way for free trade. The market forces of demand and supply have been in serious engagement with each other with the inception of WTO in 1995. A series of agreements like Sanitary and Phyto-Sanitary (SPS) and Technical Barriers to Trade (TBT) has impacted production system of the primary agricultural products in addition to the Agreement on Agriculture (AoA).

**AoA:** The AoA has revealed serious implications for domestic agriculture production and farm incomes in India. In a case study done by FAO on the implications of AoA on developing countries, it has been observed that there was asymmetry in the growth of food imports and the growth of agriculture exports.

**SPS:** The SPS agreement concerns the protection of animal, plant or human health or life from food borne risks and animal health or life from food borne risks and animal and plant carried diseases.

**TBT:** The TBT Agreement was developed principally for the purpose of ensuring those technical standards, and producers for assessing the conformity of those technical standards as well as related regulations, do not create unnecessary obstacles to international trade.

India is almost sitting on a goldmine of processed food, which can become top foreign exchange earner provided we follow appropriate policies and capture foreign market. Indian food processing industry is becoming an attractive FDI investment and ranked seventh in 2005-06 in terms of highest FDI receiving sector. Details of FDI inflow since 2001-02 is as under-
### Table 4.2
FDI in Food Processing

<table>
<thead>
<tr>
<th>Year</th>
<th>FDI in Rs. crore</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up to 2001-'02</td>
<td>1036.12</td>
</tr>
<tr>
<td>2002-'03</td>
<td>176.53</td>
</tr>
<tr>
<td>2003-'04</td>
<td>510.85</td>
</tr>
<tr>
<td>2004-'05</td>
<td>174.08</td>
</tr>
<tr>
<td>2005-'06</td>
<td>182.94</td>
</tr>
<tr>
<td>2006-'07(Apr-Dec)</td>
<td>222</td>
</tr>
<tr>
<td>Grand Total</td>
<td>2500.65</td>
</tr>
</tbody>
</table>

Source: MOFPI, Annual Report 2006-'07

The total inflow of FDI in food processing sector up to 2006-'07 (up to Dec, 2006) was Rs. 2500.65 crore. During 2005-'06, the FDI worth Rs.182.94 crore was received when compared to Rs. 174.08 in 2004-'05.

In spite of significant share within the country, India has only one percent share in the world trade of processed food items though the country has huge export potential. The main reason for this small share is the rejection of the food and manufactured products exported on the ground of environmental and safety standards. There is a wide disparity between the food quality standards that Indian firms need to meet in domestic markets and those it needs when accessing foreign markets. While most developed countries have adopted a high level of food safety standards taking into consideration the health and hygiene factors, developing and least developing countries (LDCs), including India are yet to adopt such stringent safety standards. This is either due to the lack of financial resource or technical expertise with the government. Even if such standards are adopted, most of the producers and exporters being the small and medium enterprises in nature fail to incorporate such standards in
their production process due to their limited financial capacity and expertise, thus ending up losing export order.

Most of the Indian exporters are operating in small scale, exporting low value added products to small traders overseas, dealing in bulk commodities which are then reprocessed and packed by the importers to increase their margins of profit multifold. The export of fresh and processed food products has been rather dismal and needs therefore in-depth study for redressal and to plan out a blue-print to achieve success which is consistent and sustainable with a steady growth rate.

