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ADVANCES IN FOOD PROCESSINGINDUSTRY IN INDIA: OPPORTUNITIES AND CHALLENGES

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Abstract

Food processing industry is one of the largest industries in India. It accounted for about one third of the country's total food market and ranked fifth in terms of production, consumption, exports and expected growth.The Indian government through the Ministry of Food Processing Industries (MoFPI) is making efforts to encourage investment for the growth and development of the industry. It has approved proposals for joint ventures (JVs) and foreign collaborations andhave given licences for setting up 100 per cent export oriented units. Various new schemes for the promotion and development of food processing industry have been launched.

With consumption and production of processed food likely to increase significantly during coming decades, there is an opportunity for larger investment in food processing technologies, skills and equipments, especially in areas of canning, dairying, food processing, food packaging, frozen food, refrigeration and thermo processing.

However, the food processing industry in India is struggling with issues of quality of produce, low productivity, obsolete technology, skills-shortage and infrastructure constraints. This resulted in higher costs, lower profitability and lower value addition. With the entry of MNC brands and food retail outlets the challenge for the industry has become more intense, threatening the existence of some popular Indian cuisines.

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The status of food processing industry in India, opportunities and challenges before the industry and measures required to strengthen the industry are discussed in this paper.

Key words – Food Production, Food Processing Industry, Food Technology, Ready-to-eat Food, Demographic Dividend, Skill Development, Technology Up-gradation.

Introduction

The food sector comprises of agriculture, horticulture, animal husbandry, plantations, fishing, poultry and other food items. In this the food processing industry consists of agricultural products processing units, meat and fish processing units, dairies, grain-mills, ready to eat food production entities, beverages and related industries. The food processing industry is one of the largest industries in India accounting for about one third of the country's total food market. It is ranked fifth in terms of production, consumption, export and expected growth. Food industry is a high-profit and high value addition industry and is recognised by the government as a priority sector.

To promote food processing industry, increase level of processing and exploit the potential of domestic and international market for processed food products a separate Ministry of Food Processing Industries (MoFPI) has been set up by the Government of India. The Ministry includes under the domain of Food Processing Industries items pertaining to these two processes viz. (a) Manufactured Processes: If any raw product of agriculture, animal husbandry or fisheries 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, and (b) Other Value-Added Processes. The Ministry does not deal with food items such as coffee, tea, oilseeds, spices etc, as the allocation of these items are with other Ministries under the Allocation of Business Rules for Central Ministries. However, all these items are also included in the national data base in order to provide a comprehensive picture of the industry (MoFPI, 2015).

The food market in India, as in the rest of the world, is increasing.India's population is huge at 1.21 billion (Population Census, 2011) and is fast expanding at the rate of 17 per cent. This gives

an indication of potential for demand for food in the country. Gradually the food products market is turning more and more complex and competitive. Some of the important reasons for such a change are increasing pace of globalisation, entry of large international and domestic firms in food sector, intra-regional movement of consumers, increasing proportion of working females etc. At the same time India is among the 'young' countries in the world, with the proportion of the work force in the age group of 15 to 59 years, which is increasing steadily. The changing demographic profile due to declining birth rates and improvement in life expectancy gives India a unique 20 to 25 years' window of opportunity called "demographic dividend". This, "demographic dividend" of India needs to be exploited not only to expand the production possibility frontier but also to meet the skilled manpower requirement in India and abroad.

Objective

In the light of above developments the objective of this paper is to explore the status of food processing industry in India, identify the opportunities and challenges before the industry and suggest measures to strengthen the industry to fulfill the expectations of the people.

Methodology

The methodology used for the study was based on exploration of status, initiatives by the government to promote the development of food processing industry and problems and challenges faced by the industry using information available from various sources including international institutions, government institutions, bodies of entrepreneurs and industry besides surveys and researches in the area**.** Thus, the paper is based on information drawn from secondary sources, primarily the publications of Government of India, international bodies and researchers. Besidesthefindings of author's research for doctoral degree on 'changing food habits of people' have been used to sharpen the argument.

