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Employment Intensity of Output: An Analysis of Non-Agriculture Sectors

Food Processing Sector

Institute of Applied Manpower Research

Planning Commission, Government of India

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Executive Summary

Introduction

The manufacturing sector witnessed an overall growth of GDP during the decade 1999-2000 to 2009-10 but suffered a decline in employment. Thus, it is to be seen why some of the sectors did not grow in terms of employment. The study of manufacturing sector may provide the dynamism of growth across sectors. It would specifically help understand the reasons of why one sector emerged in preference for the other in terms of employment. Further, it would help in identifying the factors responsible for growth, or otherwise, of a particular sector. Against this background, the study of Employment Intensity of Output: An Analysis of Non-Agricultural Sector has been undertaken at the instance of the Planning Commission that analyses different sectors of manufacturing and services industries. Present report analyses the employment dynamics of the Food Processing Sector in the country.

Food processing industry is the vital link between the two pillars of the Indian economy, namely, Industry and Agriculture. A vibrant agrarian and rural economy requires establishing forward linkages in the form of food processing industries. This sector is one of the most heterogeneous sectors of manufacturing. It covers a spectrum of products from sub-sector comprising agriculture, horticulture, plantation, animal husbandry and fisheries. Essentially, the food industry involves the commercial movement of food from 'field to fork'. It has been realized that food processing industries have a crucial role to play in value addition to the agriculture, to increase the shelf life and also in the reduction of post-harvest losses.

With 16 per cent of world population and 12 per cent of world's food production, India is today one of the largest producers and consumers of food in the world. Indians spend approximately 49 per cent in rural areas and 38.5 per cent in urban areas of their total spending on food. But food processing levels in the country are substantially lower than most developing and developed countries. Only 6 per cent of the food produced in India is properly processed which is much lower than in China (40 per cent) and in Malaysia (80 per cent). According to the Ministry of Food Processing Industries, the processing levels are a mere 2 per cent in fruits and vegetables, 15 per cent in milk, 4 per cent in fish and 2 per cent in meat and poultry. The unorganized sector and small players dominate the sector and process

more than 70 per cent of the industry output in volume terms and 50 per cent in value terms.

Despite this, food processing industry ranks fifth in size in the country, representing 1.5 per cent of the total GDP and 9.3 per cent of manufacturing in 2009-10. The industry employed 5.48 million people in 2009-10. The Eleventh Five Year Plan (2007-12) categorized the food processing as a sunrise sector and a highly labour-intensive sector. Policies and programmes have been proposed to encourage the growth of food processing along with other sectors such as leather products, footwear, textiles, tourism and construction, to create additional employment opportunities to the tune of 65 million, during the plan period. However, this sector proved to be job loosing, as employment declined by 0.58 per cent per annum during 2004-05 to 2009-10, although the output grew at 6.9 per cent per annum during the same period. The sector did not fulfil the hopes of policy makers as employment grew only minimally in the organized segment of the sector at 3.64 per cent per annum whereas growth in unorganized sector was negative at (-) 2.58 per cent per annum during 2004-05 to 2009-10.

Objectives

The present study has been conducted with the following objectives:

1. To analyse the growth potential of food processing sector in terms of employment, gross value added, and investment
2. To assess the implications of various factors like technological advancement, outsourcing, sub-contracting, regulations and laws as applicable in the food processing industries on employment
3. To identify the factors of growth (or otherwise) of employment in food processing sector at disaggregated level; and
4. To suggest policy measures for the growth of the sector.

Methodology

The study is mainly based upon the secondary data from National Sample Survey Organisation (NSSO); Central Statistical Organisation (CSO); Ministries/Departments; Industry associations like Federation of Indian Chamber of Commerce and Industries (FICCI), The Associated Chambers of Commerce and Industries of India (ASSOCHAM), The Confederation of Indian Industries (CII) and Sector-specific associations. Discussions with various stakeholders (Government officials, representatives from associations/enterprises etc.) were conducted for various sub-sectors at various locations.

Scope and Coverage

All industries categorized under Food Products and Beverages (NIC-15) in National Industrial Classification (NIC), 2004 have been examined at all-India level. The analysis is focused on implications of government interventions, investment, technology, outsourcing/sub-contracting, etc., on employment and output of the industries.

Findings

There was a decline in employment in the sector throughout the decade; the decline was sharper in the first half and was mainly due to the unorganized sector. The share of informal employment in organized manufacturing has declined over time. At sub-sectoral level, manufacturing of grain mill products and manufacture of other food products (employing about 75 per cent of the workers) saw a sharp decline. It was only manufacturing of Dairy Products which registered a positive growth during the previous decade.

The contribution of food processing sector to the GDP continuously increased during the decade 1999-00 to 2009-10, more so in the second half of the decade. The rate of growth per annum was more than four times through organized sector as compared to unorganized sector. Another striking feature is that the organized sector which employs around 33 per cent of the workforcecontributes upto 67 per cent of GVA.

There is a large influx of foreign investment and upgraded technology in the food processing industries operating in organized sector. This has a positive impact on employment which has increased by an annual growth rate of 1.8 per cent during the decade 1999-2000 to 2009-10 and by 3.6 per cent in the second half of the decade. As a result of these two inputs, the value addition by the organized sector has increased by an annual growth rate of 8.4 per cent during the same decade and by 14.7 per cent during the second half of the decade. The mechanization requires less manpower but expansion of production and activities has compensated it.
However, technology upgradation has led to skill gaps in the existing workforce. Industry is facing problems in getting skilled manpower, especially at the lower level, to operate sophisticated machines.

Outsourcing and sub-contracting have not replaced labour in general. However, the nature of employment has changed. This has increased casualisation. The small units working for outsourced and sub-contracted activities have to adhere to the same quality standards. These units use traditional labour-intensive

technologies and hence the employment has been maintained. However, it is not clear within the industry circles as to why this so.

The Food Standards and Safety Act (2006) implemented in 2011 will enable the Indian food industries to compete with international standards and will open doors to exports of processed food. Industry will also get rid of about a dozen other regulations with the enactment of this Act. Uniform freight charges (in the case of wheat) will bring roller flour mills at level platform across the country. Government initiatives for food parks have been welcomed by the industry. The reduction in excise and customs duty and corporate taxes and export promotion (through export promotion zones) are some of the factors that have contributed to the growth of the sector.

Different rates of VAT in different states have led to the concentration of a few industries in a few states. Labour laws often act as impediments in the way of growth of smaller units. The APMC Act, poor infrastructure, inadequate research and development are the other factors that hinder the growth of the sector.

CHAPTER I

Introduction

Food processing industry is the vital link between the two pillars of the Indian economy, namely, Industry and Agriculture. A vibrant agrarian and rural economy requires establishing forward linkages in the form of food processing industries. Such linkages improve the income levels of the producers and help reduce wastages, which are crucial for food and livelihood security. Recent study by Central Institute of Post-Harvest Engineering and Technology (CIPHET, 2010) has assessed that the post harvest losses of agriculture products amount to approximately Rs. 44,000 crore annually. The estimated losses in fruits and vegetables were 6 to 8 per cent, in cereals 4per cent and in meat/fish/poultry it is 2 to 4 per cent.

This sector is one among the heterogeneous sectors of manufacturing. It covers a spectrum of products from sub-sector comprising agriculture, horticulture, plantation, animal husbandry and fisheries. Essentially, the food industry involves the commercial movement of food from "field to fork".

Food processing industries are one of the fastest growing segments in manufacturing in 2010-11 contributing 27 per cent to average industrial growth, i.e., more than three times its weight in the Index of Industrial Production (IIP) (Economic Survey, 2011).

With 16 per cent of world's population and 12 per cent of world's food production, India is today one of the largest producers and consumers of food in the world. Indians spend approximately 35 per cent (around US $ 330 billion per year) of their total spending on food. But food processing levels in the country are substantially lower than most developing and developed countries. Only 6 per cent of the food produced in India is properly processed which is much lower than the 40 per cent in China, and 80 per cent in Malaysia (Federation of Indian Chamber of Commerce and Industries (FICCI), 2011).

While India has abundant supply of food, the food processing industry is still nascent: only two per cent of fruits and vegetables; and 15 per cent of milk produced are processed (Ministry of Food Processing Industries (MOFPI), 2009). Despite this, food processing industry ranks fifth in size in the country, representing 1.5 per cent of total GDP and 9.3 per cent of manufacturing in 2009-10 (National Accounts Statistics (NAS), 2011). The industry has a large unorganized segment with 68% share in 5.48 million people employed in the industry in 2009-10 (National Sample Survey Organisation (NSSO), 2009-10).

There is some optimism about the growth potential and possibilities of employment creation in the food processing sector in the country. The Eleventh Five-Year Plan (2007-12) noted that food processing was a sunrise sector and was highly labour-intensive. The plan proposed policies and programmes to encourage the growth of food processing along with other sectors such as leather products, footwear, textiles, tourism and construction to create additional

employment opportunities to the tune of 65 million during the plan period. However, this sector proved to be job losing, as employment declined by 0.58 per cent per annum during 2004-05 to 2009-10, although the output grew at 6.9 per cent per annum during the same period. The sector did not fulfil the hopes of policy makers as employment grew only meagrely in the organized segment of the sector (at 3.64 per cent per annum) whereas growth in unorganized sector was negative (at (-) 2.58 per cent per annum) during 2004-05 to 2009-10 (NAS, 2011).

1.1 Importance of this sector and the need to study it

The present farm output, particularly fruits and vegetables, are not of exact quality needed for processing; e.g., apples that are produced in India at large are not the quality suitable for juice manufacturing. Agro-industry generates new demand on the farm sector for more and different agricultural output, which are more suitable for processing (Srivastava, 1989). Due to extensive backward and forward linkages, the sector has great potential for employment generation, both direct and indirect, across the supply chain in procurement of raw materials, storage of produce, finished products and distribution of food products to consumers.

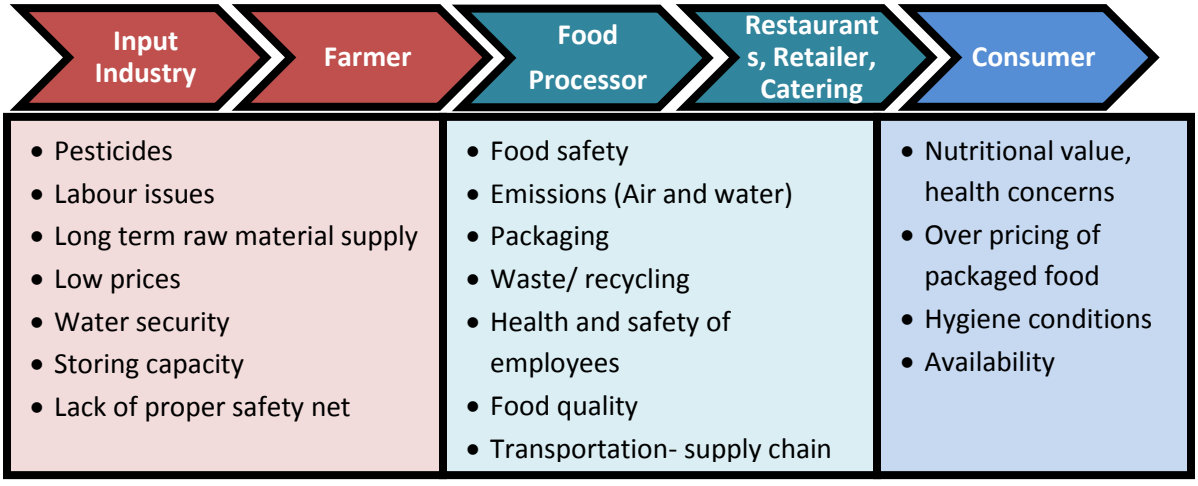
Food Value Chain

" Considering the growth witnessed by the sector in the last decade, and further improvement in growth rates in the years to come, this sector presents varied opportunities for investment across the entire agri-value chain."

- Mr. Shrijeet Mishra Chairman, FICCI Food Processing Committee
(Ernst and Young and FICCI joint report on the food processing sector, 2009)

Food value chain is a network of food-related business enterprises through which food products move from production through consumption, including pre-production and post-consumption activities.

Fig 1.1: Value chain in a food processing industry



Sources: Compiled from Annual Report of MOFPI; and FICCI Report: Flavours of Incredible India

As evident from the above diagram, the problems mainly arise due to supply chain constraints i.e., how and when the food reaches for processing and then reaches the final consumers. Due to large supply chain problems in India, there are a lot of wastage of food from farmer to consumer; and this also leads to unhygienic conditions of storing. India not only lacks basic infrastructure to reduce wastage but also the skilled manpower to handle such a chain efficiently,.

Considering this reason, infrastructure development was a top priority under the Eleventh Five Year plan. It was realized that a proper supply chain system can only ensure a good value chain. During this period, scheme like Mega Food Park was initiated. This scheme aims at providing a mechanism to bring together farmers, processors and retailers and link agricultural production to the market so as to ensure maximization of value addition, minimization of wastages and improving farmers' income. The primary objective of the scheme is to facilitate establishment of an integrated value chain, with processing at the core and supported by requisite forward and backward linkages.

Also, to encourage setting up of cold chain facilities and backward linkages in the country and hence to provide integrated and complete cold chain system, the scheme for cold chain, value addition and preservation infrastructure was launched in the same period.

Other prominent programmes started by MOFPI during the Eleventh Five Year plan were :

- scheme for infrastructure development
- scheme for technology upgradation, establishment and modernisation of food processing industries
- scheme for human resources development
- scheme for quality assurance, codex standards and research & development
- scheme for strengthening of institutions
- scheme for up-gradation of quality of street foods.

