



FOOD PROCESSING INDUSTRIES IN KERALA- SCOPE AND CHALLENGES

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Abstract

This paper examines performance of food processing industries in Kerala and its scope and challenges. The analysis was based on Annual Survey of Industries (ASI) data from 1998-99 to 2013-14. Our findings indicate that the strengthening of interdependence between productive sectors in an economy is necessary for the growth of sectors and thus the evolution of a strong based economy. Performance evaluation of Food Processing Industry (FPI) gives light in to the importance of this sector in our state economy. All sub sectors of Food Processing Industries in organized sector showed a considerable growth in output during 1998-99 to 2013-14. While number of factories and gross capital formation increased, labour force in Food Processing Industries declined to great extent during the same period. This shows changing input structure of this industry towards capital intensive techniques and increasing industrial efficiency in terms of output input ratio. Also the productivity of inputs, labour and capital is considerably high. This is the picture of organized Food Processing Industries. But there exist a large number of units in unorganized sector whose contributions are not being noticed under a common network. If it is possible, it is sure that this sector will be the emerging force of our state economy which links the agricultural and industrial sectors. Though there are weaknesses and challenges for the development of Food Processing Industries, we can overcome these with greater strengths and wider opportunities in future.

Keywords: Food Processing, Forward Linkage, Organized sector, Interdependence, Input-Output ratio

Introduction

Kerala is a richly endowed agricultural state. Agriculture scenario in Kerala is somewhat unique and distinct from many other states in India in terms of land utilization pattern and the cropping pattern. Kerala economy is undergoing structural transformation from mid seventies by switching over a large proportion of its traditional crop area to more remunerative crops like horticultural crops, coconut and rubber (Mani K P 2009). Kerala is a major producer of Spices, Marine Products, Cashew, Coconuts, Cocoa, Coffee and Tea, Fruits like banana and pineapple etc. It provides fertile bed for food processing industries to grow and flourish, with such a strong base food processing sector has establishes a linkage between agriculture and industry. It emerged as an

important segment of our economy in terms of its contribution to State Domestic Product, employment and investment. The developed world's food basket consists of 80 per cent of processed food, while the share is only 1.3 per cent in India (KSIDC Kerala State Industrial Development Corporation). Thus food processing industry in India has huge potential for sustainable and more inclusive growth, diversification, possibility of generating substantial employment and further advancement in respect of industrial development in urban and rural areas.

Food processing aims to make food more digestible, nutritious and extend the shelf life. Important sub-sectors in food processing industries are fruit & vegetable processing; fish processing, milk processing, meat & poultry processing, packaged / convenience foods, alcoholic beverages & soft drinks and grain processing (MOFPI). Food processing covers all the processes that food items go through from the farm to the time it arrives on the consumer's plate. It includes basic cleaning, grading and packaging as in case of fruits and vegetables and also alteration of the raw material to a stage just before the final preparation. The food processing industry in India is one of the biggest in terms of production, growth, consumption and export (sreeja mole 2011). Declared a priority sector, food processing has been allowed a 100 percent of Foreign Direct Investment by the Government of India. In this study, we aim to empirically analyse the current state of the food processing industry in Kerala, its performance and problems.

Review of Literature:

A number of researchers have analyzed the performance, potential, constraints and impact of food processing industries of India. The Indian industries in the nineties have recorded a growth rate of 14 percent (Balakrishnan and Babu, 2003). This was driven by a hefty rise in investment that was fuelled by industrial deregulation, aided by stock market boom in the first half of nineties that reduced the cost of capital (Naraj, 2000). With respect of commercialization of agriculture agro processing industries has received a boost for future growth (1996 Giriappa). Agro industries has capacity to harness forward linkages in agriculture and allied activities in order to efficiently convert part of the output to value added products acceptable to the domestic and international market and there by create enormous employment opportunities (Chengappa 2004, Bhupat and Namboodiri (1992). The rate of value addition in Kerala agriculture is below 2 percent: value addition has a direct impact on poverty reduction and standard of living which are unexplored in Kerala (Mani K P 2009). Lavanya and Santhakumari (2015) found that small players dominate the Indian food processing industry. Even though number of organized units is very few, large and medium units have the dominance over the small units in food processing market (Dr.Swarupa R 2014).