Status of Food Processing Industry

The government has declared food processing industry a priority sector and has undertaken several measures to promote modernization of food processing units by creating infrastructure, facilitating research and human resource development there has been a steady growth of food processing industry in the country. The 'Mega Food Parks' to be spread over the country are

expected to cover the entire food processing cycle from farm gates to food retail outlets and further accelerate the growth.

The Vision Document-2015 prepared by the Ministry of Food Processing Industries (MoFPI), envisaged trebling the size of investment in the processed food sector 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 by 2015, with an investment of Rs 100,000 crore (US$ 16.24 billion) by the year 2015 (MoFPI, 2015).The Ministry of Food Processing Industries encouraged investment for the growth and development of the industry. It has approved proposals for joint ventures (JVs), foreign collaboration, industrial licences and 100 per cent export oriented units for the promotion and development of food processing industry in the country.

Some major initiatives undertaken in the Union Budget 2014-15 included: allocation of Rs 2,000 crore (US$ 324.84 million) as a separate National Bank for Agriculture and Rural Development (NABARD) fund for food processing industries during the Union Budget 2014-15; allocation of Rs 180 crore (US$ 29.24 million) to governments in States and Union Territories during 2014-15 for the schemes of **National Mission on Food Processing (NMFP)** including technology up-gradation and establishment and modernisation of food processing industries; approval of Rs 2,100 crore (US$ 341.24 million) by the General Council for National Food Security Mission (NSFM) for 2014-15 to improve the production of oilseeds and pulses;the Spices Board under the Ministry of Commerce & Industry established a Spice Park at Puttady, Idukki district of Kerala as a processing centre for cardamom and pepper for e-auction, grading and colour sorting machine, and Poly Urethane Form (PUF) godowns for cardamom; provided an initial sum of Rs 100 crore (US$ 16.24 million) in the Union Budget 2014-15 to establish two institutions of excellence in Assam and Jharkhand at par with Indian Council of Agricultural Research (ICAR) Centre at PUSA, New Delhi to make farming competitive and profitable and to step up investment, both public and private, agro-technology development and creation and modernisation of existing agri-business infrastructure (Union Budget 2014-15).

For development of skills and human resource and for the realization of the benefits of

demographic dividend "**theNational Skills Policy"** in 2009, set a target of imparting skills training to 500 million people by 2022. The **Prime Minister's National Council on Skill Development** is the apex institution for policy direction and review and concerned with vision setting and laying down core strategies. The **Council** is assisted by the **National Skill Development Coordination Board** that coordinates the skill development efforts of Central Ministries/Departments and States, formulates strategies to implement the decisions, monitors and evaluates the outcomes of the various other schemes and programs, develops appropriate and practical solutions and strategies to address regional and social imbalances, ensures quality control in vocational training and education, monitors private participation strategies and helps put in place sectoral action plans.

The National Skill Development Council (NSDC) acts as a catalyst in skill development by providing funding to enterprises, companies and organisations that provide skill training and develop appropriate models to enhance, support and coordinate private sector initiatives. **The National Council for Vocational Training (NCVT)** advises the government on issues related to various vocational training schemes and the **State Councils for Vocational Training (SCVTs)** carry out the same functions at state level. **The Directorate General of Employment and Training (DGET**), Ministry of Labour and Employment, Government of India, provides strategic framework for skill development for early school leavers and existing workers, especially in the un-organised sector, in close consultation with industry, micro enterprises in the un-organised sector, State Governments, experts and academia. The Ministry of Rural Development empowers young people from the poor and weaker sections of the society through S**warna Jayanti Gram Swarozgar Yojana (SGSY-SP)** ensuring time bound training aimed at bringing a specific number of BPL families above the poverty line through placement services. The Ministry of Urban Development and Poverty Alleviation under the **Swarna Jayanti Shahari ROZGAR Yojana (SJSRY)** provides urban poor access to employment opportunities and self-employment empowering the community to tackle the urban poverty through self managed community structures and capacity building.