**Table 4.3**

**Export of Processed Food products (2005-’06)**

<table>
<thead>
<tr>
<th>Items</th>
<th>Quantity (In M.T.)</th>
<th>Value (Rs. In Crores)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Processed Fruits and Vegetables</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dried and Preserved Vegetables</td>
<td>566238</td>
<td>1459.17</td>
</tr>
<tr>
<td>Mango Pulp</td>
<td>134613</td>
<td>364.24</td>
</tr>
<tr>
<td>Pickle and Chutney</td>
<td>135382</td>
<td>260.98</td>
</tr>
<tr>
<td>Other Processed fruits and Vegetables</td>
<td>107335</td>
<td>370.21</td>
</tr>
<tr>
<td>Total for Processed Fruits and Vegetables</td>
<td>501826</td>
<td>1359.54</td>
</tr>
<tr>
<td><strong>Animal Products</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Buffalo Meat</td>
<td>459938</td>
<td>2629.57</td>
</tr>
<tr>
<td>Sheep/ Goat Meat</td>
<td>7177.51</td>
<td>80.37</td>
</tr>
<tr>
<td>Poultry Products</td>
<td>145889</td>
<td>167.58</td>
</tr>
<tr>
<td>Dairy Products</td>
<td>76515</td>
<td>668.50</td>
</tr>
<tr>
<td>Animal Casings</td>
<td>1125.82</td>
<td>17.51</td>
</tr>
<tr>
<td>Processed Meat</td>
<td>256.04</td>
<td>2.43</td>
</tr>
<tr>
<td>Total for Animal Products</td>
<td>690901</td>
<td>3566.96</td>
</tr>
<tr>
<td>Items</td>
<td>Quantity (In M.T.)</td>
<td>Value (Rs. In Crores)</td>
</tr>
<tr>
<td>-----------------------------------</td>
<td>--------------------</td>
<td>-----------------------</td>
</tr>
<tr>
<td>Groundnuts</td>
<td>190053</td>
<td>513.69</td>
</tr>
<tr>
<td>Guargum</td>
<td>186718</td>
<td>1049.23</td>
</tr>
<tr>
<td>Jaggery and Confectionary</td>
<td>107197</td>
<td>227.57</td>
</tr>
<tr>
<td>Cocoa Products</td>
<td>2147.09</td>
<td>21.83</td>
</tr>
<tr>
<td>Cereal Preparations</td>
<td>76880.6</td>
<td>393.96</td>
</tr>
<tr>
<td>Alcoholic and Non-Alcoholic Beverages</td>
<td>49587.9</td>
<td>117.20</td>
</tr>
<tr>
<td>Miscellaneous Preparations</td>
<td>49606.7</td>
<td>225.77</td>
</tr>
<tr>
<td>Milled Products</td>
<td>50901.5</td>
<td>64.68</td>
</tr>
<tr>
<td>Total for Other Processed Food</td>
<td>713092</td>
<td>2613.93</td>
</tr>
<tr>
<td>Grand Total</td>
<td>1905819</td>
<td>7539.43</td>
</tr>
</tbody>
</table>

Source: MOFPI, Annual Report, 2006-'07

The Ministry of Food Processing Industries has been encouraging the new processing capacities for agro-food products through its various policy initiatives and plan schemes providing financial incentives for setting up of new units and modernization of existing units.

Every stage in the food chain needs to be standardized and with the rapid expansion in processed foods trade globally; assurance of a certain safety standard is a minimum requirement for future trade with developed countries.

**Safety and Quality of Processed Food**

Food product safety relates to a number of factors, which may be inherent in food or external to it. Food is unsafe if it contains substances hazardous to health. Food processing protocols often have steps to minimize their presence and adverse effects. The premises where food is processed needs careful consideration for control measures to avoid it being a source of
microbial contamination. Most food processing units are designed well, but regular maintenance of the premises for hygienic and sanitary conditions often gets least attention. The procedures adopted for maintenance of hygiene should be compatible with the food processing operation. It is most important to ensure personnel hygiene in food industry, because personnel are a potential source of food-borne pathogens. The machinery, equipment and implements in food processing require periodic cleaning and disinfection.

Food technologies play a pivotal role in improving the nutritional quality of foods, reduces losses due to spoilage or contamination, ensuring it safety and preventing food born diseases. The trade scenario has changed world over especially after the WTO agreements came into effect. All countries need adequate food control programmes to ensure that national food suppliers are safe, of good quality and available in adequate amounts at affordable prices to ensure an acceptable nutritional and health status for all population groups. Food control includes all activities carried out to ensure the quality, safety and honest presentation of the food at all stages from primary production, through processing and storage, to marketing and consumption.