To promote exports, food parks and export zones were promoted which provide benefits like duty free imports, exemption of 'profits from export sales' in corporate taxes, etc. However, investment in this sector has been very low in India (Deloitte, 2009).

The growth of this sector could be mainly attributed to changing lifestyles. Due to increasing participation of women in labour force leading to more consumption of processed food, the demand for such products have increased considerably (Dev and Rao, 2005). On the supply-side, the development of organised food retail as well as rise in the global value chains for the processed food industry contributes to the growth (Gereffi 2001; Wilkinson and Rocha 2006), besides the export promotion attempts stated above.

However, the evolution of this sector has varied across countries. Proper planning based on information about both the demand and supply aspects that affect its growth, especially, the nature of employment and the workforce is required (International Labour Organisation (ILO), 1998).

In spite of untapped potential for growth and known labour-intensive character of this production, there are very few systematic studies on the sector, especially in the vast informal segment. The wages and conditions of work in the sector are largely undocumented as compared to workers in other sectors like textiles, garments, construction, etc. (Rao and Dasgupta, 2009).

Keeping the importance of food processing in view, a separate ministry, Ministry of Food Processing Industries, was constituted in 1988. However, different food processing industries are still governed by different ministries such as the Ministry of Agriculture, Ministry of Food, Ministry of Consumer Affairs, etc.

Currently, there is no systematic and scientific data pertaining to the food processing sector based on harmonised concepts, definitions and classifications available (MOFPI, 2012). Most of the available data are sourced from different functional ministries/departments, business associations, research institutions and non-government organisations (NGOs).

In order to plan for further production, industry associations/expert groups often rely on insights and subjective projections, which may not be easy to validate as their basis is often insider information which is not in public domain. The lack of a comprehensive and reliable database on this sector is a major constraint in policy formulation and decision making (MOFPI, 2012).

As realized, food processing industries have a crucial role to play in value addition to the agriculture, in the increase in shelf life of foods and also in the reduction of post-harvest losses. Thus, the main reasons to study this sector are:

1. Food is the largest consumption category in India and also is given more weight in Industrial production index.
2. This sector gains importance due to the fact that a substantial portion is based in the rural area, and if tapped properly, it could tremendously increase rural employment.
3. This sector has huge employment potential at a very low rate of investment. The fruits and vegetables farming for processing is not only employment intensive but also enhances the gross as well as net returns to the farmers (Rao 1994; Acharya 1997; Dileep et al., 2002).
4. However, during the last decade, the output (GVA) grew at a positive rate of 5.62 per cent but employment in the sector declined at 0.81 per cent, thereby exhibiting a negative employment elasticity of 0.15. Therefore, it is important to find out the reason for such a trend.

5. The effect of foreign direct investment (FDI) on this sector has never been studied (*Business Standard*, December 13, 2011).

Hypothesis

In particular, the study aims to answer the following research questions:

1. How the increase in investment and introduction of new technology has led to a change in employment?
2. How the outsourcing and sub-contracting of certain operations has resulted in employment change?
3. What specific policies and reforms have led to differential performance in the sector?

Objectives

1. To analyse the growth potential of food processing sector in terms of employment, gross value added, and investment
2. To assess the implications of various factors like technological advancement, outsourcing, sub-contracting, regulations and laws as applicable in the food processing industries on employment
3. To identify the factors of growth (or otherwise) of employment in food processing sector at disaggregated level; and
4. To suggest policy measures for the growth of the sector.

1.2 Scope and coverage

For analysing the food processing sector, the industries under National Industrial Classification (NIC)-15 (Food Products and Beverages) (as per NIC, 2004) have been examined. The analysis is focused on implications of government interventions, investment, technology, outsourcing/sub-contracting, etc. on employment and output of the industries.

The Ministry of Food Processing Industries in its definition of the sector (MOFPI, 2012, p. 2) includes industries which undergo either of the following two processes, viz.:

a. Manufactured Processes: If any raw product of agriculture, animal husbandry or fishing is transformed through a process (involving employees, power, machines or money) in such a way that its original physical properties undergo a change and if the transformed product is edible and has commercial value, then it comes within the domain of Food Processing Industries.

b. Other Value-Added Processes: If there is significant value addition (increased shelf life, shelled and ready for consumption etc.) such produce also comes under food processing, even if it does not undergo manufacturing processes.

The Ministry of Food Processing Industries cover industries that come under "Food Products and Beverages", NIC-15 (NIC, 1998 and 2004) and under NIC-10 &11 (NIC, 2008). Segmentation of the Sector at 3-digit level of NIC according to NIC-1998/2004 is as follows:

Table 1.1: NIC-15 - Food Products and Beverages

NIC Code	Description
151	Production, Processing and Preservation of Meat, Fish, Fruits, Vegetables, Oils and Fats
152	Manufacture of Dairy Products
153	Manufacture of Grain Mill Products, Starches and Starch products and prepared animal feeds.
154	Manufacture of Other Food Products
155	Manufacture of Beverages

Note: The above groups also include food products which are under the mandate of Ministries other than the Ministry of Food Processing. The Ministry of Food Processing Industries does not deal with a few food items such as coffee, tea, oilseeds, spices, sugar, vanaspati oil, etc. as the allocation of these items are with other Ministries under the Allocation of Business Rules for Central Ministries.
Source: MOSPI, 2004

1.3 Methodology and Tools of Survey

The study is mainly based upon the secondary data from National Sample Survey Organisation (NSSO); Central Statistical Organisation (CSO); Ministries/Departments, Industry associations like Federation of Indian Chamber of Commerce and Industries (FICCI), The Associated Chambers of Commerce and Industries of India (ASSOCHAM), The Confederation of Indian Industries (CII) and Sector specific associations.

In addition to it, various reports/documents pertaining to labour regulations, export-import policy, industrial policy, sectoral lending pattern of banks/financial institutions have been analysed.

For identifying various issues pertaining to employment and output, discussions with various stakeholders i.e. Government Officials, representatives from associations/enterprises etc. were conducted for various sub-sectors at various locations. An indicative list of places visited for this purpose is placed at Annexure-1. Apart from the secondary data and association meetings, two questionnaires - one each for the Associations and the enterprises - were developed and canvassed.

This report is presented in four sections. Section-I gives an introduction to the food processing sector and details the purpose of this study. Section II describes the growth in employment, gross value added (GVA) and investment in the sector based on NSS, Annual Survey of Industries (ASI) and CSO data. Implications of various factors on employment like technological advancement, outsourcing, sub-contracting, regulatory regime and laws have been analysed in Section III. Section IV concludes by giving policy implications, impediments, challenges and the way ahead.

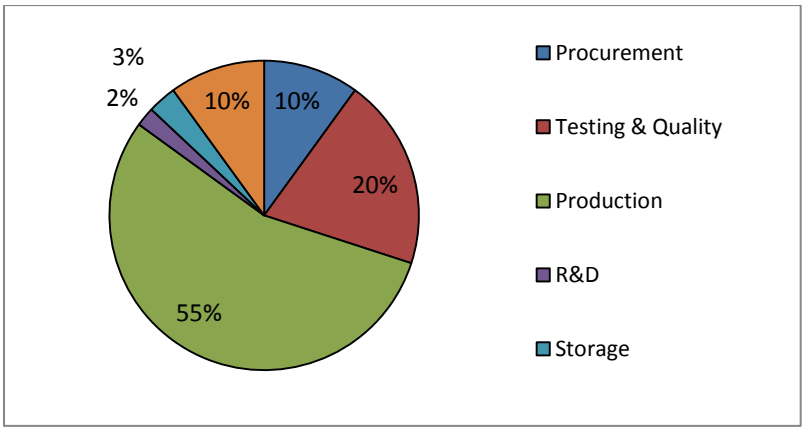
CHAPTER II

Growth Dynamics of Food Processing Industries

2.1 Employment

The strategy for future employment planning will rely on the past trends. This section provides the trends for employment, GVA and investment in the food processing industries during 1999-2000 to 2009-10. Since this sector consists of a variety of heterogeneous industries, the trends for various sub-sectors in organized and unorganized sector have also been analyzed. A broad composition of type of employment is given in Figure 2.1 below.

Figure 2.1: Employment by type of Function in the Sector



Source: National Skill Development Corporation (NSDC) survey, 2010

It is noticed that 55 per cent of employees are in the actual production process who majorly have education levels less than class 10 (NSDC, 2010). This emphasizes the fact that skill development issues and labour law related problems are prominent in this sector. Further, in the unorganised sector, a large portion of the workforce is composed of helpers (who are minimally educated) and a few (1 or 2) trained employees incharge of the production and quality functions (NSDC, 2010).

The data on employment are provided by two major sources viz., NSSO and ASI. While NSSO provides data for both organized and unorganized sectors of economy, ASI provides data on various parameters related to industries in organized sector of the economy only.

The contrast between employments in organized manufacturing as defined by the NSS as against the ASI definition is instructive. The definition that ASI uses for organized manufacturing is the firms that are registered under the factory Act 1948, are employing 10 or more workers and operating with power. According to NSS, on the other hand, enterprises run

by the government (or included in the public sector) and cooperatives, trust and other types that are employing 10 or more workers are organized manufacturing ones. The later definition includes both formal and informal employment while the ASI's definition is restricted to formal employment only. Thus, ASI uses tighter definition than the one used by the NSS to identify firms in organized manufacturing. The CSO provides data on different parameters of organized (referred to as registered) sector by using ASI data.

2.1.1 Broad employment Trends

Table 2.1 examines the degree of structural change that is taking place in respect to employment in manufacturing and food processing industries as shown by NSS data for the decade 1999-2000 to 2009-10. As per 2009-10 data, food processing sector employed 5.48 million persons constituting 10.8 per cent of the total employment in the manufacturing sector and 1.2 per cent of the total workforce in the economy. However, employment in this sector has declined by about 0.47 million during the last decade. The loss of employment was more visible in the first half of the decade – 1999-2000 to 2004-05, when about three lakh (or about 1% per annum of the total employed in 1999-2000) jobs were reduced while in second half, about 1.6 lakh (or about 0.58% per annum of total employed in 1999-2000) jobs were reduced. It is worth mentioning that the growth rate of employment in the manufacturing sector rose by 1.42 per cent per annum during the decade but in the case of food products and beverages, there was a negative employment growth of (-) 0.81 per cent per annum (employment rose by 4.83% per annum in the first half and declined by 1.87% per annum in the second half).

As a result of loss in employment, the share of food products & beverages in the manufacturing sector employment has also declined from 13.5 per cent in 1999-2000 to 10.8 per cent in 2009-10.

Table 2.1: Growth of Employment in Food Products and Beverages, 1999-2000 to 2009-10

Sector	Employment (in millions)			Compound Annual Growth Rate CAGR (%)		
	1999-00	2004-05	2009-10	1999-00 to 2004-05	2004-05 to 2009-10	1999-00 to 2009-10
Food Products & Beverages	5.95	5.65	5.48	-1.03	-0.58	-0.81
Manufacturing	44.05	55.77	50.74	4.83	-1.87	1.42
Total Economy	396.76	457.47	460.21	2.89	0.12	1.49
Proportion (%) of Food Products & Beverages in Manufacturing	13.50	10.12	10.81			
Proportion (%) of Food Products & Beverages in total economy	1.50	1.24	1.19			

Source: Compiled from unit level data of NSSO by IAMR research team

A detailed insight into the organized sector is obtained through the annual publication of CSO i.e. 'Annual Survey of Industries (ASI)'. There was a consistent growth of 1.4 per cent per annum in the number of units engaged in food processing during 1999-2000 to 2009-10. According to the employment data in Table 2.2, the growth rate of workers in this segment was 1.8 per cent per annum during 1999-2000 to 2009-10. This trend is rather contradictory to what was observed in the NSSO data which includes both organized and unorganized sector (refer Table 2.1 above). In the second half of the decade, the growth in organized sector was half the growth in organized manufacturing sector as a whole. This pattern resulted in the decline of sector share in total manufacturing from 16.5 per cent in 1999-2000 to 13.6 per cent in 2009-10 (Table 2.2).

Table 2.2: Growth of Employment in Food Products and Beverages Industries in Organized Sector, 1999-2000 to 2009-10

Sector	Employment (in number)			CAGR (%)		
	1999-00	2004-05	2009-10	1999-00 to 2004-05	2004-05 to 2009-10	1999-00 to 2009-10
Food Products & Beverages	1347418	1342925	1605954	(-).0.07	3.64	1.77
Manufacturing	8172836	8453624	11792814	0.68	6.88	3.73
Percentage of Food Products & Beverages in Manufacturing	16.49	15.89	13.62			

Source: Annual Survey of Industries, various issues

The data further suggests that organized manufacturing units including food processing units are providing more employment per unit in 2009-10 as compared to 1999-2000. The number of employees per unit in food processing industries increased marginally from 56.3 in 1999-2000 to 58.4 in 2009-10. In comparison, total manufacturing was more labour intensive and employed 74 employees in 2009-10 as against 62 in 1999-2000.

What follows from Tables 2.1 & 2.2 is that employment in the organized sector did not shrink like that of the unorganized sector. During the decade 1999-2000 to 2009-10, the employment in unorganized sector declined by 0.73 million (0.29 million in the first half and 0.44 million

in the second half). The annual compounded rate of decline was 1.71 per cent during the said decade (1.29 % during the first decade and 2.13 % in the second decade).