The private sector companies like **the Larsen & Toubro, Bharti Group, Hero Group, Maruti, ITC, Infrastructure Leasing & Finance Services Ltd,** etc., have established training facilities

for world class training to create environment of e-learning and innovation on its own and in collaboration with the government and international entities, to upgrade in-house training facilities and provide training to potential employees to make them job ready.

Under international collaborations with developed and industrialized countries t**he UK India Skills Forum** (UKISF), the **German** Ministry of Economic and Cooperation, the **AustraliaIndia Education Links** and the **New Zealand** Open Polytechnic provide technical and vocational support to higher professionals and continuing education courses in consultation with the industry and professionals.

The number of FPI units registered under sections 2m(i) and 2m(ii) of the Factories Act, 1948 is shown in table 1. A factory is defined as an enterprise carrying out manufacturing process employing 10 or more workers with use of power or 20 or more workers without the use of power on any day during preceding 12 months under the Factories Act, 1948.

Table 1: Number of FPI Units Registered under Factories Act

Year	Number of Registered Units	Growth (%)
2007-08	26 219	
2008-09	27 220	3.82
2009-10	27 479	0.10
2010-11	35 838	30.42
2011-12	36 881	2.91
2012-13	37 175	0.08
2013-14	37449	0.07

Note: Factories Registered under Factories Act 1948

Source: Annual Survey of Industries (ASI) CSO (IS Wing), Kolkata

It may be observed in table 1 that the number of FPI units registered under the Factories Act, 1948 has grown at the average annual rate of 6.12% and their number increased from 26 219 in 2007-08 to 37 449 in 2013-14.

The FPI units other than those registered under the Factories Act are not covered under the Annual Survey of Industries (ASI). However, these may be covered under the survey of Micro, Small and Medium Enterprises (MSMEs) or under the National Sample Survey (NSS) rounds from time to time. The principal characteristics of the FPI units registered and unregistered under the MSME sector are given in table 2.

Table 2: Principal Characteristics of Registered and Unregistered FPI units in the MSME Sector

S No	Principal Characteristics	Unit	Registered Units*	Unregistered Units*
1	Working Enterprises	Lakh	2.23	22.89
2	Employment	Lakh	14.68	48.31
3	Original Value of Plant and Machinery	Rs Crore	13,261	14,431
4	Market Value of Fixed Assets	Rs Crore	60,196	31,106
5	Gross Output	Rs Crore	1,37,287	51,561
6	Gross Input	Rs Crore	94,628	30,264
7	Gross Value Added	Rs Crore	42,659	21,297

Note: *Registered Enterprises: Enterprises registered include manufacturing and service sector including retail, wholesale trade and hotels and restaurants up to 31.03.2007 with all District Industries Centres in the States/UTs, KVIC and Coir Board. These were detailed through complete enumeration.

***Unregistered Enterprises**: All enterprises engaged in the activities of manufacturing or in providing/rendering of services, not registered permanently or not filed EM with State Directorates of Industries/ District Industries Centres on or before 31-3-2007 are called unregistered enterprises'.

Source: MSME Census, 2006-07

It may be observed from table 2 that the number of FPI units registered under the MSMEs is ten times and the number of unregistered FPI units is about hundred times the number of FPI units registered as factories under the Factories Act, 1948.

Further that most of the FPI units in India are still small and fall inthe category of Micro, Small and Medium Enterprises (MSME) sector,

State wise position of the FPI units registered under the Factories Act is given in table 3.