**Operating Gadgets for Quality Assurance**

It is a well established fact that the world over food industry is shifting from Quality Control to Quality Assurance scheme, which means instead of checking the end products; there should be a code of good agricultural practices. Following are some of the schemes for quality assurance.

**Good Manufacturing Process (GMP):** GMP (also referred to as 'CGMP' or 'Current Good Manufacturing Practice') is a term that is recognized worldwide for the control and management of manufacturing and quality control testing of foods and pharmaceutical products.
The Prevention of Food Adulteration Act (PFA): This Act is the basic statute that is intended to protect the common consumer against the supply of adulterated food. The Prevention of Food Adulteration Act, 1954 focuses primarily on the establishment of regulatory standards for primary food products, which constitute the bulk of the Indian diet.

Bureau of Indian Standards (BIS): BIS is the largest body for formulating standards for various food items. These standards are also voluntary. The activities of BIS are two fold the formulation of Indian standards in the processed foods sector and the implementation of standards through promotion and through voluntary and third party certification systems.

Agriculture Produce (Grading & Marking) Act: This Act is commonly known as AGMARK and is voluntary. The Act lays down the specifications for various agricultural commodities including some processed foods. In the field of grading and standardization under the ‘Agricultural Produce (Grading and Marketing) Act’, grades and standards are fixed for many goods like ghee, flour, eggs, etc. The graded goods are given a seal "AGMARK" by the Agricultural Marketing Department.

ISO 9001:2000: ISO 9001 is a generic name given to a family of standards developed to provide a framework around which a quality management system can effectively be based. The ISO 9000 family of standards was revised in December 2000. ISO 9000 family of standards can be implemented by any organization irrespective of size, nature or complexity of the business.

ISO-22000: The International Organization for Standardization (ISO) is in the process of developing a specific standard for food processors setting out safety management procedures. The development of ISO 22000 will become a key part in the efforts by governments and regulators to keep contaminants out of the food chain.
**Codex**: It is Latin word for food law. It incorporates international standards for food, its production, safety and is maintained by the Codex Alimentarius Commission. The Codex contract Point in India is the Directorate General of Health Services (DGHS) in the Ministry of Health; however, the Ministry of Food processing Industries is closely associated with the activities of Codex Alimentarius.

**Hazard Analysis and Critical Control Point (HACCP)**: The HACCP concept was developed in the 1960’s as a pro-active alternative to end product testing to ensure food safety. The impetus behind modern HACCP programs first began as a natural extension of Good Manufacturing Practices (GMPs) that food companies had been using as a part of their normal operations. HACCP is a systematic preventative approach to food safety that addresses physical, chemical and biological hazards as a means of prevention rather than finished product inspection. HACCP is used in the food industry to identify potential food safety hazards, so that key actions, known as Critical Control Points (CCP's) can be taken to reduce or eliminate the risk of the hazards being realised. The system is used at all stages of food production and preparation processes. Today HACCP is being applied to industries other than food, such as cosmetics and pharmaceuticals.

India is the second largest food producer in the world after China and with the wide range of climatic conditions; we are growing a large variety of foods in the country. All these primary raw foods when processed through the application of modern technologies can be converted into value added products for both the domestic and world markets. India can thus become a ‘food factory of the world’ and be a global player in processed food products.

In spite of the efforts made by the Government, the value addition in the food sector is very low. We are not competitive and are not able to add value.
Not much of value captured in the industry as can be seen from the following figures.

Table 4.4

India’s Position in Value Addition in Food Industry

<table>
<thead>
<tr>
<th>Country</th>
<th>Value addition in food industry</th>
</tr>
</thead>
<tbody>
<tr>
<td>India</td>
<td>7 percent</td>
</tr>
<tr>
<td>China</td>
<td>23 percent</td>
</tr>
<tr>
<td>Philippines</td>
<td>45 percent</td>
</tr>
</tbody>
</table>

Source: Beverage and Food World, February, 2007

Value addition in India is thus one of the lowest, i.e., 7 per cent compared to 23 per cent in China and 45 per cent in Philippines. The Government of India targets to bring it to 10 per cent by 2010 and 25 per cent by 2025. (Beverage and Food World, February, 2007). Thus the food processing sector is not properly exploited in India. In Kerala also it is still in its initial stage.