In terms of people employed the performance of food processing industry was disappointing, the sector is more capital intensive (Michel Morriset 2012). Food Processing Industries which is highly labour intensive is suitable to be organized in the small-scale sector (Sreejamole 2011). Venkata Reddy and Maruthy (2016) found that young educated youth are not much attracted to food processing sector as new entrepreneurs. Neethi (2014) studied the experience of a group of women workers involved in home based work in a food processing units in Kerala. By raising income through agro based industries brought about significant changes in standard of living and social and cultural attitude of rural people (Nilakantha1995). Major portion of domestic consumption of processed item was due to economic reasons and habit of people. People generally prefer fresh fruits and vegetables, ready to serve beverages and ketchup were mainly used by household sector (Indhu 2005). Now the role of food processing industry becomes extremely critical considering the immense and immediate challenge of feeding nutritional food to the over billion population of India(FICCI). Earlier studies have discussed a lot of issues related to food processing industry and discussed about importance of linkage between productive sectors for the growth of economy. Studies related to food processing industries in Kerala mainly concentrated on a specific crop or area. Performance of organized food processing industry in Kerala has not been discussed much. In order to fill this gap the present paper seeks to assess performance of organized food processing industry and scope and challenges of food processing industry in Kerala with the specific objectives.

Objectives:

- To examine the status of food processing industries in Kerala;
- To make a SWOC analysis on food processing industries.

Data Source and Methodology:

The present study deals with the organized sector of the food processing industry in Kerala. Secondary sources of data including various publications of Annual Survey of Industries (ASI) (GoI, various issues), Economic Economic Review (GOK, various issues) were used. The ASI gives data of industrial sector by NIC classification of industries. In order to analyze the current status of FPIs in Kerala, we have computed structural ratios, technical coefficients and compound annual growth rate by using the available ASI reports from 1998-99 to 2013-14

Food Processing Industry:

Food processing sector is a large sector which covers activities such as agriculture, horticulture, plantation, animal husbandry and fish. The Ministry of Food Processing, Govt of India indicates the following segments within the FPI.

- Dairy, Fruits and Vegetable processing
- Grain processing
- Meat and Poultry processing
- Fisheries
- Consumer foods including packaged foods, beverages and packaged drinking water

As per ASI (2013-14), the number of registered food processing units in India has increased from 37,175 in 2012-13 to 37,445 and in Kerala number of units increased from 1437 in 2011-12 to 1460 in 2013-14. In Kerala, number of food processing units registered during 2015-16 is 879. Thiruvananthapuram district has registered 237 units, which is at the top position. The share of food processing units in the registered sector is only 19 per cent as compared to unregistered units. In India as well as Kerala, the food processing industry is highly fragmented and is dominated by the unorganized sector.

Performance of food processing industry in terms of ratios:

Performance of food processing industry (FPI) is well understood by using the structural ratios and technical ratios, which have been computed for different sectors for the year 2013-14. Structural ratios explain the structural performance of different sectors of FPI (table: 1).

Table: 1 Structural ratios 2013-14

sub sectors	FC/ FO	NW/ FO	TO/FO	NVA/ FO	TO/ NEW	GVA/ NEW	Wa / Wo
Meat	108	13.8	334.4	6	24.23	1.2	1.58
Fish, Crustaceans and mollusks	504.39	45.95	3268.53	296.15	71.13	7.62	0.97
Fruit and vegetables	47.94	6.44	189.47	3.08	29.4	1.66	0.78
Oil an fats	465.61	41.7	6322.57	804.66	151.6	20.91	1.74
Dairy products	506.64	49.63	3633.25	331.03	73.21	7.49	1.79
Grain Mill, starches	179.07	17.11	1324.81	102.51	77.45	6.98	1.28
Other food products	159.47	136.91	1216.34	182.84	8.88	1.42	0.53
Animal feeds	685.33	87.53	7665	432.93	87.57	5.81	1.18
Beverages	535.02	93.2	2350.67	355.38	25.22	4.47	1.19
total fpi	234.1	103.02	1776.96	215.28	17.25	2.3	0.63
all kerala	405.71	47.45	2243.5	226.47	47.28	5.43	1.11

source: computed from ASI 2013-14 (FC-Fixed Capital, FO- Factory in Operation, NW-Number of Workers, NVA-Net Value Added, TO- Total Output, NEW- Number of Workers Employed, GVA-Gross Value Added Wa-wages, Wo- workers)

The ratio of fixed capital to factory in operation means fixed capital invested per unit of factory in operation. More fixed capital was invested in animal feed sector (685.33), followed by beverage (535.02), Dairy processing (506.64); lowest was in fruits and vegetable sector (47.94). Workers

employed per factory in operation of FPI in Kerala were (103.02). Regarding sub sectors of FPI, more workers were employed in 'Other food products' sector (136.91) and followed by beverage (93.2), animal feed (87.53). Fruit and vegetable sector has the lowest value (13.8).