Table 3: State-wise Estimated Number of Factories in Registered FPI Units

S. No.	Name of the State/UTs	Number of Registered Units	
		2012-13	2013-14
1	Andhra Pradesh	5,735	5,739
2	Andaman & Nicobar Islands	6	6
3	Assam	1,256	1,294
4	Bihar	736	794
5	Chandigarh (U.T.)	14	19
6	Chhattisgarh	1,008	1,048
7	Dadra & Nagar Haveli	11	7
8	Daman & Diu	37	31
9	Delhi	159	166
10	Goa	90	86
11	Gujarat	1,923	1,903
12	Haryana	608	631
13	Himachal Pradesh	163	172
14	Jammu & Kashmir	156	144
15	Jharkhand	206	198
16	Karnataka	2,038	2,034
17	Kerala	1,501	1,459
18	Madhya Pradesh	738	672

19	Maharashtra	3,077	3,038
20	Manipur	19	21
21	Meghalaya	18	18
22	Nagaland	15	17
23	0disha	931	932
24	Pudducherry	75	69
25	Punjab	2,792	2,787
26	Rajasthan	795	861
27	Sikkim	21	21
28	Tamil Nadu	5,161	5,205
29	Telangana	3,716	3,849
30	Tripura	68	71
31	Uttar Pradesh	2,097	2,037
32	Uttarakhand	383	380
33	West Bengal	1,624	1,740
	Total	***37,175***	***37,449***

Source: Annual Survey of Industries, 2012-13 and 2013-14 (ASI) CSO (IS Wing), Kolkata

It may be observed in table 3 that the FPI units registered under the Factories Act, 1948 are scattered all over the country. However, their major concentration is in some states only. Among these Andhra Pradesh (5 739 units = 15.32%), Tamilnadu (5 205 units =13.9%), Telangana (3 849 units = 10.28%), Maharastra (3 038 units = 8.11%) and Punjab (2 787 units = 7.44%) were top five states with largest number of FPI units registered in 2013-14.

The position of employment in the registered FPI units is given in table 4.

Table 4: Number of Persons Employed in FPI Units Registered under Factories Act

Year	**Number of Persons Employed (Lakh)**	**Growth (%)**	**Employment per unit**
2007-08	15.05		57.40
2008-09	15.64	5.9	57.46

2009-10	16.06	2.69	58.44
2010-11	16.62	3.5	46.38
2011-12	17.77	6.92	48.18
2012-13	16.89	(-) 4.95	45.43
2013-14	17.41	3.08	46.49

Note: Factories Registered under Factories Act,1948

Source: Annual Survey of Industries (ASI) CSO (IS Wing), Kolkata

The employment in the FPI units increased from 15.05 lakh persons in 2007-08 to 17.41 lakh persons in 2013-14. However, the average annual growth in employment in FPI units at 2.24% during this period and the range of average employment per unit in the industry at 58.44 persons in 2009-10 to 45.43 persons in 2012-13 indicated lack of employment growth in the industry. Thus the performance of the industry in employment generation has not been satisfactory.

The fixed capital investment in food processing industry units registered as factories is given in table 5.

Table5: Fixed Capital in FPI Units Registered as Factories

Year	Fixed Capital (Rs Lakh)	Growth (%)
2007-08	68 33 486	18.93
2008-09	81 15 641	18.76
2009-10	99 48 246	22.58
2010-11	120 70 511	21.33
2011-12	145 03 825	20.16
2012-13	158 86 485	9.53
2013-14	168 40 071	6.00

Note: Fixed Capital: Depreciated Value of Fixed Assets owned by the Factory.

Factories Registered under Factories Act, 1948

Source: Annual Survey of Industries (ASI) CSO (IS Wing), Kolkata

The fixed capital investment in the FPI units has grown steadily from Rs 68 33 486 lakh in 2007-08 to Rs 168 40 071 in 2013-14 at the average per year rate of 20.92%. This indicated additional investment infrastructure development and technological up-gradation in the industry besides investment in new enterprises.

The position of Foreign Direct Investment inflows in the FPI units registered as factories is given in table 6.