Food Processing Industries in Kerala

For a greatly populous and developing country like India, where an enormously big chunk of population is yet to be freed from the grip of hunger, the importance of an efficient system of agriculture marketing can hardly be emphasized. The state of Kerala is one of the most commercialized regional economies in India. Marketing of agricultural produce is of special significance in Kerala where high value cash crops dominate the agricultural sector.

Kerala has an abundance of natural and manpower resources and skills. The economy of Kerala, like any State of India is predominantly agrarian where people depends more on agriculture, livestock raising and cash crop cultivation for their livelihood. The natural resources of Kerala combined with the skilled manpower are identified as the base power for all economic
activities of the State. The industrial field is also dominated by agricultural activities. The food processing sector is one of the key pillars of Kerala’s industrial development. It has been recognized as one of the thrust sectors in the state and is eligible for specialized consideration. The industrial policy also has given special attention to the food processing sector and the state government has initiated various steps to promote the food processing sector. The policy has brought a paradigm shift in government’s approach to investment with primary position given to private sector and with government playing a role of facilitator.

The Food Parks of Kerala Industrial Infrastructure Development Corporation (KINFRA), growth centres of Kerala State Industrial Development Corporation (KSIDC) etc, would meet the specific requirements for the entrepreneurs interested in setting up of a venture in this sector. The Agency for the Development of Food Processing Industries in Kerala (ADFIK), the food processing wing set up by Kerala Industrial Infrastructure Development Corporation (KINFRA), has embarked upon a brand creation campaign for the food processing sector in the state. ADFIK was set up in 2004 to exclusively focus on promotional and developmental needs of the food processing sector of the state. ADFIK plays the pivotal role as a catalyst by providing a range of entrepreneurial, infrastructural, technical, educational and promotional services to the food processing industry. So far, KINFRA has successfully developed 14 theme-based industrial parks in the State. These include KINFRA Export Promotion Industrial Parks Ltd., Kochi; KINFRA International Apparel Park, Thiruvananthapuram; KINFRA Film & Video Park, Thiruvananthapuram; KINFRA Food Processing Park, Malappuram; Hi-tech Park, Kochi; Neo Space, Malappuram; and KINFRA Small Industries Parks in Thiruvananthapuram, Ernakulam, Thrissur, Wayanad, Kannur and Kasargod districts. Mega Food Park, Wayanad and Spices Park, Idukki are the two proposed food parks of KINFRA in the recent years.
Kerala also offers a rich raw material base for a range of processing industries. It has a raw material base for products related to marine life, spices, cashew, herbals, fruits and vegetables and diary. The major food products being produced in Kerala are canned and bottled fruits and vegetables, jams, squashes, curry powders, pickles etc. The following aspects can analyze the Kerala’s food processing industries.

**Human Resources**

Kerala is a cent per cent literate State of India with the availability of the most skilled labour. Kerala possess the country’s lowest infant mortality, highest life expectancy rates and the highest physical quality of life. The people of Kerala are very much aware and conscious on food safety and hygiene. The State is already the densest cluster of science and technology personnel in India. This sector provides more employment per unit of investment.