The importance of organized sector is highlighted by the fact that the organized sector employs about 14 per cent of the manufacturing employment in the country and provides the same number of jobs at a 28 per cent lower capital investment as compared to manufacturing sector as a whole (ASI, 2009-10)

2.1.2 Sub-sectoral employment trends

At 3-digit level of NIC-2004, the industries in this sector are segmented into five sub-groups while at 4-digit and 5-digit level, the sector is divided into 17 and 70 sub-groups respectively.

The data given by NSSO at 3-digit level of NIC for the years 1999-2000, 2004-05 and 2009-10 are given in Table 2.3).

Table 2.3 Employment Trend in sub-sectors of Food Processing Industries

	Employment			CAGR (%)			Share of Sub-sectors		
Sub sectors	**1999-00**	**2004-05**	**2009-10**	**1999-00 to 2004-05**	**2004-05 to 2009-10**	**1999-00 to 2004-05**	**1999-00**	**2004-05**	**2009-10**
151: Meat, fish, fruit, vegetables, oils and fats	730165	661815	758210	-1.95	-1.84	-2.17	12.28	11.72	13.82
152: Dairy products	254502	289470	422064	2.61	1.61	4.00	4.28	5.13	7.70
153: Grain mill products	2282353	2149351	1688764	-1.19	-2.39	6.34	38.38	38.07	30.79
154: Other food products	2295116	2229620	2261672	-0.58	0.44	-2.40	38.60	39.49	41.24
155: Beverages	384290	315466	353953	-3.87	-4.03	-3.54	6.46	5.59	6.45
15: Food products and beverages	5946427	5645721	5484663	-1.03	-1.31	-0.29	100.00	100.00	100.00

Source: NSSO, 55th, 61st and 66th round

The data reveals that manufacturing of grain mill products (NIC-153) and manufacture of other food products (NIC-154) are the two sub-sectors of food processing industries which together employ more than 75 per cent (38 % each) of the workers in 1999-2000. There was a sharp decline in the share of manufacturing of grain mill products (NIC-153) during the decade and its share fell to 31 per cent in 2009-10 (refer Figures 2.2 and 2.3). There was a decline in employment in all sub-sectors of food processing industries except in manufacturing of Dairy Products (NIC-152) which experienced an average CAGR of 5 per cent during the decade (2.6 %in the first half and 7.8 %in second half). Further probing reveals that the decline was sharper during the period 1999-2000 to 2004-05. In the second half of the decade, all sub-sectors except manufacturing of grain mill products (NIC-153) experienced a positive growth in employment.

Figure 2.2 : Share of sub sectors (1999-00)

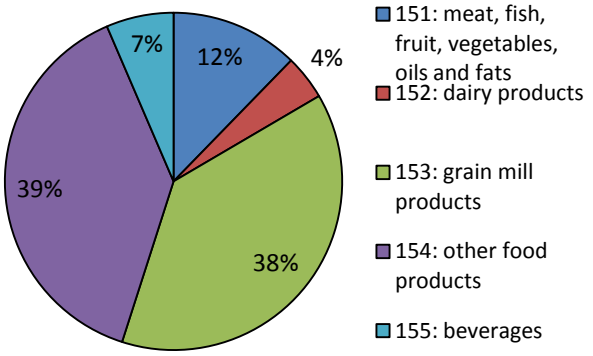
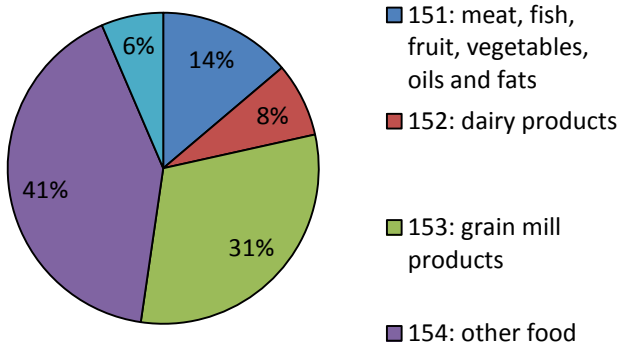
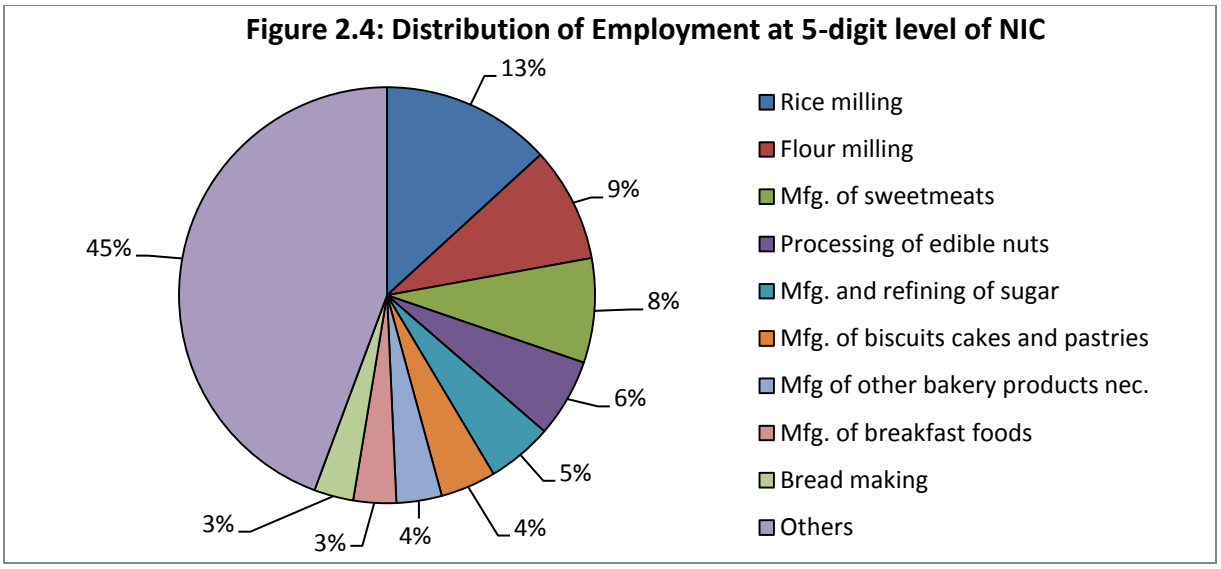


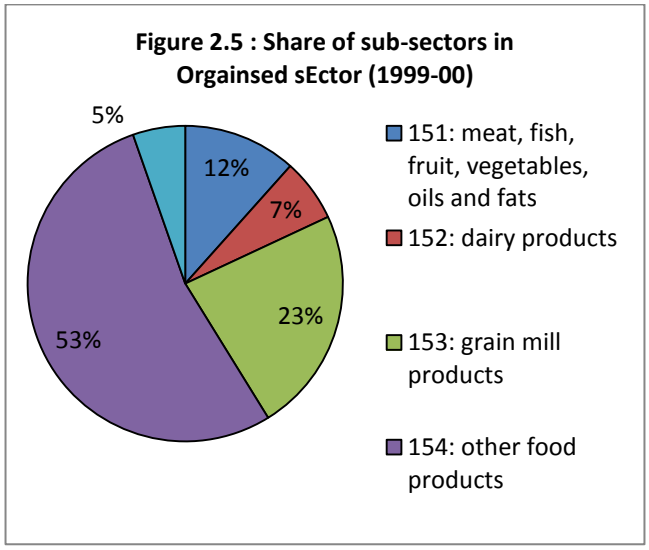
Figure 2.3 :Share of sub sectors (2009-10)

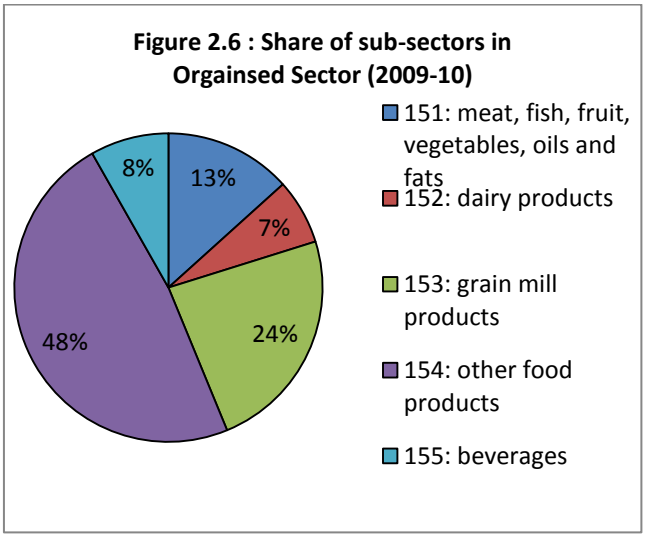


It is worth mentioning that manufacturing of grain mill products (NIC-153), which is one the biggest employers, suffered a decline of 1.2 per cent and 4.7 per cent per annum during the two halves of the decade. A more detailed sector distribution of employment (Figure 2.4) is given at 5-digit level for 2009-10 (data in Annexure 2). Some salient features of employment at sub-sector level in 2009-10 are given at Annexure 3.



The data given by ASI at 3-digit level of NIC for the years 1999-2000, 2004-05 and 2009-10 are placed at Table 2.4. The data reveal that during the previous decade, all the sub-sectors in the organized sector experienced an overall positive growth in employment; only manufacturing of dairy products (NIC-152) and manufacture of other food products (NIC-154) saw a decline in the first half. Out of all sub-groups, beverage industry saw a splendid increase of 6.2 per cent i.e. the highest amongst all (Figures 2.5 & 2.6).





The data from Table 2.4 depict that there was not much change in the structure of employment among various sub-groups. The share of manufacture of beverages (NIC-155) increased from 5.4 per cent in 1999-2000 to 7.1 per cent in 2004-05 and further to 8.2 per cent in 2009-10. Similarly, the share of processing of meat, fish, vegetables and fruits (NIC-151) increased by about 2 per cent points during the decade. On the other hand, the share of employment of

manufacture of other food products (NIC-154) declined from 53.4 per cent in 1999-2000 to 50 per cent in 2004-05 and further to 48 per cent in 2009-10.

Table 2.4 Employment Trends in Sub-sectors of Organized Food Processing Industries

	Employment			CAGR (%)			Share of Sub-sectors		
NIC	1999-00	2004-05	2009-10	1999-00 to 2004-05	2004-05 to 2009-10	1999-00 to 2004-05	1999-00	2004-05	2009-10
151: Meat, fish, fruit, vegetables, oils and fats	156413	171769	213982	1.9	4.5	3.2	11.61	12.79	13.32
152: Dairy products	86832	83802	110014	-0.7	5.6	2.4	6.44	6.24	6.85
153: Grain mill products	311799	334411	379365	1.4	2.6	2.0	23.14	24.90	23.62
154: Other food products	720040	657494	770626	-1.8	3.2	0.7	53.44	48.96	47.99
155: Beverages	72334	95449	131965	5.7	6.7	6.2	5.37	7.11	8.22
15: Food products and beverages	1347418	1342925	1605952	-0.1	3.6	1.8	100.00	100.00	100.00

Source: Annual Survey of Industries, various issues

2.1.3 Reasons for Employment Change

The significant increase in the dairy sector employment, especially in the second half of the decade, may be attributed to important schemes which were implemented by Government of India during 2008-09. Schemes like Intensive Dairy Development Programme (IDDP) has benefited about 18.79 lakh farm families and organized about 26,882 village level Dairy Cooperative Societies till 31st March, 2009. Further, scheme on Strengthening Infrastructure for Quality and Clean Milk Production (CMP) has drastically improved the available milk quality at the village level since its inception. It has resulted in installing 21.05 lakh litre capacity of Bulk Milk Coolers to facilitate marketing of milk produced by them and keeping

its quality intact. To bring about changes in the unorganized section which is dominant in this sector, Dairy Venture Capital Fund was approved and implemented through National Bank for Agriculture and Rural Development (NABARD). This scheme has given incentive for taking loan to use modern machinery for increased scale of production.

Further, dairy sector was de-regularised in 1991. Milk and Milk Product Order (MPPO), 1992 which controlled the processing capacity and collection areas was revised in 2002. As a result, controls were withdrawn and private sector investment increased.

Roller Flour mills get a fixed quota of wheat through Food Corporation of India (FCI) at controlled rate. Beyond that limit, these mills purchase wheat from open market. The major difference in FCI prices and open market prices makes it unfavourable to run the production at market prices. As a result, the flour mills are running at 40 to 50 per cent of their capacity. The big millers in the organized sector are making profit due to the quota from FCI (*Business Standard*, January 14, 2010). Since local flour mills (*chakkis)* in unorganized sector are not getting such facilities, these could not compete and are loosing the business. Another reason for the growth of this sub-sector in the organized sector and decline in the unorganized sector is better variety of flour, fortification, etc. (As told by Association members to IAMR Research team).

2.1.4 Broad Employment Trends by States

Table 2.5 presents data on employment in food processing industries in 19 major states during 2004-05 and 2009-10. These states employ more than 95 per cent of the total workforce in food processing industries.

It is interesting to note that in 2009-10, four states viz., Uttar Pradesh, Andhra Pradesh, West Bengal and Maharashtra together employed about 52 per cent of the total workforce in the sector (Annexure-6). Uttar Pradesh employed maximum workers (14.67 per cent) followed by 14.30 per cent in Andhra Pradesh, 12.97 per cent in West Bengal and 10.01 per cent in Maharashtra. The same four states were the major employers in 2004-05 also; though the ranking has changed.