Total output per factory in operation for FPI was 1776.96. Of which animal feed sector has the top most position (7665), lowest ratio for fruit and vegetable sector (189.47). Regarding NVA per factory in operation is highest in Oil and fat sector (804.66), which was far above that of overall FPI (215.28). Also it was higher in animal feed (432.93) beverage (355.38) and dairy products (331.03). This ratio was low for the fruit and vegetable sector (3.08). The ratio of total output to number of persons employed means Average product of Labours. It was considerably lower (17.25) in FPI, compared to 47.28 in overall industries. It was higher in oil and fat (151.6) and lowest in bakery (8.88). GVA per number persons employed for FPI in Kerala is only 2.3. All sub sectors except 'meat' and 'other food products' have more value than that of overall FPI. Oil and Fat (20.91) has the first position. Remuneration of labour can be analysed by using the ratio Wages per workers. This ratio is lower in FPI as whole (0.63) as compared to that of all industries in Kerala. It is highest in Dairy (1.79) followed by oil and fat (1.74), meat (1.58).

Performance of Food Processing Industry in Terms of Technical Ratios:

Some technical ratios were estimated on the basis of output to input, NVA to output, fixed capital to output, fixed capital to NVA and GVA to fixed capital (table:2).

Table:2 Technical Ratios

sub sectors	FC/ NVA	FC/ TO	GVA/ FC	TO/ TI	NVA/ TO
Meat	18	0.32	0.15	1.05	0.02
Fish, Crustaceans and mollusks	1.7	0.15	0.69	1.12	0.09
Fruit and vegetables	15.55	0.25	0.22	1.06	0.02
Oil an fats	0.58	0.07	1.87	1.16	0.13
Dairy products	1.53	0.14	0.73	1.11	0.09
Grain Mill, starches	1.75	0.14	0.67	1.1	0.08
Other food products	0.87	0.13	1.22	1.19	0.15
Animal feeds	1.58	0.09	0.74	1.07	0.06
Beverages	1.51	0.23	0.78	1.22	0.15
All India FPI	1.09	0.13	1.01	1.15	0.12
all Kerala FPI	1.79	0.18	0.64	1.13	0.1

source: computed from ASI 2013-14 (FC-Fixed Capital, NVA-Net Value Added, TO- Total Output, GVA- Gross Value Added, TI- Total Input)

Fixed capital per NVA was used to measure capital productivity and high capital productivity demands more flow funds to the sectors. This ratio for FPI was 1.09, of which the sectors have the ratio was higher for Meat (18), Fruit and Vegetables (15.55). Oil and Fat (0.58), 'Other food products' (0.87) sectors have low capital productivity. Fixed capital per total output of FPI was 0.13; of which Meat (0.32) has the highest position followed by fruit and vegetable sector (0.25), beverage and others (0.23). This ratio was greater for six sectors than the total FPI. The two sectors animal feeds (0.09) and oil and fat (0.07) has reported lowest ratio.

The ratio of Gross Value Added (GVA) to Fixed Capital implies per unit of fixed capital used in the value addition process. This ratio was highest in Oil and Fats (1.87); it revealed that low amount of fixed capital used in this sector. Meat sector has the lowest ratio (0.15) implies fixed capital plays a significant role. The ratio of total output to total input of FPI is 1.15, of which beverages sector performed well with the highest ratio of 1.22. This ratio was greater than one for all sectors, revealed that all sectors of FPI could provide more output than the amount of resources utilized for production.

The value of NVA to total output was 0.12 for FPI. 'Other food products' and beverage sector has high ratio (0.15) and lowest value 0.02 was for meat and fruit and vegetable sector.

Growth of Food Processing Industry:

To assess the growth of food processing industry in Kerala, the Growth Rate of important variables like total output, number of factories and number of workers have been computed for the period from 1998-99 to 2012-13 (table:3). Food processing industry as whole has positive growth except in the case of number of workers. In Kerala, growth of FPI sector in terms of total output was 9.39 per cent, number of factories (3.66 per cent) and number of workers (2.09 per cent); which indicate that food processing industry has a huge potential for growth by using capital and labour intensive techniques.