**Infrastructure**

The emergence of food processing industry in Kerala is in the offing and the development of industrial infrastructure oriented towards food processing sector is the need of the hour. Kerala Industrial Infrastructure Development Corporation (KINFRA) is the nodal agency for the promotion of food processing industries in the State which gives access to world class food processing technologies, facilities and standards, including extensive research and development capabilities brought in by research institute such as CFTRI. A separate agency named Agency for Development of Food Processing Industries in Kerala (ADFIK) has been formed under KINFRA for the specific purpose of developing food-processing industries in the State and to function as facilitator to the nodal agency for the implementation of Government of India scheme. Kerala set up a world-class food park at Kakkanchery in Malappuram District which is the first food-processing park in India.
Food Safety

The awareness of food quality and safety is important for the comprehensive development of food processing industries in the State. The trade scenario has changed especially after the WTO agreements came into effect. Codex Alimentarius Commission recommended standards and guidelines regarding the various aspects of food processing industry. A Hazard Analysis and Critical Control Point (HACCP) approach is recommended wherever possible to enhance the food safety. Government of Kerala has been taking various efforts in implementing Food Quality and Safety Hygiene (HACCP) Programme in the food processing sector and for facilitating HACCP certification for the food industry and other food related vendors, National Centre for HACCP certification (NCHC) has been set up in Kerala Bureau of Industrial Promotion (K-BIP). NCHC is the quality organization of Government of Kerala providing professional and cost effective assessment, training and certification of HACCP system for food industry and other food related vendors. K-BIP has been appointed by the government as nodal agency for HACCP certification, and the State –level programme for implementation for HACCP certification and State –level programme for implementation of HACCP system has already been launched.

Several food processing units have already been chosen by NCHC for audit and certification for the HACCP system M/s. Saj Flight Services Pvt Ltd., Thiruvananthapuram is one of the first food processing units undertaken by NCHC for HACCP certification. The list of HACCP certified units in Kerala is given below.

Institutions in Food Processing Sector

There are more than 25 institutions in Kerala, which provide a rich bank of technical talent, which may be used for reengineering or adapting international practices to local considerations. There are premier research institutions like the Regional Research Laboratory, Tropical Botanical Garden
and Research Institute, Plantation Crop Research Institute etc. as well as Agriculture Colleges/ Universities and Research Institutions in the State.

**Policy Support**

The Central and the State Government are giving great consideration for the food processing industries. The new Industrial Policy announced by the Government of Kerala has given special importance to the food processing industries based in Kerala and has given the status of priority sector. Specialized Entrepreneurial Development Programmes for the entrepreneurs based in this sector and special incentives will be provided for units manufacturing innovative value added products. Up to 25 per cent (maximum 50 lakhs) of the investment required for building, machinery, wages etc is being granted as financial aid. This is available also for setting up new plant as well as developing the existing ones. (vyavasaya Keralam, March, 2005). All 100 per cent export oriented units and tiny, small, medium or large units in sectors like information technology, tourism, agro-based business including food processing, ready-made garments, Ayurvedic medicines, mining, marine products, light engineering, biotechnology & rubber based industries are considered as thrust sectors. The Government’s Industrial policy, which gives prominence to these sectors, offers a promotional package for them encompassing specific incentives, support for research and technology development, improved information sharing and assistance in marketing and export promotion.

**Marketing**

The annual demand for the processed food in Kerala varies from 2000-150000 tonnes (CFTRI). As per the data available for food processing units in Kerala, their net sales have increased by 9.41 per cent in 2005-06 against the previous year (Confederation of Indian Industry). If these value added products maintain a high quality with the help of best-developed technology, our
entrepreneurs will definitely be able to make a gain in both the domestic and foreign market.

**Exports**

The prospects for food and fruit processing and the marketing for food products are immense in Kerala. In the present global economic scenario, the export is more beneficial. Food processing is a major sector offering large potential for exports. The major food products exported from Kerala are spices, pickles and chutneys, processed fruits, vegetables etc. details of major commodities exported from Kerala for the last four years is given below.