Table 6: Foreign Direct Investment inflows in FPI Units

Year	FDI (Crore Rs)	Growth (%)	FDI (US$ million)	Growth (%)
2007-08	279.01		70.17	
2008-09	455.59	63.29	102.71	46.37
2009-10	1 314.23	188.47	278.89	171.53
2010-11	858.03	(-) 34.72	188.67	(-) 32.35
2011-12	826.16	(-) 3.71	170.21	(-) 9.78
2012-13	2 193.65	165.52	401.46	135.86
2013-14	25 106.78	1 044.52	3 982.88	892.10

Source: Department of Industrial Policy and Production (DIPP), Ministry of Commerce and Industry, Government of India, New Delhi

The government has th3e policy of encouraging foreign direct investment (FDI) through joint ventures and foreign collaboration including 100 percent export oriented units in the FPI sector. As a result the FDI inflows in the FPI units have increased from year to year in terms of rupees as well as US$, except for the years 2010-11 and 2011-12, when there was decline in the inflows. The position of exports of Agri and Processed Food Products is given in table 7.

Table 7: Export of Agri &Processed Food Products (US $ million)

Year	Exports Agri &FPI (US $ million)	Growth (%)
2009-10	14 871	
2010-11	20 541	38.13
2011-12	31 854	55.08

2012-13	36 457	14.45
2013-14	38 111	4.54
2014-15	35 757	(-) 6.18

Source: Director General Central Excise & Customs (DGCIS), Kolkata

For a long time the FPI units in India remained mainly domestic market consumption oriented. However, with product development and foreign market development there has been growth in the exports of agricultural and processed food products. The exports of agri and processed food products have increased from year to year, except for the year 2014-15, when there was decline in exports. The average per year growth in the exports of agricultural and processed food products has been good at 20.06% during this period.

The contribution of the FPI units to Gross Domestic Product (GDP) is shown in table 8.

Table 8: Contribution of FPI Units to Gross Domestic Product (Rs Crore) at 2004-05 Prices

Year	GDP-FPI	Growth (%)	GDP-FPI as a Share of GDP (%)	GDP-FPI as a share in Manufacturing (%)
2008-09	60 378	5.3	1.5	9.2
2009-10	58 752	(-) 2.7	1.3	8.0
2010-11	67 508	14.9	1.4	8.5
2011-12	82 063	21.6	1.6	9.6
2012-13	84 522	3.0	1.5	9.8
2013-14	71 874	(-) 14.96		

Note: Gross National Product (GDP): Sum of GVA (Value of output less the value of input used up in the process of production) of all resident producer units of the economy during the reference period

Source: National Accounts Statistics, 2014

The analysis given in table 8 shows that the contribution of Food Processing Industry (FPI) to Gross Domestic Product (GDP) has grown from Rs 60 378 crore in 2008 to Rs 71 874 crore in 2013-14, at the average annual rate of 3.8%. The average annual share of FPI in national GDP was 1.46% and its average annual share in manufacturing was 9.02% during this period.

Thus, from the analysis of principal characteristics of the FPI units registered as factories for the period from 2007-08 to 2013-14 given above it may be summarised that private investment has flown to the industry and the sector has experienced growth.

To meet the growing demand of people in India and international tourists a large number of hotels, restaurants, fast food joints, coffee and tea service points and fast food retail outlets have been set up. There has been regular addition to their numbers over the time. These are now spread out not only in the metros and large cities but also in smaller cities and towns. The global and the domestic entrepreneurs both have shown interest and have benefitted from the growth in the sector. Due to the growth in size and penetration some enterprises have grown from proprietorships to corporate.

The ready-to-eat (RTE) food market, which had remained under-penetrated for a long time owing to the consumers' penchant for freshness, low affordability and traditional preference for home-cooked food, has been one of the fastest growing areas. The food service industry is projected to grow at 11 percent to Rs 408 040 crore by 2018. The quick service restaurants and casual dine in formats constitute about 74 percent, café's 12 per cent and others 14 per cent of the total food chain. The revenue from the chain and licenced stand alone units was estimated at Rs 11 500 crore to Rs 11 900 crore in 2013. It is estimated to more than double at Rs 25 000 crore by 2018. This is expected to provide an opportunity to the government to generate revenue of Rs 17 000 crore to Rs 26 000 crore through taxes from the industry (National Restaurant Association of India, 2013). At the same time a strong desire among the consumers to maintain healthy lifestyle and growing awareness of functional ingredients such as herbs, minerals, vitamins, omega fatty acids and probiotic is giving thrust to the demand of functional foods and beverages market (Frost & Sullivan, 2013).