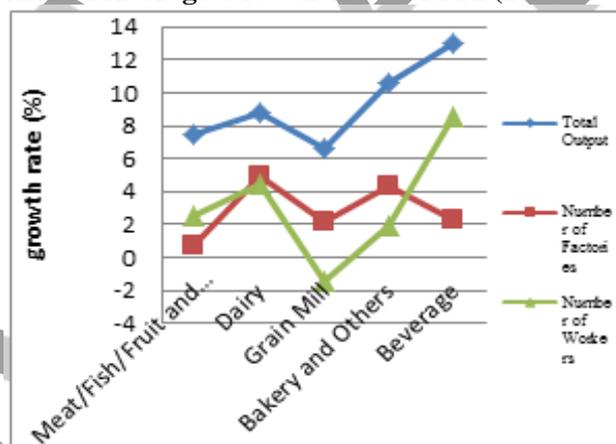
Table :3 Annual Average Growth Rate of FPI (1998-99 to 2012-13)

Sector	Total Output	Number of Factories	Number of Workers
Meat/Fish/Fruit and Vegetables	7.47	0.74	2.57
Dairy	8.81	4.89	4.51
Grain Mill	6.67	2.2	-1.44
Bakery and Others	10.56	4.29	1.99
Beverage	13	2.32	8.58
All FPI	9.39	3.66	2.09

Source: computed from ASI Data 1998-99 to 2012-13

Regarding sub sectors, Grain Mill sector has negative growth rate in number of workers (-1.44 per cent) during this period; but in the case of total output (6.67 per cent) and the number of factories (2.2 per cent). In Beverage sector, growth rate in output is high i.e. 13 per cent and achieved only 2.32 per cent rate of growth in number of factories. Dairy and Bakery sector achieved as much as same growth during this period.

Figure 1 Annual Average Growth Rate of FPI (1998-99 to 2012-13)



SWOC Analysis:

Kerala is the state which holds a monopoly in the production of a number of agricultural commodities of national importance. Most of the agro based industries are dominated by small scale primary processing units. The organized, registered units of food processing industry are very few in Kerala. But a large number of small units are functioning in the unorganized sector which has high potential in processing and producing value added products. In this context, SWOC analysis is an effective technique to assess this area and thus to bringing up the sector by identifying the spaces for growth of the industries.

Strengths

- Monopoly in the production of some agricultural commodities.
- Strong domestic market due to changing food consumption habits
- Favorable climate for growth of fruits and vegetables
- Existence of clusters of productive work force (kudumbasree)

- Existence of central institutions like KAU, KINFRA, Central Food Technological Institute etc... to develop feasible and economically and conveniently viable technologies of production.
- High export potential for FPI products like processed sea food, spices etc.
- Venture can be started with comparatively lower investment.

Weaknesses:

- Declining production of important food crops, especially paddy
- Seasonality and Perishability of raw material
- High loss of agricultural produces after harvest, especially fruits and vegetables
- Large number of unorganized small units
- Unskilled workers/ entrepreneurs
- Outdated technology in processing food crops
- High working capital requirement but lack of sufficient credit facilities for value addition
- Lack of marketing facilities for unorganized sector
- Exploitation by intermediaries
- Inadequate infrastructural facilities
- Lack of adequate quality control and testing methods as per international standards
- Inadequate Research & Development labs to link industry

Opportunities:

- Diversification of food products according to the demand for a variety of quality and tastes
- Improving agricultural production by utilizing available land and workforce
- Establish local level industrial parks by clubbing unorganized food processing industrial units
- Impart proper training to the members of clusters like kudumbasrees and building capacity as entrepreneurs and skilled workers among them
- Optimum utilization of existing capacity by providing production incentives and subsidy
- Increasing agricultural production by concentrating on area specific crops
- Organizing fests or exhibitions to provide space for younger generations in order to bring their innovative ideas.
- Potential for utilizing productive capacity of unemployed youth
- Remunerative prices of seasonal fruits can be increased through value addition
- Setting of up SEZ/AEZ and food parks for providing added incentive to develop green field projects

Challenges:

- Strict and rigid official terms and conditions which hinder the units to come under an organized roof
- Adulteration due to high competition in organized sector
- High competition in the global market
- Accessibility to certify the products as branded items is not easy
- Constraints in timely availability of inputs
- Difficulty in satisfying WTO sanitary clause for the processed items

Conclusion:

Performance evaluation of FPI gives light in to the importance of this sector in our state economy. All sub sectors of FPIs in organized sector showed a considerable growth in output during 1998-99 to 2012-13. While number of factories and gross capital formation increased, labour force in FPIs declined to great extent during the same period. This shows changing input structure of this industry towards capital intensive techniques and increasing industrial efficiency in terms of output input ratio. Also the productivity of inputs, labour and capital is considerably high. This is the picture of organized FPIs. But there exist a large number of units in unorganized sector whose contributions are not being noticed under a common network. If it is possible, it is sure that this sector will be the emerging force of our state economy which links the agricultural and industrial sectors. Though there are weaknesses and challenges for the development of FPIs, we can overcome these with greater strengths and wider opportunities in future.

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