**Table 4.5**

**Industrial Exports from Kerala**

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Item</th>
<th>Qty (MT)</th>
<th>Value (Rs)</th>
<th>Qty (MT)</th>
<th>Value (Rs)</th>
<th>Qty (MT)</th>
<th>Value (Rs)</th>
<th>Qty (MT)</th>
<th>Value (Rs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Marine Products</td>
<td>77851</td>
<td>995</td>
<td>87508</td>
<td>1205</td>
<td>87378</td>
<td>1158</td>
<td>95737</td>
<td>1240</td>
</tr>
<tr>
<td>2</td>
<td>Spices</td>
<td>55750</td>
<td>620</td>
<td>49386</td>
<td>660</td>
<td>49655</td>
<td>779</td>
<td>54342</td>
<td>862</td>
</tr>
<tr>
<td>3</td>
<td>Coffee</td>
<td>126900</td>
<td>735</td>
<td>132247</td>
<td>865</td>
<td>99933</td>
<td>842</td>
<td>88258</td>
<td>765</td>
</tr>
<tr>
<td>4</td>
<td>Tea</td>
<td>53071</td>
<td>351</td>
<td>73802</td>
<td>518</td>
<td>57966</td>
<td>370</td>
<td>79274</td>
<td>415</td>
</tr>
<tr>
<td>5</td>
<td>Fruits &amp; vegetables</td>
<td>-</td>
<td>189</td>
<td>-</td>
<td>250</td>
<td>-</td>
<td>395</td>
<td>-</td>
<td>420</td>
</tr>
</tbody>
</table>

Source: Kerexil, Thiruvananthapuram (2006-'07)

Performance in industrial exports of all major products has been recording a positive growth year by year except for coffee, cotton garments and piece goods. In food processing sector, export of marine products increased from 1158 crores to 1240 crores, spices from 779 crores to 862 crores, tea from 370 crores to 415 crores and fruits and vegetables from 395 crores to 420 crores during 2005-'06 when compared to the previous year.
Food processing industry has a bright future in Kerala. In a state like Kerala, where the cost of labour is comparatively higher, agricultural products will get a good price only if value addition is made of such products. Available resources can be fully utilized only if processing centre comes up. The State has immense scope for products like curry powder, pickle, jam, squash, pappad, avil and chips. Most of these are simple projects, which can be started as small scale or cottage units with comparatively small investment. These products have good market as they are of daily domestic use. The marketing potential of chips made of jackfruit; banana, tapioca and potato are still to be properly exploited.

**Table 4.6**

District wise List of Small Scale Industrial units, including Food Processing Units, in Kerala as on 31-03-2006

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>District</th>
<th>Total number of SSI Units</th>
<th>Number of SSI food processing units</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Thiruvananthapuram</td>
<td>30428</td>
<td>322</td>
<td>1.06</td>
</tr>
<tr>
<td>2</td>
<td>Kollam</td>
<td>28371</td>
<td>132</td>
<td>0.47</td>
</tr>
<tr>
<td>3</td>
<td>Alappuzha</td>
<td>26164</td>
<td>246</td>
<td>0.94</td>
</tr>
<tr>
<td>4</td>
<td>Kottayam</td>
<td>28931</td>
<td>299</td>
<td>1.03</td>
</tr>
<tr>
<td>5</td>
<td>Pathanamthitta</td>
<td>13898</td>
<td>118</td>
<td>0.85</td>
</tr>
<tr>
<td>6</td>
<td>Idukki</td>
<td>7700</td>
<td>85</td>
<td>1.10</td>
</tr>
<tr>
<td>7</td>
<td>Eranakulam</td>
<td>36690</td>
<td>389</td>
<td>1.06</td>
</tr>
<tr>
<td>8</td>
<td>Thrissur</td>
<td>30379</td>
<td>343</td>
<td>1.12</td>
</tr>
<tr>
<td>9</td>
<td>Palakkad</td>
<td>22126</td>
<td>188</td>
<td>0.84</td>
</tr>
<tr>
<td>10</td>
<td>Malappuram</td>
<td>11411</td>
<td>98</td>
<td>0.86</td>
</tr>
<tr>
<td>11</td>
<td>Kozhikode</td>
<td>21092</td>
<td>311</td>
<td>1.47</td>
</tr>
<tr>
<td>12</td>
<td>Wayanad</td>
<td>4652</td>
<td>41</td>
<td>0.88</td>
</tr>
<tr>
<td>13</td>
<td>Kannur</td>
<td>15032</td>
<td>104</td>
<td>0.69</td>
</tr>
<tr>
<td>14</td>
<td>Kasaragod</td>
<td>7336</td>
<td>57</td>
<td>0.78</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>286210</strong></td>
<td><strong>2638</strong></td>
<td><strong>0.92</strong></td>
</tr>
</tbody>
</table>