The branded quick service restaurant (QSR) market in India has attracted international brands such as McDonald's, Subway, Nan do's, Domino's, KFC etc. It stood at US$ 13 billion in 2013 and is set to get bigger with new emerging players (Agricultural and Processed Food Products Export Development Authority, 2014).

Opportunities for Food Processing Industry

With India's food demand likely to increase significantly during the coming decades, there is an opportunity for large investment in food processing technologies, skills and equipments, especially in canning, dairying, processing and packaging of frozen food, refrigeration and thermo processing. Fruits, vegetables, fisheries, milk and milk products, meat and poultry, packaged and convenience foods, alcoholic beverages and soft drinks are important sub-sectors of the food processing industry have potential for growth. Health-food and health-food supplements are other rapidly growing segments of the industry (National Restaurant Association of India, 2013).

The opportunity for growth of the industry is also huge,as the country has livestock population of 470 million, it is third largest producer of fish, and the dairy sector, which is worth US$ 62.67 billion, has been growing at the rate of around 5 per cent each year. Carbonated drinks, fruit juices and juice-based drinks, energy and sports drinks, malted beverages, probiotic drinks and bottled water are also showing huge growth in the country.

Challenges for Food ProcessingIndustry

The food market in India is very large with 1 250 million population and it is growing steadily from year to year. The food production industry in India is experiencing good growth.But at the same time the industry is struggling to concentrate on broadening the market and increase penetration amongst Indian consumers. It is also struggling with issues of quality of produce, low productivity, obsolete technology, and infrastructural and human resource constraints,which are resulting in higher costs, lower profitability and lower value addition. With the entry of MNC brands and retail outlets the challenge for the domestic industry has become more intense, threatening the existence of some of the popular Indian cuisines. The weighted percentages of respondents' ranking of the challenges faced by the industry as per the FICCI survey (2010) are given in table 9.

Table 9: Weighted percentages of respondents' ranking of the challenges

Challenge identified	Weighted % of response
Skilled manpower	

Availability of trained manpower	**25.53**
Technology	
Processing plants with cost effective technologies	**16.59**
Cost effective food machinery and packaging technologies	**13.19**
Government policy	
Comprehensive national level policy on food processing sector	34.46
Inconsistencies in central and state policies	28.08
Food safety laws	28.51
Weights and measures Act and Packaging Commodity Rules	5.10
Taxation	21.70
Inadequate infrastructural facilities	44.25
Access to credit	20.85
Market intelligence	13.19
Lack of applied research	21.27
Lack of specific plan to attract private sector investment across the value chain	17.87
General	
Constraints in raw material production	25.10
Adequate value addition	9.78

Source: FICCI Survey 2010 - Bottlenecks in Indian Food Processing Industry

It may be observed from table 9 that in the FICCI survey (2010) skill shortage was given 25.53 per cent weighted response. Further apart from the government policy and lack of good quality infrastructure, availability of trained workforce including chefs and bearers, processing plants with cost effective technologies and cost effective food machinery and packaging technologies were identified as major challenges faced by the industry with weighted response of 16.59 per cent and 13.19 per cent respectively.

The responses from the operators and professionals in food processing industry - the chefs, restaurateurs, hoteliers and owners of food retail outlets, from Udaipur region of Rajasthan in the

opinion survey by Dhar (2015) tothe questions on 'problems generally faced in the management of the food outlets and restaurants' are given in table 10.