2.1.5 Share of Food Processing Employment in Manufacturing in different States

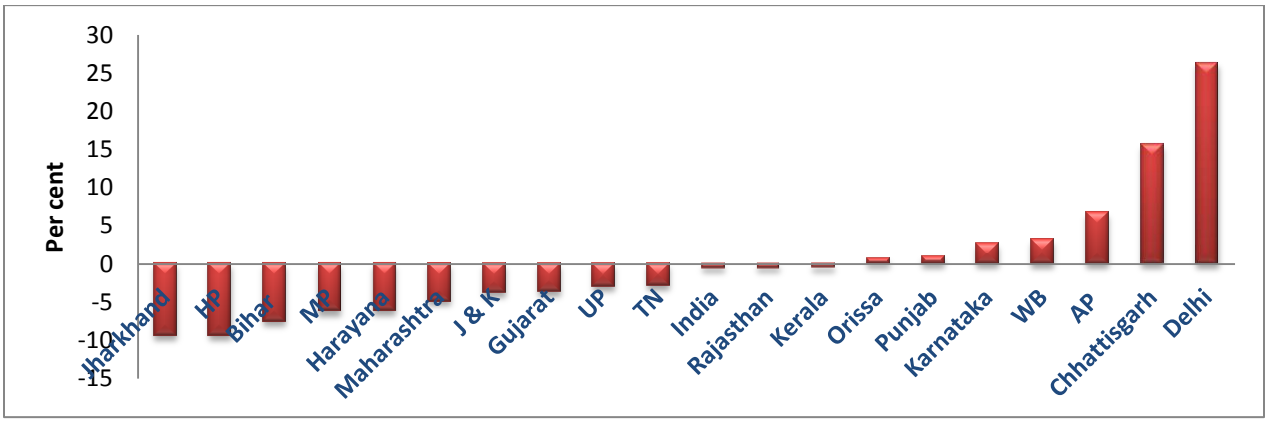
At all India level, 10.8 per cent of the employment in manufacturing sector was employed in food processing sector (Annexure-6), it is observed that within states the share of employment in food processing industries in the total manufacturing varies from 57.6 per cent in Lakshadweep to 2.4 per cent in Manipur. The other states with higher proportion of food processing employment in the total manufacturing are Chhattisgarh (25.5%), Assam (24.7%), Meghalaya (21.5%), Uttarakhand (20.4%), Kerala (21%), Tripura (20%), Sikkim (17.3%). However, the four states with major contribution to food processing employment in India had a comparatively smaller share within the state manufacturing employment. The proportion of

these states may be small due to their broad population base. The share of food processing employment in the total manufacturing in Uttar Pradesh was 11.5%, in West Bengal 11%, in Maharashtra 10.1% and in Andhra Pradesh 16.8%. Clearly, all these are big states and have other manufacturing activities as well, while smaller states (which are not so industrialised) may have smaller food processing units in the unorganised sector and thus have a larger proportion.

2.1.6 Growth in employment in food processing industries in different States, 2004-05 to 2009-10

A close look at the data in Table 2.5 reveals that during 2004-05 to 2009-10, employment in food processing industries at all India level declined by about 1.6 lakhs. The major employment losing states were Maharashtra (1.56 lakhs), Uttar Pradesh (1.30 lakhs), Tamil Nadu (0.63 lakhs) and Madhya Pradesh (0.62 lakhs). It is interesting to note that Maharashtra, Uttar Pradesh and Tamil Nadu are the states that have largest share of employment in food processing industries accounting for around 35 per cent of total employment share. Due to their large size, these states have a bigger base year figure and hence the decline in employment in percentage terms may not seem to be large. However, in terms of CAGR, Jharkhand and Himachal Pradesh suffered the maximum decline (9.4% each), followed by Bihar (7.5%), Madhya Pradesh (6.2%) and Haryana (6.15%).

Figure 2.7: State-wise Employment growth rate (CAGR), 2004-5 to 2009-10



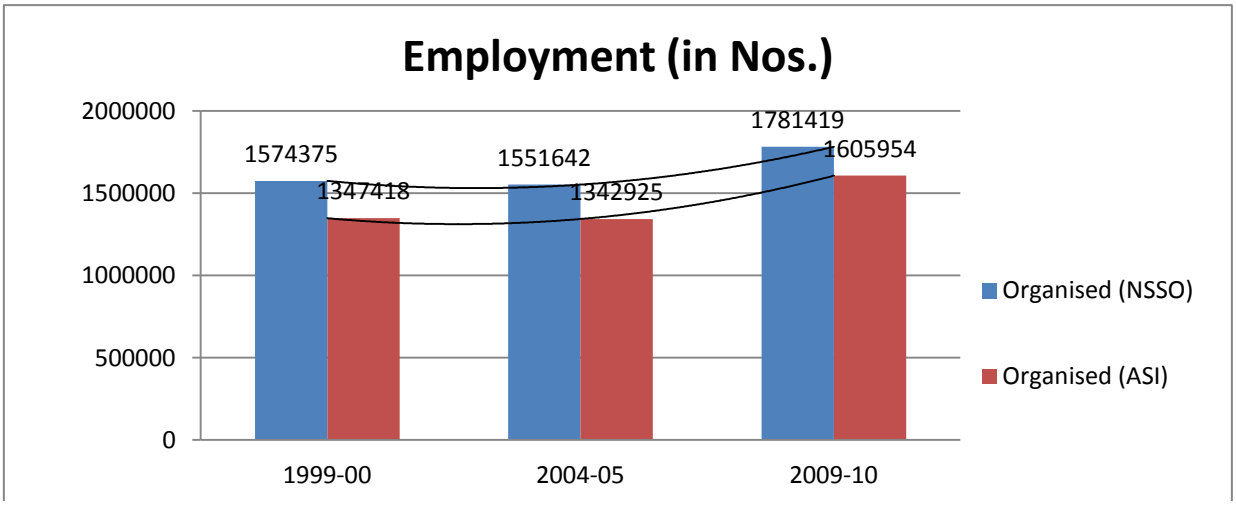
On the opposite side, in Andhra Pradesh and West Bengal the employment grew by 2.2 lakhs and 1.03 lakhs respectively during the same period. In terms of CAGR, these growths were 6.7 per cent and 3.17 per cent respectively.

Box-1: Informal employment in organized sector

The NSSO defines organized sector as enterprises employing more than 10 workers, and ASI defines as enterprises employing more than 10 workers and registered under the factories act,1948.

	Employment (No.)		
	1999-00	**2004-05**	**2009-10**
Total (NSSO)	5946427	5645721	5484663
Organised (NSSO)	1574375	1551642	1781419
Organised (ASI)	1347418	1342925	1605954
Informal in Organised (NSSO)	226957	208717	175465
Share of Informal in Org. (NSSO)	14.42%	13.45%	9.85%

According to the table above, the informal employment that exists, i.e, employment in factories which have not registered has been declining over the years. In 1999-2000 organized manufacturing (NSSO) employed 15.7 lakh workers, while as per ASI it was 13.5 lakh indicating that about 2.3 lakh workers were working as informal or contractual workers in this industry. The informal employment by the same argument in 2004-05 and 2009-10 works out to be 2.1 lakh and 1.8 lakh respectively.



2.2 Gross Value added (GVA)

The data on GVA are provided by CSO through its annual publication 'National Accounts Statistics' under two heads: registered and unregistered industries. The registered industries are those covered by ASIs. Thus, GVA by organized and unorganized sectors is taken as contribution by registered and unregistered industries respectively.

2.2.1 Broad GVA trends

The GDP for manufacturing as a whole went up by Rs. 23,50,614 crores in the last decade with a growth rate of 7.06 per cent (Table 2.6) with the second half performing much better than the first half. Food and beverages sector witnessed a similar trend with the overall growth by 5.62 per cent. Interestingly, the second half of the decade saw a growth rate at almost same as manufacturing in total. This could be due to the fact that second half of the decade attracted more FDI as compared to the first half. Even though the growth rates have been satisfactory but the share of food and beverages in total manufacturing are declining over the past decade. This is because the share of some industry like manufacture of rubber and petroleum products (NIC-23+25), manufacture of motor vehicles etc. (NIC-34+35) and manufacture of electric machinery (NIC-31+32) has increased significantly during the decade.

Table 2.5: Growth in Contribution of Food Processing Industries to GDP, 1999-2000 to 2009-10 (at 2004-05 prices)

Sector	GVA (Rs. Crore)			CAGR		
	1999-00	2004-05	2009-10	1999-00 to 2004-05	2004-05 to 2009-10	1999-00 to 2009-10
Food Products & Beverages	38252	44355	66078	3.00	8.30	5.62
Manufacturing	331758	453225	713428	6.44	9.5	7.96
Total Economy	2143129	2971464	4493743	6.75	8.62	7.69
Percentage of Food Products & Beverages in Manufacturing	11.53	9.81	9.26			
Percentage of Food Products & Beverages in total economy	1.78	1.5	1.47			

Source: NAS, 2011

A significant structural change has been observed from the analysis of Table 2.7 which provides data for GVA by the food processing sector through organized and unorganized sectors. The organized sector scenario reveals that there was an average annual growth of 8.40 per cent in GVA during the last decade. Similar to overall sector growth, the organized part also witnessed a significant growth in the second half as compared to the first half (2.47% in the first half and 14.67% in the second half). In the case of unorganized sector, despite a higher growth in the first half of the decade, the GVA declined to negative in the second half (3.56% in the first half and -0.04% in the second half). The overall growth in GVA during the decade by unorganized sector was less than one-fourth of the organized sector. The share of organized and unorganized sectors was almost equal in 1999-2000 and 2004-05 but the share of organized sector became two-thirds of the total GVA in 2009-10.

Table 2.6: Growth in Contribution of Food Processing Industries in organized and unorganized sector to GDP, 1999-2000 to 2009-10 (at 2004-05 prices)

Sector	GVA			CAGR			Share (%) in total		
	1999-2000	2004-05	2009-10	1999-2000 to 2004-05	2004-05 to 2009-10	1999-2000 to 2009-10	1999-2000	2004-05	2009-10
Organised	19608	22148	43910	2.47	14.67	8.40	51.26	49.93	66.45
Unorganised	18644	22207	22168	3.56	-0.04	1.75	48.74	50.07	33.55
Total	38252	44355	66078	3.00	8.30	5.62	100.00	100.00	100.00

Source: NAS, 2011.

The possible reasons for this phenomenon as revealed during various discussions with the industry association officials are the influx of FDI and adoption of advanced technology by the industries in organized sector along with changing life-style, increased income and preference for packaged foods, etc.

2.2.2 Sub-sectoral GVA Trends

All the sub-sectors witnessed a positive growth in the period 2004-05 to 2009-10. Table 2.8 presents the GVA at sub-sector level – its growth and share in food processing sector during 2004-05 to 2009-10 (analysis for earlier period could not be done due to lack of data). Manufacturing of beverages (NIC-155) experienced the highest annual growth (17.6%) followed by 9.9 per cent in manufacturing of other food products (NIC-154). Annual growth rate in other sub-sectors was around 6 per cent.

The share of contribution of manufacturing of other food products (NIC-154) increased from 33 per cent in 2004-05 to 36 per cent in 2009-10. Similarly, contribution of manufacturing of beverages (NIC-155) increased from 8 per cent to 12 per cent over the same period. A sharp decline of over 3 per cent points in the share of contribution by manufacturing of grain mill products (NIC-153) was observed over this period.

Table 2.7: Sub-sectoral growth of Food Processing Industries to GDP, 2004-5 to 2009-10 (at 2004-05 prices)

	GVA (Rs. Crore)		Share in total		CAGR (%)
Sector	2004-05	2009-10	2004-05	2009-10	
151: Meat, Fish, Fruits, Vegetables & Oils	9236	12224	20.82	18.50	5.77
152: Dairy Products	3509	4762	7.91	7.21	6.30
153: Grain Mill Products	13467	17741	30.15	26.85	5.81
154: Other Food Products	14822	23664	33.41	35.81	9.81
155: Beverages	3421	7687	7.71	11.63	17.58
15: Food Products	**44355**	**66078**	**100.00**	**100.00**	**8.29**

Source: NAS, 2011

Table 2.9 provides the sub-sectoral contribution to GDP by the industries working in organized and unorganized sectors.

It is observed that the entire growth in GVA was through organized sector industries as there was no growth by unorganized sector industries and three of the five sub-sectors in unorganized sector reported negative growth.

Table 2.8: Gross Value Added by Food Processing Industries by sectors of economy (Rs. Crore at 2004-05 prices)

	2004-05				2009-10				CAGR	
	GVA		Share in total		GVA		Share in total			
Sector	Orgn.	Unorgn.	Orgn.	Unorgn.	Orgn.	Unorgn.	Orgn.	Unorgn.	Orgn.	Unorgn.
151	3683	5553	16.63	25.01	7764	4460	17.68	20.12	16.09	-4.29
152	2528	981	11.41	4.42	3808	954	8.67	4.30	8.54	-0.56
153	3699	9768	16.70	43.99	9326	8415	21.24	37.96	20.32	-2.94
154	9577	5145	43.24	23.17	16491	7173	37.56	32.36	11.48	6.87
155	2661	760	12.01	3.42	6521	1166	14.85	5.26	19.63	8.94
15	22148	22207	100.00	100.00	43910	22168	100.00	100.00	14.67	-0.04

Source: NAS-201The contribution from organized sector has increased in all the sub-sectors and witnessed an average growth of 14.7 per cent during 2004-05 to 2009-10. The highest (20.32%) growth was observed in manufacture of grain mill products (NIC-153) and the lowest (8.54%) was in the manufacture of dairy products (NIC-152). The share of manufacturing of grain mill products (NIC-153) and manufacture of beverages (NIC-155) in organized sector increased with a corresponding decline in manufacture of other food products (NIC-154).

On the contrary, the GVA by industries in unorganized sector declined by 0.04 per cent during the period under review. Manufacture of beverages (NIC-155) and that of other food products (NIC-154) witnessed positive growth rates of 8.94 per cent and 6.87 per cent respectively. The GVA in other industries in unorganized sector showed a declining trend. The share of manufacture of other food products (NIC-154) increased by 9 per cent points with a decline in processing of meat, fish, fruits and vegetables (NIC-151) and manufacturing of grain mill products (NIC-153).

The data suggest that in 2004-05, the ratio of contribution of GVA by food processing industries in organized and unorganized sector was 50:50 but during the five years time, this ratio has changed to 66:34. In the case of manufacturing of dairy products (NIC-152), 72 per cent of the GVA was through organized sector in 2004-05 which has increased to 80 per cent in 2009-10. Similarly, more than 80 per cent of the value addition in manufacture of beverages (NIC-155) is through organized sector. In fact, the contribution of organized sector has increased in all sub-sectors but the increase is remarkable in the manufacture of grain mill products (NIC-153), from 28 per cent to 53 per cent and processing of meat, fish, fruits and vegetables (NIC-151), from 40 per cent to 64 per cent.

Summing up, total employment in food manufacturing sector in India decreased from 5.95 million in 1999-2000 to 5.65 million in 2004-05 and further to 5.48 million by 2009-10. Most of the decrease was accounted for by employment in the unorganized segment of the industry, though there was some increase in the organized segment also. However, it is important to examine not only the trends for the organized and unorganized segments separately, but also to assess whether within the organized segment formal employment has been growing at the expense of the informal employment. The growth of employment in ASI was more as compared to NSSO. The distribution of segment employment between formal and informal suggests that the share of informal employment in organised manufacturing has declined over time.

Another significant point is that the share of food processing sector in manufacturing in terms of employment is more than its share in GVA. In 1999-2000, 13.5 per cent of workers in manufacturing (engaged in food processing) were contributing 11.5 per cent to manufacturing GVA. Similarly, in 2009-10, 10.8 per cent of manufacturing employment (engaged in food processing) contributed 9.3 per cent to the manufacturing GVA.

2.3 Employment Elasticity

As mentioned earlier, the employment growth in the manufacturing sector was negative in the second half of the decade but GVA growth was positive throughout the decade. As a result, employment elasticity was negative for manufacturing in the second half of the decade. However, for the decade as a whole, both employment and GVA growth were positive. Thus, employment elasticity was positive. (Tables 2.1 and 2.6)

In the case of food processing sector, the employment growth was negative throughout the decade but value addition to GDP was positive in both the periods. Thus, employment elasticity was negative throughout the decade. Using Tables 2 and 4, the employment elasticity for the food processing sector during the decade 1999-2000 to 2009-10 was (-) 0.15; (-) 0.34 in the first half and (-) 0.07 in the second half. This suggests that employment potential of the sector has improved over time.

Table 2.9: Employment Elasticity in Food Processing Industries

Sector	CAGR						Employment Elasticity		
	Employment			GVA					
	1999-00 to 2004-05	2004-05 to 2009-10	1999-00 to 2009-10	1999-00 to 2004-05	2004-05 to 2009-10	1999-00 to 2009-10	1999-00 to 2004-05	2004-05 to 2009-10	1999-00 to 2009-10
Total*	-1.03	-0.58	-0.81	3.00	8.25	5.62	-0.34	-0.07	-0.15
Organised**	-0.07	3.64	177	2.47	14.67	8.40	-0.03	0.25	0.21
Unorganised***	-1.29	-2.05	-1.71	3.56	-0.04	1.75	-3.62	58.43	-0.98

Note: * NSSO; ** ASI; *** NSSO (-) ASI

Source: Working Group for 12th Plan; Annual Survey of Industries, various issues

Using data for organized sector as defined by ASI (Tables 3 and 5) for the decade 1999-2000 to 2009-10 as a whole, the CAGR for both employment and GVA were positive. However, the rate of growth of GVA was much higher as compared to growth rate of employment, resulting in employment elasticity of 0.17. Comparing the two halves of the decade, employment elasticity in the first half was negative. Employment elasticity for this period was 0.2 which suggests that if this trend of growth in employment and GVA continues, the organized sector of food processing would be an ideal sector as was envisaged in 11th plan. In the case of unorganized sector (Table 2.10), the employment growth was negative throughout the decade, and as a result, it exhibited negative employment elasticity during the decade.

Tabe 2.11 provides employment elasticity of different sub-sectors of food processing industries in organized and unorganized sectors for the period 2004-05 to 2009-10. At the sub-sector level, manufacture of dairy products (NIC-152) was the maximum employment generating sub-sector followed by manufacture of beverages (NIC-155) and processing of meat, fruits and vegetables (NIC-151). Manufacture of grain mill products (NIC-153) was the only employment losing sub-sector.

Table 2.10: Employment Elasticity in organized and unorganized sectors

	CAGR (%) of GVA (at 2004-05 prices)			CAGR (%) of Employment			Employment Elasticity		
	2004-05 to 2009-10			2004-05 to 2009-10					
	Organised	**Unorganised**	**Total**	**Organised**	**Unorganised**	**Total**	**Organised**	**Unorganised**	**Total**
151: Meat, Fish, Fruits, Vegetables & Oils	16.09	-4.29	5.77	4.49	2.12	2.76	0.28	-0.49	0.48
152: Dairy Products	8.54	-0.56	6.30	5.59	8.70	7.83	0.66	-15.62	1.24
153: Grain Mill Products	20.32	-2.94	5.67	2.55	-6.32	-4.71	0.13	2.15	-0.83
154: Other Food Products	11.48	6.87	9.96	3.23	-1.05	0.29	0.28	-0.15	0.03
155: Beverages	19.63	8.94	17.58	6.69	0.18	2.33	0.34	0.02	0.13
15: Food Products	14.67	-0.04	8.30	3.64	-2.05	-0.58	0.25	58.43	-0.07

Source: For Total Employment –– NSSO; For Organized Employment -- ASI; For Unorganized Employment-- Residual; For GVA -- NAS, 2011

Organised sector was found to be employment generating sector as employment elasticity was positive for all sub-sectors over this period. Employment elasticity ranged between 0.66 for the manufacture of dairy products (NIC-152) to 0.13 for the manufacturing of grain mill products (NIC-153).

However, in the unorganized sector, at the aggregate level, both GVA and employment growth were negative, though decline in employment was sharper than the GVA. The processing of meat, fruits and vegetables (NIC-151), manufacturing of dairy products (NIC-152) and manufacture of other food products (NIC-154) with negative elasticity were observed to be employment losing sectors. Manufacturing of grain mill products (NIC-153) witnessed a negative growth in both GVA and employment; though decline in employment was sharper.

2.4 Investment Trends

The Ministry of food processing industries believes that food processing sector has a significant role to play in achieving the above objectives of the Manufacturing Plan. It is widely accepted that the food processing sector is the most appropriate sector for creating jobs for rural poor, and thus it can reduce the burden on agricultural sector for creation of their livelihood.
As reported by the economic survey 2008-09, the gap between producer and consumer prices are very wide and this needs to be addressed with proper infrastructure development and marketing support in this sector.

When comparing the plan outlays for the 10^{th} and 11^{th} plan, it was observed that there was a major jump in investment in infrastructure from Rs. 180 crore to Rs. 2,613 crore under the same head. The current proposed outlay is Rs. 5,225 crore emphasizing further development in this area (12^{th} plan working group report, 2011)

Various Schemes for Infrastructure Development

Under the various schemes to induce infrastructure development, the Mega Food Parks Scheme (MFPS) was introduced during the 11^{th} plan. Apart from infrastructure development, this plan also promoted the cluster approach wherein there would be a Hub which would provide the necessary raw materials for the food processing industries.

The Scheme for Cold Chain, Value Addition and Preservation Infrastructure was another programme introduced during the same period. This dealt with the existing logistics constraints, especially for perishables and wastage reduction.

The Scheme for Modernization of Abattoirs was the third important component. This scheme aimed at creating infrastructure for hygienic and more humane slaughtering of animals leading to availability of hygienic meat to the domestic consumers as well as for exports.

The Ministry also established/upgraded institutions to guide the growth of the sector in the desired direction. The establishment of National Meat and Poultry Processing Board, Indian Grape Processing Board, upgradation of the Indian Institute of Crop Processing Technology are significant milestones during this period. Above all, a National Institute of Food Technology Entrepreneurship & Management (NIFTEM) has been established by the Ministry as a Centre of Excellence to cater to all aspects of technology, entrepreneurship, research, skill development and management for the sector at the apex level.
Investment trends at the industry level could be analyzed only for the organized sector (defined by ASI) due to data constraints. As per the data provided by ASIs (placed at

Annexure 4, 5 and 6), the total capital invested in food processing industries has increased at a compound annual growth rate of 11.6 per cent during 1999-2000 to 2009-10. The increase was 5.4 per cent in the first half of the decade which jumped to 18 per cent per annum during the second half of the decade indicating high mechanization of processes. This increase may also be a result of foreign investment which has increased since 2005-06. Of the capital invested in food processing industries (FPIs), almost half was in the form of fixed capital, suggesting expansion in the scale of plants and machinery in the sector. The growth of fixed capital investment was similar to total capital investment a tremendous increase from 5.5 per cent in the first half of the decade to 19 per cent in the second half.

Although, the profitability of the sector has marginally increased during the decade, productivity of the food processing sector has declined with a slight improvement in the second half of the decade.

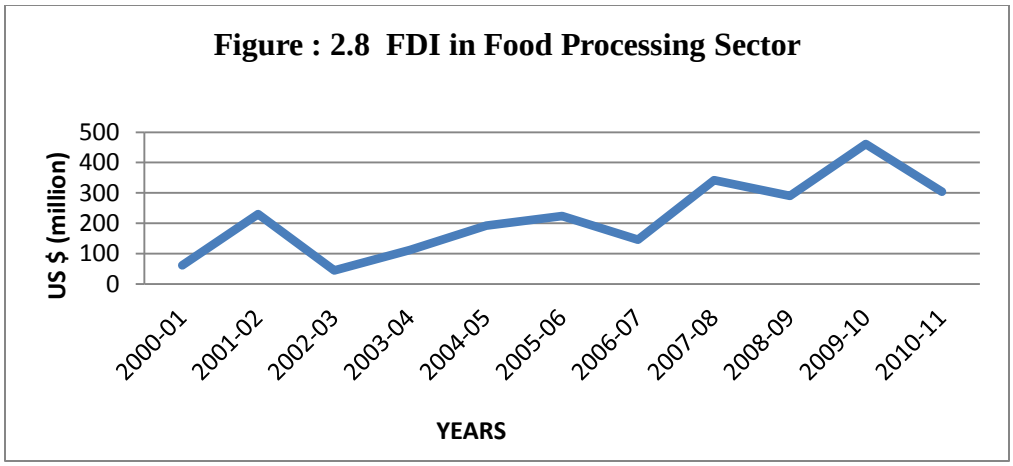
2.5 Foreign Direct Investment (FDI)

The FDI can be defined as a non-debt capital flow type mode of investment which is a leading source of external financing, especially for the developing economies. It not only brings in capital and technical knowhow but also increases the competitiveness of the economy.

The FDI has made an intensive impact on the growth of the sector especially in the food packaging and consumer foods. Eleventh five year plan had also given top priority to the FDI for the sectors' growth. The traditional machineries and method of production have been changed to compete with the global market (As revealed from the discussions with FICCI and Association officials and IAMR team). The FDI has enabled easy integration of food processing industries with the global market.

A target of US $ 25.07 billion worth of FDI Inflows to Food Processing sector has been set to be achieved by 2015 (Vision 2015, MOFPI). The main focus of this investment is on the supply chain related to infrastructure like cold storages, abattoirs and food parks.

Important initiatives by the Indian government have led to significant growth in FDI Inflows to FPIs. Food processing sector has been attracting substantial FDI and is among the top ten sectors getting FDI equity. In India, FDI up to 100 per cent equity is permitted under the automatic route in food and infrastructure like food parks and cold chains, as a result of which an amount of Rs. 12,138.6 crore (2,648.12 million US $) has been invested in this industry through FDI during 2000-2011 (annual data in Annexure-7). This recorded an 18 per cent CAGR during the period as compared to 24 per cent growth in total FDI attracted by the various sectors of the Indian economy. Demand growth, supply advantages and policy support have been instrumental in attracting this FDI.



Source: Department of Industrial Policy and Promotion, Ministry of Commerce and Industries

The investment in food products and beverages was made in four basic industries viz. food processing industries, sugar industries, fermentation industries and vanaspati & vegetable oil industries. The share of food processing sector in FDI is 1.7 per cent of the total FDI received by various industries. Of the total FDI invested in food processing sector, about 52 per cent was invested in food processing industries followed by 36 per cent in fermentation industries and 10.5 per cent in vanaspati and vegetable oil industries. Investment in sugar industries was just 1.5 per cent of the total FDI in food processing sector. Figure 5 indicates that there is an increasing trend in FDI in food processing sector.

Box 2: Low FDI in sugar industries

Although 100 per cent FDI is allowed in this sector why only 1.5 per cent of the total FDI in food processing sector has been channelized to the sugar industries during 2001-2011 were examined with industry officials. It is interesting to note that there is no joint venture in the sugar sector and FDI is almost nil in the sector.

The reason as explained by Sh. K.N. Rathinavel, Secretary, South Indian Sugar Mills Association is the excessive government control over the entire chain/ process of sugar manufacturing which have been driving away investors anticipating lower profits.

Although FDI in sugar industry is very smalland overall growth of employment in this sector being slow (2000-2010), It was noted that there is no adverse impact on the employment due to this FDI, in fact employment has increased and there has been modernization in production processes of this sector

In recent times from 2011 onwards, the sector is growing in a healthy manner and expected to grow more rapidly with the additional investment of Rs. 80, 000 to 100,000 crore.

On the contrary, Dr. K. Selvaraj, Secretary General, South India Mills' Association, stated that before atomization/modernization there were four workers deployed in one machine. At present the same four workers are deployed in four machines resulting in the loss of employment in the sugar industry.

On ground realities, there was no sign of technology advancement in sugar mills. The industry sources blame it to the strict regulatory regime for the sugar industry. In fact, sugar industry is highly controlled and is not free to take any policy decision. As a result, no one is interested in investing in this industry. No FDI is coming in this industry, which is operating on obsolete technology.

Source : IAMR discussion with experts (2012)

Chapter III

Implications of Various Factors on Employment

This section deals with implications of various factors like technological advancement, outsourcing and sub-contracting, and regulations and laws, as applicable in the food processing industries on employment.

3.1 Technological Advancement

As mentioned earlier, more than two-third of the workforce in the Indian food processing industries is engaged in unorganised sector which is traditional and labour intensive. By education levels, the majority (55 per cent) of food industry employees are involved in production and are by far have studied till 10^{th} standard or below (NSDC, 2010).

In order to face the international competition, big players operating in the organised sector have adopted these technological changes and automation. As observed earlier, there seems to be no loss in employment in organised sector, but the sector is facing skill shortages for some occupations. There are exceptions to the trend of technological advancement as one seen in Orissa (see Box 3).

As a part of the budgetary requirement by the food ministry for technology up-gradation, Rs. 400 crore have been allotted only for setting up/modernization/expansion of Food Processing Industries (12^{th} Plan working group report). This was initiated through a programme known as National Mission on Food Processing (NMFP) wherein industries are given monetary support to procure new machineries.

Box 3: Case Study: Cashew Industry, Ganjam district, Orissa

With many industries under the food and beverages sector modernizing the production processes, there are still certain regions where this trend has not yet taken off.

The Ganjam district of Orissa, famous for its cashew product has highly labour intensive units with working conditions deteriorating day by day. It was noticed that due to such harsh conditions, women (who constitute the maximum employment in cashew product units) have started leaving their jobs resulting in high employee turnovers.

The thriving industry here witnesses a lack of intension among owners to improve factory infrastructure (increasing floor area of operations) to provide minimum facilities for the women workers. The owners do not want to realize the benefits of modern machines for higher productivity and better hygiene.

Few units which have adopted new technologies are facing lack of skilled labour since only one ITI has begun offering training course in cashew processing. This lack of training opportunity and low demand of training has resulted in a vicious circle of low supply and demand of training in this area.

In the course of discussion with various stakeholders, it was found that, some industries producing vanasapti, biscuits etc. have introduced up-graded technology in their processes, as a result of mergers and acquisitions of small units by bigger companies. Since these large players use advanced cost cutting technology, smaller units couldn't withstand the competition so they either perished or became a part of these large players (Mr. K. P. Mohandas, General Secretary, Indian Biscuit Manufacturers Association)

Although technological up-gradation has resulted in increase in the quantity and quality per se, but the share of inputs as percent to output actually increased from 86.8 per cent in 1999-2000 to 89.2 per cent in 2004-05 and to 88.4 per cent in 2009-10 indicating the increase in organized GVA largely driven by the increase in use of inputs (ASI reports, 1999-2000, 2004-05 and 2009-10).

The fact that the organized segment employment in this sector was increasing during the decade suggests that, even though technological change is taking place in this sector, workers have not been displaced due to this development.

3.2 Outsourcing and Sub-contracting

Outsourcing and sub-contracting is the fate of globalised economy of the world. When economic reforms were adopted by India in 1991, all these global concepts were also introduced in the market economy. Outsourcing and sub-contracting were adopted by the industrialists as a cost saving technique and to simplify the administrative procedures,. This way, additional burden of the employers had come down without affecting the employment opportunities in the sector.

Some of the industries in food processing sector were reserved for small industries sector (SSI). After de-reservation, big players came in the sector and smaller industries (which were facing financial crises) started working on franchise basis for the big industries. Big companies outsourced various activities to smaller companies on sub-contracting basis. For example, when biscuit industry was de-reserved in 1997-98, many local and regional players started producing biscuits for Parle and Britannia on franchise basis. (K.P.Mohandas, General Secretary, India Biscuit Manufacturers Association).

Outsourcing and sub-contracting has not affected the number of workers but the nature of employer and employment has changed. Sh. Malhan, General Secretary, Food Processors Association of India, during the discussions with IAMR team, expressed that due to rigid labour laws, employers prefer to outsource the activities on contract basis.

In many cases, however, big companies have merged or acquired smaller companies, which has reduced the requirement of employment. For example, Cargill India (P) Ltd., Agrotech Foods Ltd. have acquired many Indian companies. Amalgamation of small companies has

resulted in loss of employment (Sh. Gurumurthy, Secretary General, Vanaspati Manufacturers Association).

3.3 Regulatory Regime/Policies and Food Related Laws

Ministry of Food Processing Industries is the main central agency responsible for promoting and regulating the food processing sector. The Ministry has accorded a high priority to this sector with a number of policy measures, incentives and schemes announced from time to time. The National Food Processing Policy is one such initiative that aims at creating an appropriate climate for investment in the industry.

The character of today's labour/worker is also changing. Skilled workers in the organised sector are demanding more remuneration and quite sophisticated working conditions. If it is not suited to them, they do not hesitate to look for other opportunities.

However, the employees in organized food processing sector are getting about 33 per cent lower emoluments than those of the manufacturing sector (ASI reports, 1999-2000, 2004-05 and 2009-10). The situation of workers in unorganized sector working in poor service conditions without any social security like health and insurance facility is even worse. Rao and Dasgupta (2009) have observed that wages in some sectors are even lower than those for the workers in the agriculture labour indicating the residual nature of employment. The average wage of the workers in food processing industries was observed to be less than the statutory minimum wages. With the evolution of Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGA) and low paid jobs in unorganized FPIs, the workers are shifting away from the sector. (Sh. Malhan, Secretary, Food Processing Association of India, during discussions with IAMR Research team also expressed the same view).

Further, the labour/workers in the unorganised sector with low level of education and skill do not have suitable working conditions and employment benefits. They have to migrate to cities (with high cost of living) in search of jobs. MGNREGA has provided them the opportunity to work in the native places. This is one of the reasons for decline in the employment in unorganised sector and informal employment in the organised sector.

The food laws in India are enforced by the Director General of Health Services, Ministry of Health and Family Welfare, Government of India (GoI). The main law which applies to this industry is food Safety and Standards Act, 2006 (Integrated Food Law) which aims at achieving a high degree of consumer confidence in the quality and safety of produced, processed, sold or exported food.

Before the enactment of Food Standards and Safety Act (FSSA) - 2006 (implemented in 2011), there were various food laws applicable to food and related products in India. Multiple laws/regulations prescribed varied standards regarding food additives, contaminants, food

colours, preservatives and labelling. In order to rationalize the multiplicity of food laws, the FSSA has been introduced to integrate food laws and it will be a single reference point in relation to the regulation of food products. After the enactment of the proposed Food Safety and Standards Bill, 2005 in India, the food processing sector would be governed by only one law and one regulator, instead of presently applicable 15 different laws. With this simplified mechanism growth in the food-processing sector would kick-start, which is needed to ensure higher growth for the agriculture sector.

This law will help in standardize the products for international market. Since the law has not been enforced fully, according to industrial sources, it will be too early to react. Sh. Malhan, Secretary General, Food Processing Association of India was of the view that industry will be more competitive and products will be more acceptable in the international market after enforcement of this law.

There are few cases in which a very important point has come to notice, i.e., industries shifting from one place to another due to difference in value added tax (VAT) hence affecting the employment in that particular area. One such case occurred with the beedi manufacturers in Tamil Nadu who moved to West Bengal because of rising of VAT on their product by Tamil Nadu.

Another such factor which till recent past was a major hindrance was freight charges. In one such case, as conveyed by Mrs. Veena Sharma (Roller Flour Mills Association), the flour mills (which employ a majority of food sector) were located mainly in Northern India due to low freight charges than in southern India because of which flour in this part (southern India) is very expensive. These charges were reduced to 50 per cent in 2010 and have been completely slashed out with effect from July 2012. It is expected to result in even growth of flour mills throughout the country. The reduction in freight charges will reduce the prices of wheat in southern parts of India. This will reduce the imports of wheat from Australia, Ukraine by the south Indian roller flour millers. (Bloomberg.com)

In support to FPI, the government provides grains at subsidized rates for a fixed quota; if any manufacturer wants to produce more flour then they have to buy it from the open market at a much higher price. As observed by Mrs. Sharma, manufacturers stick to their quota and do not produce above that as it is not profitable for them which is blocking further growth opportunities. The industry is working at 40 to 50 per cent of its capacity.

From the above discussion, three important questions emerge, which are detailed as follows:

- *How has increase in investment and introduction of new technology lead to a change in employment?*

There is a large influx of foreign investment and upgraded technology in the food processing industries operating in organized sector. This has a positive impact on employment which

increased by an annual growth rate of 1.8 per cent during the decade 1999-2000 to 2009-10 and by 3.6 per cent in the second half of the decade. As a result of these two inputs, the value addition by the organized sector has increased by an annual growth rate of 8.4 per cent during the same decade and by 14.7 per cent during the second half of the decade. The mechanization require less manpower but expansion of production and activities have compensated it.

However, technology up-gradation has led to skill gaps in the existing workforce. Industry is facing problems in getting skilled manpower especially at the lower level to operate sophisticated machines.

- *How has outsourcing and sub-contracting of certain operations resulted in employment change?*

Outsourcing and sub-contracting have not replaced labour in general. However, the nature of employment has changed. This has increased casualisation. The small units working for outsourced and sub-contracted activities have to adhere to the same quality standards. These units are using traditional labour intensive technologies. Thus, employment has not gone down due to these factors. However, industry is not very clear on this issue.

- *What specific policies and reforms have led to differential performance in the sector?*

The Food Standards and Safety Act (2006), enacted in 2011, will enable the Indian food industries to compete with international standards and will open doors to exports of processed food. Industry will also get rid of about a dozen other regulations with the enactment of this Act. Uniform freight charges (in the case of wheat) will bring roller flour mills at level platform across the country. Government initiatives for food parks have been welcomed by the industry. The reduction in excise and customs duty and corporate taxes, export promotion through export promotion zones, have contributed to the growth of the sector.

Different rates of VAT in different states have resulted in uneven concentration of the industries in some states. Labour laws are the impediments to growth of smaller units. The APMC act, poor infrastructure, inadequate research and development, are the other factors which are hindering the growth of the sector.

CHAPTER IV

Policies and Impediments

4.1 Existing policies promoting this sector

- **Excise duty:** Many processed food items are totally exempt from excise duty like biscuits up to Rs. 100/- per kg.

- **Customs duty** rates have been substantially reduced on plant & equipments, as well as on raw materials, especially for export production.

- **Corporate taxes** have been reduced and there is a shift towards market related interest. There are tax incentives for new manufacturing units for certain years, except for industries like: beer, wine, aerated water using flavouring concentrates, confectionery & chocolates etc.

- **Repatriation of profits** is freely permitted in many industries except for some, where there is an additional requirement of balancing the dividend payments through export earnings.

- **Food Parks:** In a bid to boost the food sector, the Government is working on agri-zones and the concept of mega food parks to attract FDI in the food processing sector.

- **Export Promotion:** Free trade zones (FTZ) and export processing zones (EPZ) have been set up with all necessary infrastructure. Also, setting up of 100 per cent Export oriented units (EOU) is encouraged in other areas. They may import free of duty all types of goods, including capital goods. Units in EPZ/FTZ and 100per cent EOUs can retain 50 per cent of foreign exchange receipts in foreign currency accounts. Fifty per cent of the production of EPZ/FTZ and 100 per cent of EOUs are saleable in domestic tariff. All profits from export sales are completely free from corporate taxes. Profits from such exports are also exempt from Minimum Alternate Tax (MAT).

- **Integrated food law:** The Government is also moving towards introducing an integrated food law, which is expected to help meet the requirements of international trade and make the Indian food industry competitive in the global market.

- **Infrastructure development:** To harness the value-creating potential of agro-processing, superior market mechanism and infrastructure are required to be created.

- **Marketing support:** State governments have already begun to actively encourage the creation of aggregators by encouraging companies to engage in agriculture marketing.

4.2 Recently announced policies for promoting this sector

- **National Mission on Food Processing:** Just recently, the Working Group constituted on Food Processing Sector for Ministry of Food Processing Industries for the 12th Five Year Plan has recommended the launch of a new centrally sponsored scheme -- National Mission on Food Processing (NMFP) during 12th Plan for effective supervision and monitoring of the Ministry's assisted projects. It provides greater role to States/UTs including flexibility in the selection of beneficiaries, location of projects etc. for the development of food processing sector. Food Processing Training Centers (FPTCs) also constitute the part of NMFP during the 12th Plan. Ministry of Food Processing Industries (MFPI) provides financial assistance to implementing agencies for setting up of FPTCs on the recommendations of State Nodal Agencies appointed by respective States/ UTs. (Source: Press Information Bureau, Government of India, 4th May 2012)

- **The manufacturing and industry strategy for the 12th Five year Plan**

  On the basis of lessons learnt during 11th Plan and keeping in view the priorities of the National Manufacturing Plan, the manufacturing and industry strategy for the 12th Five year Plan has been devised based on three basic principles (Planning Commission, 2012).

  - Firstly, greater emphasis would be laid on decentralized process of implementation with more involvement of states in selection of projects vis-à-vis beneficiaries and monitoring their implementation.
  - Secondly, focus would be on policy making and coordination so as to address the critical issues impacting the value chain in the sector.
  - Lastly, the existing focus on infrastructure development will be continued with expansion of scope and depth so as to ensure sustainability of the value chains.

  The key recommendations of this plan for the sector are as follows

  - Expanding and modifying existing infrastructure development schemes
  - New Mega Food Parks
  - Additional Cold Chain Projects
  - Modernized Abattoirs – Establishment of new abattoirs and modernization of existing abattoirs
  - Developing and strengthening of existing and new institutions

- Taking up a nation-wide skill development programme along the lines of special projects for skill development of rural youths under Swarn Jayanti Gramin Yojna (SGSY) of Ministry of Rural Development (MoRD).
- Putting in place a network of food testing labs (Government/ Private) through providing incentives.
- Encouragement for larger participation in Codex deliberations and setting up of Codex Cell to promote, coordinate and monitor related initiatives at the level of stakeholders such as industry associations, national research institutions etc.
- Setting up of an Innovation Fund and Venture Capital Fund for Food Processing to promote innovations and technology development as well as to support conversion of the innovations into viable business opportunities.

4.3 Impediments hampering the sector

- **The Agricultural Produce Marketing Committee (APMC)** Act in India restricts the farm produce to be sold in open markets. Under the Act, the private sector/processing industry was not allowed to buy directly from farmers nor were the farmers allowed to enter into direct contract with any buyer. The central government has amended the APMC Act (since agriculture falls under the jurisdiction of state governments) in 2002, but some of the states are yet to amend this law. (Sharma, 2007).

- **Poor infrastructure** for storage, marketing and distribution of food products. Nearly 25-40 per cent of agri-produce is lost post-harvest season. According to estimates, India's marketable surplus is set to increase by 350 metric tones per acre (mtpa) to 870 mtpa by 2012. Around 40 per cent of the increase (150 mtpa) would be accounted by perishable fruits and vegetables. The need for investments in the areas of infrastructure and supply chain is evident from the fact that India's current storage infrastructure for all food items is only 100 mtpa. (Harchekar, 2008). Above situation discourages processing units to reach optimum size and achieve economies of scale. Additionally, lack of consistent quality hinders small scale units to build brand equity for them in international and domestic market.

- **Inadequate Research & Development (R & D) activities:** There is a lack of large-scale on-farm validation of techniques and feedback thereon, leading to practically no scope for enhancement. Further, research is very commodity centric and information so produced is not disseminated properly amongst departments and concerned authorities.

- **Skilling labour:** The industry is in dire need of highly skilled/trained manpower across different levels to handle various operations in manufacturing and processing segment of the sector.

- **Low Adherence to Quality Standards:** There is an increasing need for food processors to adhere to quality standards for both domestic as well as export market. But there seems to be a lack of requisite controls across the agri-value chain from farm inputs to storage of produce to food processing techniques.

CHAPTER V

Conclusions

In India, the Food Processing Industry is in nascent stage and has potential for FDI. It accounts for Rs. 1,280 billion (US$29.4 billion), in a total estimated market of Rs. 3,990 billion (US$91.66 billion). There is a rapidly increasing demand for processed food caused by rising urbanization and income levels. To meet this demand, the investment required is about Rs. 1,219 billion (US$28 billion). Food processing has been declared a priority sector.

The last decade (2000-10) witnessed an impressive growth in terms of GVA contribution by the FPIs at an average rate of 5.6 per cent per annum. The growth was significant in second half of the decade at 8.2 per cent as compared to the first half at 3.1 per cent.

Table 5.1: Employment and GVA by sectors of economy in Food Processing Sector (GVA in Rs. crore at 2004-05 prices)

	2004-05		2009-10	
	Employment	**GVA**	**Employment**	**GVA**
Organised	1551642 (27.48)	22148 (49.93)	1781419 (32.48)	43910 (66.45)
Unorganised	4094079 (72.57)	22207 (50.07)	3703244 (67.52)	22168 (33.55)
Total	5645721 (100.00)	44355 (100.00)	5484663 (100.00)	66078 (100.00)

Note: Figures in brackets represent percentage to total
Source: Employment- NSSO; GVA-CSO

As Table 5.1 indicates, though the maximum amount of employment is recorded in the unorganized sector throughout the decade, the GVA contribution has been much higher by the organized segment suggesting much higher efficiency and productivity due to the introduction of technology by this segment of the sector..

At the sub-sectoral level, other food products and beverages have indicated a marvelous GVA growth (17.6 % CAGR) along with the other sectors.

In spite of the impressive growth rate of the sector, the employment in this case had declined throughout the decade. The decline was sharper in the first half of the decade when GVA growth was also slow. The loss of employment was more due to the decline of employment in

the unorganized sector whereas the organized sector reported an increase in employment in the second half and creates hope in terms of provision of good employment opportunities. The major employment losing states were Maharashtra, Uttar Pradesh, Tamil Nadu and Madhya Pradesh and account for around 35 per cent of the total employment share in the sector.

The growth in the share of organized sector from 26 per cent in 1999-2000 to 32 per cent in 2009-10 and decline in the share of informal employment in the organized sector are the striking features of the employment trends.

Summarizing the GVA and employment trends, employment elasticity suggests that the employment growth was negative throughout the decade but value addition to GDP was positive in both the periods. Thus, the employment elasticity turns out to be negative for the whole decade.

During the 11^{th} five year plan, the Food and Beverages sector witnessed a high amount of investment in infrastructure under some major schemes. The 12^{th} five year plan also focuses on the same as the Ministry of Food and Beverages anticipates that better infrastructure would lead to narrowing of price gap in the market. To encourage foreign collaborations and investment, 100 per cent FDI has been allowed in this sector. At the micro level, the organized sector enterprises have started investing in machinery but this phenomenon is at the initial stage.

Technological advancement was seen to have both a positive and a negative impact on employment as introduction of new machinery replaces labour but at the same time creates better hygiene and environment at work place.

With sub-contracting and outsourcing becoming so popular due to the stringent labour laws, though there is not much impact on employment reduction but in some cases, these have resulted in shutting down of smaller units which could not withstand the growing competition.

Labour laws on the one hand have restricted smaller units to grow beyond a point but also certain policies like Food Safety and Standards Act, 2006 would make it easier for the enterprises as it combines and simplifies 15 other laws. Other state level policies such as VAT differentials have caused industries to shift from one place to another as in the case of Tamil Nadu. Further, complete removal of freight charges would start a trend of equal industry growth in all areas.

One of the prime objectives of the future Action Plan being employment generation, the expansion of food processing sector will have bearing upon employment generation. Government has taken necessary steps to create more jobs in the food processing sector by providing financial assistance through its various schemes for development of the sector which is expected to reach an increased level of processing and employment. Vision 2015 aims to triple the size of food sector in 10 years time by increasing the level of processing of

perishables from 6 per cent to 20 per cent, value addition from 20 per cent to 35 per cent and share in global food trade from 1.5 per cent to 3 per cent.

The MFPI facilitates creation of food related infrastructure including processing facilities aimed at reducing wastages, enhancing value addition and increasing shelf life. Under the Scheme for Technology Up-gradation/Modernization/Establishment of Food Processing Industries, A National Horticulture Mission (NHM) has also been launched with an objective to boost the horticulture sector.

In the 11th Plan, the Ministry has approved new scheme to establish 30 Mega Food Parks with a view to provide state-of-the- art infrastructure for food processing sector in the country on a pre-identified cluster basis with a strong backward and forward linkage and to provide value addition of agricultural commodities including poultry, meat, dairy, fisheries etc. in a demand driven manner. Financial assistance up to 50 per cent of project cost excluding land component in general areas and 75 per cent in difficult areas, subject to a maximum of Rs. 50.00 crore is provided for setting up of Mega Food Parks.

To encourage setting up of cold chain facilities and backward linkages in the country, MFPI has a Plan Scheme for Cold Chain, Value Addition and Preservation Infrastructure, during the 11th Plan to provide financial assistance to project proposals received from public/private organizations for cold chain infrastructure development.

5.1 The way forward - Policy Suggestions

- Although the Food Standard and Safety Act, 2006 has been effective from August, 2011, but, it is still to be properly implemented . This is because proper food testing laboratories are still to be constructed and manpower to be trained. So emphasis should be given on this aspect.

- Like the complete removal of freight charges, differential VAT system should also be taken into consideration as soon as possible.

- The unorganized sector and the smaller organized sector enterprises should be given incentives to adopt new technology to increase production and improve working conditions.

- It should be ensured that research and development should cater to all sections in the sector and information should be properly flown within the hierarchy.

- Emphasis should be given on providing more credit facilities to small enterprises as they do not get enough financial support as of now.

- More training institutes should be opened to address the issue of skill development as most of the workers have education below 10^{th} standard.

- Agro-Processing Centre in the catchments should be developed so that wastage can be reduced

- Steps should be taken towards establishment of agricultural training institutes (ATI's) in rural areas with emphasis on Food Processing Training Centers (FPTC) at community/block/district to fill the skilled manpower gap. Also, on-the-job formal training should be encouraged. This would ensure the presence of middle skill level manpower that is at present missing from the workforce in this sector.

Annexures

Annexure-1: Places visited for discussions and data collection

- Ministry of Food Processing Industries, New Delhi
- All India Food Processors Association, New Delhi
- Vanaspati Manufacturers Association of India, New Delhi
- Indian Dairy Association, New Delhi
- Roller Flour Millers Federation of India, New Delhi
- Delhi Roller Floor Mills Association, New Delhi
- Indian Biscuit Manufacturers Association, New Delhi
- South Indian Sugar Mills Association, Chennai
- Indian Confectionary Manufacturers Association, Chennai
- All India Bread Manufacturers Association, New Delhi
- Federation of Biscuit Manufacturers of India, New Delhi
- Indian Sugar Mills Association, New Delhi
- National Federation of Cooperative Sugar Factories Ltd. , New Delhi
- Confederation of Indian Alcoholic Beverages Companies, New Delhi
- All India Distillers Association, New Delhi
- Indian Beverages Association, New Delhi
- Chief Editor, Indian Food Packer, New Delhi
- Indian Soft Drinks Manufacturers Association, New Delhi/Gurgaon
- Poultry Federation of India, Gurgaon
- Council of State Industrial Development & Investment Corporation of India, New Delhi
- West Bengal Milk Federation, Kolkata
- All India Alcohol Based Industries Development Association, Mumbai
- Agricultural & Processed Food Products Export Development Authority (APEDA) , New Delhi
- All India Meat & Livestock Exporters Association, Mumbai
- Wheat Products Promotion Society, New Delhi
- National Dairy Development Board, Kolkata

Annexure 2 : Distribution of Employment in Food Processing Industries (Food Products and Beverages: (NIC-15) in 2009-10

NIC Code	Description	Employment	Share (%)
15111	Mutton Slaughtering, preparation	147210	2.68
15112	Beef - Slaughtering, preparation	44832	0.82
15113	Pork - Slaughtering, preparation	3133	0.06
15114	Poultry and other Slaughtering, preparation	56896	1.04
15118	Production of flours and meals of meat and meat offals	1017	0.02
15119	Production, processing & Preserving of other meat and meat products nec.	437	0.01
15121	Sun-drying of fish	246	0.00
15122	Artificial dehydration of fish and sea food	14727	0.27
15123	Radiation preservation of fish and similar food	1410	0.03
15124	Processing and canning of fish	40111	0.73
15125	Mfg. of fish meal	982	0.02
15129	Processing & Preserving of other fish and fish products nec.	18714	0.34
15131	Sun-drying of fruit and vegetables	19093	0.35
15132	Artificial dehydration of fruits and vegetables	2782	0.05
15134	Mfg. of fruit /vegetable juice and their concentrates	64592	1.18
15135	Mfg. of Sauces, jams , jellies, and marmalades	3841	0.07
15136	Mfg. of Pickles, chutneys	59308	1.08
15137	Canning of Fruits and vegetables	7619	0.14
15138	Mfg. of Potato flour & meal and prepared meals	900	0.02
15139	Fruits and vegetables preservation nec.	34716	0.63
15141	Mfg. of hydrogenated oils and vanaspathi gee	51592	0.94
15142	Mfg. of vegetable oils and fats	119007	2.17
15143	Mfg. of vegetable oils and fats through solvent extraction	56305	1.03
15146	Mfg. of cakes & meals	1306	0.02
15147	Mfg. of non-defatted flour or meals of oil seeds	5377	0.10
15149	Mfg. of other vegetables & animal oils & fats etc.	2058	0.04
15201	Mfg. of milk powder, ice cream powder	40917	0.75
15202	Mfg. of baby milk foods	3229	0.06
15203	Mfg. of butter cream gee. Cheese, and khoya etc.	163605	2.98
15204	Mfg. of pasteurized milk	95282	1.74
15205	Mfg. of ice creams kulfi etc.	82498	1.50
15209	Mfg. of other dairy products	36532	0.67
15311	Flour milling	489719	8.93
15312	Rice milling	724246	13.20
15313	Dal Milling	41626	0.76