Source: Statistics for planning and Directorate of Industries and Commerce
By the end of March 2006, total number of small scale industrial units in Kerala was 286210, out of which there were only 2638 units in the food processing sector which is only 0.92 per cent. The highest percentage concentration is in Kozhikode district (1.47 per cent) followed by Thrissur, Idukki, Ernakulam and Thiruvananthapuram and the lowest is in Kollam. Here food processing sector includes the units engaged in the manufacture of curry powder, pickle, jam, squash, avil, paappad, chips.

**Table 4.7**

District wise break up of medium and large scale Industries, including food processing units as on 31-03-2006

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>District</th>
<th>Total Number of M and L Units</th>
<th>No. of Food Processing Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Thiruvananthapuram</td>
<td>90</td>
<td>1</td>
</tr>
<tr>
<td>2.</td>
<td>Kollam</td>
<td>31</td>
<td>0</td>
</tr>
<tr>
<td>3.</td>
<td>Alappuzha</td>
<td>38</td>
<td>0</td>
</tr>
<tr>
<td>4.</td>
<td>Kottayam</td>
<td>34</td>
<td>0</td>
</tr>
<tr>
<td>5.</td>
<td>Pathanamthitta</td>
<td>8</td>
<td>0</td>
</tr>
<tr>
<td>6.</td>
<td>Idukki</td>
<td>17</td>
<td>0</td>
</tr>
<tr>
<td>7.</td>
<td>Eranakulam</td>
<td>255</td>
<td>5</td>
</tr>
<tr>
<td>8.</td>
<td>Thrissur</td>
<td>66</td>
<td>0</td>
</tr>
<tr>
<td>9.</td>
<td>Palakkad</td>
<td>89</td>
<td>1</td>
</tr>
<tr>
<td>10.</td>
<td>Malappuram</td>
<td>30</td>
<td>1</td>
</tr>
<tr>
<td>11.</td>
<td>Kozhikode</td>
<td>29</td>
<td>0</td>
</tr>
<tr>
<td>12.</td>
<td>Wayanad</td>
<td>7</td>
<td>0</td>
</tr>
<tr>
<td>13.</td>
<td>Kannur</td>
<td>29</td>
<td>1</td>
</tr>
<tr>
<td>14.</td>
<td>Kasaragod</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>727</strong></td>
<td></td>
<td><strong>9</strong></td>
</tr>
</tbody>
</table>

Source: Kerala State Industrial Development Corporation
Out of 727 medium and large scale units in Kerala, there are only 17 units in the food processing sector producing curry powder, pickle, jam, squash, avil, paappad and chips which constitute only 2 per cent of the total number of units.

Recently, there had been an insurgence of units manufacturing processed food items. But due to intense competition in the market many of them stopped production. Though some of the institutions have been able to make a stamp of their brands in the market, the market for the processed food is still considered to be in the hands of the unorganized regional sector.

**Reasons for the growing importance of processed food**

1. Splitting up of traditional joint families and the emergence of nuclear families.
2. Emergence of larger class of working women for whom timesaving is important.
3. Changes in the food and drink consumption pattern of teenagers and young adults.
4. Change in the meal structures.
5. Improvement in the standard of living, with increased disposable income, improvement in educational levels, increased overseas travel and significant changes in other socio-economic factors.
6. Evolution of television watching as the main hobby of womenfolk has created demonstration effect for the introduction of new products.
7. Willingness of consumers to experiment with non-traditional food, the need for being more creative, using time saving devices and lastly greater flexibility to cater to ‘sudden moments’ and to increase the menu variety.