Table 10: Problems generally faced in the managements of food outlets/restaurants

Problems faced	**Chefs**	**Restaurateurs**	**Hoteliers**	**Food retail owners**	**Total**
High cost of food ingredients due toInflation	8(80)	10(100)	9(90)	10(100)	**37(92)**
High rate of VAT and service tax	6(60)	8(80)	8(80)	8(80)	**30(75**
Non availability of trained chefs and bearers	**7(70)**	**8(80)**	**3(30)**	**7(70)**	**25(62)**
Lack of adequate space in prime areas for outlet	2(20)	9(90)	3(30)	0(00)	**14(35)**
Overcrowding and pressure during peak hours	8(80)	10(100)	6(60)	7(70)	**31(77)**
Overcrowding and competition in food business	10(100)	10(100)	10(100)	10(100)	**40(100)**
Competition from MNCs	2(05)	9(90)	3(30)	8(80)	**22(55)**
Shortage of working capital	0(00)	4(40)	0(00)	6(60)	**10(25)**

Note: Figures in parentheses represent percentage of the total number

Source: Dhar Sangeeta,'A Study of Changing Food habits of People in Rajasthan (with Special Reference to Udaipur Region)'2015.

The analysis of responses of the professional from FPI units in the survey on 'problems generally faced in the management of food outs and restaurants' given in table 10 shows that 62 per cent of the respondents pointed out 'non availability of trained chefs and bearers' as major problem faced by the industrybesides other problems (Dhar, 2015).

Thus, while there are significant opportunities for the growth of food processing industry in India it is faced with a variety of challenges including the shortage of trained workforce and the quality of technology in use. These are critical factors impacting the competitiveness of the industry in the country.In the face of growing demand, greater awareness among people and increasing competition from the MNC brands and food retail outlets the industry will have to significantly improve the quality and price competitiveness with respect to alternatives such as ready to eat food versus homemade food, MNC food outlets versus Indian food outlets, international cuisine versus Indian cuisine etc besides addressing other challenges faced by it. The limitations faced due to skill deficit and lacks of appropriate technology have to be rectified to achieve excellence (FICCI - KPMG Report, 2014).

Suggestions

The analysis presented above clearly brings out that for maintaining the tempo of growth the industry should address the challengesidentified above. Here the major emphasis should be on meeting the skill deficit and technology gap for broadening the market, increasing penetration among the growing number of young Indian consumers and achieving excellence in food production.

Skill development

Skill development can be viewed as an instrument to improve the effectiveness and contribution of labor to overall production. It is an important ingredient to push the production possibility frontier outward and to take growth rate of the economy to a higher trajectory. It could also be seen as an instrument to empower individuals and improve social acceptance or value. Skill development is important for stimulating a sustainable development process and facilitating transition from an informal to formal economy. It is also essential to address the opportunities and challenges to meet new demands of changing economies and new technologies in the context of globalization.

It was observed by the professionals from FPI units during survey that the diplomas and certificates with which students graduate are usually out of sync with the needs of the industry. The industry finds it difficult to recruit adequate skilled workforce and is forced to undertake

large training programs (Dhar, 2015). The shortage of skilled workforce results in loss of productivity while training programs imply higher labour costs. The skill shortage in food production industry has arisen mainly due to faster growth of industry and consequent mismatch between the demand for specific skills and availability of trained workforce.

The contemporary focus on skill development in India as such is derived from the changing demographic profiles of the country vis-à-vis China, Western Europe, and North America. Besidesthere is a huge untapped domestic market opportunity arising from the demographic shift, increase in income, urbanisation and proportion of urban working women. The challenge is magnified with increasing migration of workforce from agriculture to manufacturing and services. Bridging this gap through skill development initiatives could make India the global hub for skilled human resource. Among the developing countries of the world, India has the highest potential to meet the skill gap with its large, young, English speaking population. By skilling young person India can not only fulfill its own requirements but can also cater to the requirement from other countries.

In the context of food processing industry the objective of skill development therefore should be to create a workforce empowered with continuously upgraded skills, knowledge and internationally recognized qualifications to ensure competitiveness in dynamic global market, changing technologies and labour market demands. The initiatives suggested in this respect are:

1. **Training arrangement:** The capacity of the existing training infrastructure in public and private training institutions should be upgraded and strengthened and put to optimum use. The ITIs in various clusters across the country should be modernized and upgraded to upgrade the skills of new entrants and existing human resource in employment. The MNCs in food industry should be engaged in developing skill solutions for new technologies and methods being leaders in industry. The government and the industry should pool their resources and take appropriate measures to address the skill gap.The government should allocate budget for human resource development for enhancing and up-gradation of the skills and implementation of schemes of skill development, whileindustry should employ the candidates passing out after training.
2. **Government and industry support:** India is a large geographical territory with difficult terrain and varying socio economic conditions.This makes implementation of standardized skill

training by institutions a big challenge for government alone. The food processing industry should partner with food technology and training institutes for the up-gradation of skills of their employees.

3. **Fair labour market:**For the development of efficient and fair labor markets in organized and unorganized sector both the Industrial Disputes Act, 1947 and the Contract Labor (Regulation and Abolition) Act, 1970 should be amended. The social security schemes should cover workers in organized and unorganized sector both. Conditions of service for contract /casual workers should be improved. Competencies of the labor administration should be strengthened for effective enforcement of labor laws and regulations.

4. **Food safety and quality assurance:**Adoption of food safety and quality assurance mechanisms such as Total Quality Management (TQM) including ISO 9000, ISO 22000, Hazard Analysis and Critical Control Points (HACCP), Good Manufacturing Practices (GMP) and Good Hygienic Practices (GHP) by food processing industry are necessary for adherence to quality and hygiene norms, protect consumer health, prepare the industry to face global competition, enhance product acceptance by overseas buyers and keep the industry technologically abreast of international best practices.Further the product range offered by industry should be strengthened to take care of the food needs of people from different economic, social and demographic groups. These requirements should form part of skill training of workers in the industry.

Technology Up-gradation

The food processing plants in India continue to use traditional technology resulting in low efficiency realization and increased operational cost in processing. Moreover most of the plants are small in scale and have limited ability to undertake product development and technology improvement initiatives by themselves. Many enterprises experience difficulty in coping with rapid market changes owing to lack of access to new technology and development of new products. The FICCI survey (2010) identified the ‘processing plants with cost effective technologies and**c**ost effective food machinery’ and ‘packaging technologies’ as major challenges receiving weighted average response of 16.59 per cent and 13.19 per cent respectively. To meet the challenge of technology gap the following initiatives are suggested:

1. **Institutional support by State:**Theinstitutions including the IITs should provide technology support to the food processing units for identification, acquisition, installation and

adoption of new technologies for their requirements. Awareness campaigns should be launched and a major modernization drive should be initiated among the entrepreneurs in food processing industry for this purpose.

2. **Access to finance:** Access to adequate and timely finance is critical for the acquisition of new technology for industry. Banks and financial institutions should devise special schemes to provide funds for up-gradation of technology in food processing industry. In case the machinery and equipment required is not available in the country the food processing enterprises should be allowed to import the machinery from abroad.

Conclusion

The food processing industry is one of the fastest growing industries in India. However, the industry is struggling with issues of quality of produce, low productivity, obsolete technology and lack of skilled workforce, resulting in higher costs and lower profitability and value addition. With the entry of MNC brands and food retail outlets the challenge for the industry has become more intense threatening the existence of Indian enterprises and Indian cuisines. The challenges of competition, quality of product, cost and profitability that the industry faced are due to skill shortage and poor quality of technology in use to a large extent. The government and the industry are concerned about these problems and some initiatives have been taken by the government and the industry. However, it is suggested that there should be a comprehensive arrangement for training and development of skills among the existing and new workforce entering the industry. A network of quality training institutions should be developed and the training arrangements should be upgraded. The technology in use should be also upgraded. Import of technology should be allowed and funding support should be provided to the entrepreneurs.

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