15314	Processing and grinding of grain other than floor rice dal	42634	0.78
15315	Vegetable milling , flour or meal	8713	0.16
15316	Mfg. of breakfast foods	182338	3.32
15317	Mfg. of prepared blended flour , wet flour for food preparation	14635	0.27
15318	Mfg. of other readymade mixed powders like idly	2489	0.05
15319	Other grain milling and processing activities nec.	127929	2.33
15321	Mfg. of starch	676	0.01
15322	Mfg. of sago and sago products	10687	0.19
15326	Mfg. of corn oils	3695	0.07
15331	Mfg. of cattle feeds	39377	0.72
15411	Bread making	167990	3.06
15412	Mfg. of biscuits cakes and pastries	236636	4.31
15419	Mfg of other bakery products nec.	193566	3.53
15421	Mfg. and refining of sugar	279094	5.09
15422	Mfg. of gur from sugar cane	39261	0.72
15423	Mfg. of gur from other than sugar cane	440	0.01
15424	Mfg. of khandsari from sugar cane	41450	0.76
15426	Mfg. of khandsari from other than sugar cane	2483	0.05
15429	Mfg. of other indigenous sugar cane sugar bee palm juice	14929	0.27
15431	Mfg. of cocoa products	9171	0.17
15432	Mfg. of sugar confectionary	28292	0.52
15433	Mfg. of sweetmeats	445393	8.12
15434	Mfg. of chewing cum	516	0.01
15439	Other activities relating to mfg . of cocoa, chocolate and sugar confectionary	9846	0.18
15440	Mfg. of macaroni, noodles couscous and similar products	12909	0.24
15491	Processing and blending of tea	119843	2.19
15492	Coffee curing roasting grinding and blending etc.	8877	0.16
15493	Processing of edible nuts	334536	6.10
15494	Mfg. of malted foods including food for infants and invalids	9805	0.18
15495	Grinding and processing of spices	80545	1.47
15496	Mfg. of papads, appalam and similar products	105275	1.92
15497	Mfg. of vitaminised high protein flour, dal and other cereals	13783	0.25
15499	Other semi processed, processed instant foods nec.	107032	1.95
15511	Mfg. of country liquor	46615	0.85
15519	Distilling, rectifying and blending of sprits, ethyl alcohol production	2878	0.05
15520	Mfg. of wines	17027	0.31
15531	Mfg. of beer	82225	1.50
15532	Mfg. of malt liquors other than beer	22806	0.42
15539	Mfg. of malt liquors and malt nec.	440	0.01
15541	Mfg. of aerated drinks	29198	0.53

15542	Mfg. of synthetic flavoured concentrated and syrups	430	0.01
15543	Mfg. of mineral water	31418	0.57
15544	Mfg. of Ice	26550	0.48
15545	Mfg. of Soft drinks	78147	1.42
15549	Mfg. of other non-alcoholic beverages nec.	16220	0.30
	Total	5484663	100.00

Source: NSSO, 2009-10

Annexure 3: Salient features of the employment in the sub-sectors in 2009-10

(i) Production, processing and preservation of meat, fish, fruit, vegetables, oils and fats (NIC-151)

This sub-sector employed about 14 per cent of the workforce in sector. About one-third of the employment of the sub-sector is engaged in the (i) Production, processing and preservation of meat, and meat products (NIC-1511) and (ii) Manufacture of vegetables and animal oils and fats (NIC-1514) while one-fourth of the employment in the sector is engaged in Processing and preservation of fruit, vegetables, and edible nuts (NIC-1513).

(ii) Manufacture of dairy products (NIC-152)

The sub-sector employs only 7.7 per cent of the total workforce in the food processing sector. The major chunk of employment (39 per cent) is in Manufacturing of butter, cream, gee, cheese, and khoya etc. (NIC-15203) followed by 23 per cent in Manufacturing of pasteurized milk (NIC-15204) and 20 per cent in Mfg. of ice creams, kulfi etc. (NIC-15205).

(iii) Manufacture of grain mill products, starches and starch products and prepared animal feeds (NIC-153)

This sub-sector employs more than 30 per cent of the total employment in the food processing sector. About 97 per cent of the employment in this sub-sector is engaged in grain milling industries (NIC-1531). Within grain milling industries, rice milling (NIC-15312) engages 44 per cent of the workers of this sub-sector while Flour milling (NIC-15311) and Manufacture of breakfast foods (NIC-15316) are the next employers that engages 30 per cent and 11 per cent shares respectively of the grain milling.

(iv) Manufacture of other food products (NIC-154)

This is another important sub-sector of the food processing industries that provides employment to 22.6 lakh persons, which constitutes 41.2 per cent of the total employment in food processing industries. The major employer industries in this sub-sector are manufacture of bakery products (which includes manufacture of biscuits, bread and pastries, etc) (NIC-1541), manufacture of cocoa, chocolate and sugar confectionary (NIC-1543) and manufacture of sugar (NIC-1542) .

(v) Manufacture of beverages (NIC-155)

The share of this sub-sector in terms of employment is only 6.5 per cent in the total employment of food processing sector. More than 50 per cent of the employment of this sub-sector is engaged in manufacture of soft drinks and mineral water (NIC- 1554) followed by 30 per cent in manufacture of malt liquors and malt (NIC-1553). The rest of employment is engaged in manufacture of wines and alcohols.

Annexure 4 : Foreign Direct Investment in Food Processing Sector, 2001-20011

(million dollars)

Sector	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	Total	Share in
												(Apr-Dec)		FPI
A	0	0	3.97	0	2.94	3	9.85	10.07	5.01	0.1	0.17	4.44	39.56	1.49
B	16.02	11.04	8.07	1.7	139	169.83	27.58	270.05	144.7	112.02	57.71	53.15	1,010.87	38.17
C	45.75	219.39	36.88	109.22	43.98	41.74	102	70.17	102.71	278.89	188.67	125.93	1,365.32	51.56
D	0	0	0	1.69	9.09	12.31	16.22	1.53	42.88	69.74	58.07	60.4	271.93	10.27
FPI Total	61.77	230.43	44.95	112.61	192.07	223.88	145.8	341.75	290.29	460.65	304.45	239.48	2648.12	100.00
Gr. Total	2,378.68	4,027.69	2,704.34	2,187.85	3,218.69	5,539.72	12,491.77	24,575.43	31,395.97	25,834.41	19,426.93	24,187.77	157,969.24	
FPI Share	2.6	5.72	1.66	5.15	5.97	4.04	1.17	1.39	0.92	1.78	1.57	0.99	1.68	
Sector-A-	SUGAR													
Sector-B-	FERMENTATION INDUSTRIES													
Sector-C-	FOOD PROCESSING INDUSTRIES													
Sector-D-	VEGETABLE OILS AND VANASPATI													

Source: Department of Industrial Policy and Promotion, Ministry of Commerce and Industries

Annexure-5: CAGR of selected parameters for food processing industries in organized sector

Parameter	Sector	**1999-00 to 2004-05**	**2004-05 to 2009-10**	**1999-00 to 2009-10**
Factories	Food Products	1.16	1.62	1.39
	Tot Mfg	0.72	3.10	1.90
Fixed Cap	Food Products	5.52	19.16	12.13
	Tot Mfg	5.01	21.37	12.89
Gross output	Food Products	6.52	16.94	11.61
	Tot Mfg	13.25	17.35	15.28
NVA	Food Products	1.47	19.41	10.08
	Tot Mfg	10.89	17.50	14.15
Workers	Food Products	0.28	3.72	1.98
	Tot Mfg	0.99	6.77	3.84
Employees	Food Products	-0.07	3.64	1.77
	Tot Mfg	0.68	6.88	3.73
Emoluments	Food Products	3.65	15.45	9.39
	Tot Mfg	6.13	17.95	11.88
Wages	Food Products	3.75	13.53	8.53
	Tot Mfg	5.86	15.43	10.54
Depriciation	Food Products	7.74	14.40	11.02
	Tot Mfg	8.15	16.16	12.08
Input	Food Products	7.08	16.74	11.81
	Tot Mfg	13.95	17.37	15.65
GVA	Food Products	2.47	18.55	10.22
	Tot Mfg	10.43	17.29	13.80
Fuels	Food Products	7.65	14.42	10.98
	Tot Mfg	9.24	13.48	11.34
Invested Cap.	Food Products	5.43	18.17	11.62
	Tot Mfg	6.03	20.54	13.05
Profit	Food Products	-0.09	29.07	13.56
	Tot Mfg	25.03	17.43	21.17

Source: *Annual Survey of Industries*, various issues

Annexture 6 : Employment in Food Processing Industries by States during 2004-05 and 2009-10

States/UT	Employment				Share of employment		Share of FPI in Mfg.	Rank	
	2004-5	2009-10	Abs. change	CAGR	2004-5	2009-10	2009-10	2004-5	2009-10
AP	566134	784183	218048	6.73	10.03	14.30	16.75	4	2
Bihar	209522	141573	-67949	-7.54	3.71	2.58	9.09	10	13
Chhattisgarh	73298	151131	77834	15.57	1.30	2.76	25.54	15	25
Delhi	23196	74512	51316	26.29	0.41	1.36	4.59	19	16
Gujarat	210935	175264	-35671	-3.64	3.74	3.20	5.10	9	10
Harayana	73225	53318	-19907	-6.15	1.30	0.97	3.60	16	18
HP	23866	14611	-9254	-9.35	0.42	0.27	10.72	18	22
Jharkhand	80540	49165	-31374	-9.40	1.43	0.90	6.32	14	19
J & K	47853	39502	-8351	-3.76	0.85	0.72	8.27	17	20
Karnataka	250825	285315	34490	2.61	4.44	5.20	10.29	7	7
Kerala	361203	351740	-9463	-0.53	6.40	6.41	20.96	6	6
Maharashtra	705544	549062	-156482	-4.89	12.50	10.01	10.07	2	4
MP	224668	163131	-61537	-6.20	3.98	2.97	9.32	8	11
Orissa	177904	185091	7187	0.80	3.15	3.37	12.89	12	8
Punjab	125967	132911	6944	1.08	2.23	2.42	9.93	13	14
Rajasthan	181524	176379	-5145	-0.57	3.22	3.22	10.22	11	9
TN	466500	403791	-62709	-2.85	8.26	7.36	7.87	5	5
UP	934902	804549	-130353	-2.96	16.56	14.67	11.45	1	1
WB	608590	711253	102663	3.17	10.78	12.97	10.96	3	3
Other states	299525	238181	-61344		5.31	4.34			
India	**5645721**	**5484663**	**-161058**	**-0.58**	**100.00**	**100.00**	**10.81**		

Source: Compiled from unit level data of NSSO team by IAMR Research

Note: Data in respect of smaller states has not been presented.

Annexure -7: Selected structural ratios for food processing industries in organized sector

Ratio	Sector	Unit	1999-00	2004-05	2009-10
FC per FAC	Food Products	Rs. Lakhs	132.16	163.18	361.77
	Tot Mfg	Rs. Lakhs	305.47	376.28	850.55
NVA per FAC	Food Products	Rs. Lakhs	70.14	71.20	159.58
	Tot Mfg	Rs. Lakhs	117.80	190.61	366.34
WOR per FAC	Food Products	No.	43.49	41.64	46.12
	Tot Mfg	No.	47.74	48.40	57.64
EMP per FAC	Food Products	No.	56.28	52.95	58.44
	Tot Mfg	No.	62.12	62.00	74.23
NVA per EMP	Food Products	Rs. Lakhs	1.25	1.34	2.73
	Tot Mfg	Rs. Lakhs	1.90	3.07	4.94
EMOL per EMP	Food Products	Rs. Lakhs	0.40	0.48	0.82
	Tot Mfg	Rs. Lakhs	0.59	0.76	1.25
WAGE per WORK	Food Products	Rs. Lakhs	0.29	0.34	0.53
	Tot Mfg	Rs. Lakhs	0.40	0.51	0.75
Input / output	Food Products		86.84	89.16	88.39
	Tot Mfg		79.00	81.49	81.54
Emol. / output	Food Products		3.62	3.15	2.96
	Tot Mfg		5.33	3.85	3.95
Profit/output	Food Products		3.39	2.46	4.03
	Tot Mfg		5.27	8.65	8.67
Capital Inv./Empl.	Food Products	Rs. Lakhs	479.02	626.17	1206.65
	Tot Mfg		693.31	898.33	1638.47
Output/Input	Food Products		115.16	112.16	113.14
	Tot Mfg		126.58	122.72	122.64
Fuel/output	Food Products		2.97	3.13	2.80
	Tot Mfg		6.15	5.13	4.34

Source: *Annual Survey of Industries*, various issues

Annexure-8 Proportion of Organized Food Processing Industries in Manufacturing Sector

Parameter	Sector	1999-00	2004-05	2009-10
Factories	Food Products	18.20	18.60	17.30
	Tot Mfg			
Fixed Cap	Food Products	7.87	8.07	7.36
	Tot Mfg			
Gross output	Food Products	16.59	12.21	12.00
	Tot Mfg			
NVA	Food Products	10.84	6.95	7.53
	Tot Mfg			
Workers	Food Products	16.58	16.00	13.84
	Tot Mfg			
Employees	Food Products	16.49	15.89	13.62
	Tot Mfg			
Emoluments	Food Products	11.26	10.00	8.99
	Tot Mfg			
Wages	Food Products	11.81	10.68	9.83
	Tot Mfg			
Depreciation	Food Products	8.38	8.22	7.62
	Tot Mfg			
Input	Food Products	18.23	13.36	13.01
	Tot Mfg			
GVA	Food Products	10.40	7.15	7.55
	Tot Mfg			
Fuels	Food Products	8.01	7.44	7.75
	Tot Mfg			
Invested Cap	Food Products	11.39	11.07	10.03
	Tot Mfg			
Profit	Food Products	10.67	3.48	5.58
	Tot Mfg			

Source: *Annual Survey of Industries*, various issues

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