With its strategic location, world-wide connectivity, rich resources, highly skilled manpower, extremely low operating costs, developed
infrastructure, proactive Government policies with pro enterprise incentives and an excellent quality of life, Kerala has already become one of the best investment destinations of the world. It has tremendous potential to become the dream zone in food processing, considering the huge domestic market it offers to this sector. When it comes to investment in food processing, the state is an ideal destination, offering a host of advantages like—

- Ready to occupy food parks
- Lowest power tariff
- Perennial water supply
- Highly productive workforce
- Investment options in diary products, spice extracts, sea food or fruits and vegetables
- Attractive fiscal benefits like subsidy at 15 percent of the fixed capital investment and the like.

Today, Kerala is one of the leading commercial and trading centres in India. The state offers unparalleled attractions as a base for doing business to cater to the booming global markets.

**Conclusion**

The changing life patterns of Kerala’s home population make it a fast-growing market for processed food. Till a few years back, Kerala’s food processing industry was limited to edible cash crops and sea food. Here too, very basic processing like cleaning, shell removing, freezing and bulk packing alone took place, aimed basically at the export markets. The domestic market was virtually non-existent. This is undergoing a rapid change as more people prefer to buy food off the shelf, thus birthing the concept of convenience food. Kerala at present witnesses a revolution in its approach towards processed food. Instant mix for every conceivable food—dosa, idli, upma, puttu, appam,
curries and even gravy is available off the shelf today. The size of processed food market in Kerala is estimated to be Rs 305 crore (against the national figure of Rs 8,383.5 crore) and is clocking a healthy 25 per cent annual growth, according to industry estimates. Apart from the traditional sea food, Kerala has started exporting processed food in a major way in the last few years. It’s just not the banana chips and pickles that they export. The variety is literally breathtaking: parathas, chapathis, samosas, payasams, avial, curries and gravies. The director of Nilamel Exports, a major exporter in Thiruvananthapuram, opined that convenience and the opportunity to taste the flavours of ‘home’ are the main drivers of demand for the processed food from Kerala. In several West Asian countries, Kerala’s snacks foods such as banana chips, jackfruit chips etc. are finding their way onto the shopping lists of locals. The future for this business is promising. However, industry players need to get more organized. New packaging technologies and new markets such as Australia and New Zealand are likely to foster the growth of this segment of the food industry. Eventually, though, mostly companies in this business will also have to look at entering the domestic market.

In the twenty-first century, product development in the food and food ingredients industry is entering a new era. The design of new foods and beverages rely increasingly on the use of sophisticated enabling technologies. Several factors contribute to this trend including, mounting competitive and regulatory pressures, and changes in consumer lifestyle that bring demands for less caloric, healthier and more natural, yet also more convenient and environmentally friendly items. The challenge facing the industry is to produce foods that are enriched in desirable attributes, or from which undesirable components are selectively removed. In some cases, these efforts are directed not only at the preparation of variants of existing foods and food ingredients, but also at achieving sensory or molecular mimicry, such as for the identification of high potency sweeteners and sugar and fat macronutrient
substitutes. The transformation occurring in the life style and food habits is the fulcrum on which the food industry exists.

Worldwide, the food processing industries are considered sunrise industries and have the potential of attracting huge local and foreign investments. These investments will not only accelerate the pace of industrialization, but will also lead to improvements in both rural and urban infrastructure. A well run food processing industry ensures that while on one hand the producer gets remunerative price for his product, the consumer pays less for higher and assured quality. The broad-based development of the food processing industry will improve both the social and physical infrastructure of India. Food delicacies would create a yearning appetite in anyone. In much the same way now the opportunities in Food Processing Sector of Kerala would create an exciting appetite for any investor / entrepreneur. It will be no axiom to say that ‘a food processing unit a day will keep poverty and backwardness at bay.’

The analysis of data, the various tests conducted and their results are presented in the next chapter. Relevant statistics are given in the table along with a brief description of the values obtained.
References:


