

THE FOOD PROCESSING INDUSTRY IN INDIA: CHALLENGES AND PROSPECTS

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Abstract

Food processing industry is of mammoth significance for India's development because it links two pillars of the economy, industry and agriculture. This industry needs agricultural products for further value addition. Promoting food processing is a key to enhance farm incomes in India, as it raises the demand for agricultural produce. Government's initiative to make India Global Food Factory and Global Food Market brings immense opportunities for food processing sector. India is a leading producer of many agricultural commodities in the world; however, its share in the global food trade is meager 1.5 percent. Processing level of agro commodities is very low compared to other countries leading to high wastage of perishables. Though India has a strong raw material base, it has been unable to tap the real potential for processing because of certain challenges that hinders the growth of this sector. These challenges need to be addressed to take this sector to the next level. Increasing the level of processing of perishable products will help to reduce the level of wastage, generating employment and fetching remunerative prices for farmers and helping in achieving Government's vision to double farmer's income by 2022.

This paper attempts to study the current status and trends in food processing industry, examines the support initiative taken by government to promote the industry, identifies and discusses the challenges hindering the growth of the industry and suggests strategies to overcome the challenges. In this paper relevant data from secondary sources has been examined from financial year 2010-11 to 2016-17 to look into the performance issues related to food processing sector. Its findings will be useful to food processing sectors, policy makers and research scholars.

Key words: Food processing Industry, India, challenges, prospects, strategies.

INTRODUCTION

Promoting food processing is seen as a way to enhance farm incomes in India as it raises the demand for agricultural products for further value addition (Ghosh,2014). Value addition to food has assumed critical importance in the last decade due to socio-economic and industrial factors. Preservation and processing of food products has a prolonged history in human civilization. Organized food cultivation is believed to have taken place 10,000 to 15,000 years ago. By the middle of the nineteenth century, common agro processing industries included hand pounding units for rice, water power driven flour mills, bullock driven oil ghanies, bullock operated sugar cane crushers, paper making units, spinning wheels and handloom units for weaving. Large scale commercial food processing and retailing originated in Western Europe and the United States and the two regions today account for 35 per cent of the world's largest food manufacturing firms (Study by MC Kinsey and Company1995; Mole, 2018). The growth of food processing was slow up to the early seventies, but picked up subsequently, the eighties have seen a phenomenal expansion in the food processing industry in India, attributed mainly to the technological revolution in processing and packaging. A new range of products have come in to the market, easy to handle and having long shelf life (Mole, 2018). Nineties witnessed economic liberalization, opening up new opportunities for diversification in food processing sector. However it is agreed that such diversification is not a simple affair unless the infrastructure, facilities and marketing systems are transformed (Ghosh, 2014). In twenties the move started from primary processing to secondary and high value added tertiary processing. Currently, Indian processed foods sector is estimated to be worth about \$67 billion and gives employment to about 480 lakh Indians (130 lakh directly and 350 lakh indirectly). Talking of job creation, a joint report by the National Skill Development Corporation (NSDC) and KPMG titled 'Human Resources and Skill Requirements in the Food Processing sector states, "In the last five years, the growth of the Indian food processing sector has been faster than agricultural growth. This growth is driven by organized retail, changing consumer preferences and favourable government policies." FICCI, 2017 reports that by 2022, the Indian food processing industry is expected to generate about 44 lack additional employment opportunities. The Indian processed food industry accounts for 32% of the country's total 13% of India's exports and 6% of total industrial investment. The industry is estimated to grow at an annual average rate of 104%, touching \$482 billion by 2020. Therefore companies like Patanjali, ITC, Dabur, etc., are busy diversifying their business into processed food. Importance of this sector is significant and it deserves a priority treatment by government. Accordingly this sector has been made part of ambitious 'Make in India' initiative.

Global Scenario

As per research conducted by Insights (2014) Food processing is one of the largest global sectors at \$7 trillion annual production. According to NSDC's report on food processing the Global Processed Food Industry is valued at US \$ 3.2 trillion and accounts for over 3/4th of global food sales. Despite the large size of the industry, only 6% of the processed food is traded the world over as compared to bulk agricultural commodities where 16% of produce is traded. The USA is the single largest consumer of processed food and accounts for 31% of the global sales. This is because as countries develop, high quality and value added processed food is preferred over staple food.

India is agriculture dominant country and second largest producer of food. Indian food processing industry **ranked fifth in terms of production, consumption, export and expected growth** (Singh, 2012; Hussain & Yadav, 2016). India is the largest producer of milk, fruits, pulses, cashew nuts, coconuts and tea in world and accounts for 10% of the world fruit production. As per Nuffoods Spectrum report – 2016 about 35% of the fruits and vegetables are wasted annually due to poor storage facilities, amounting to a revenue loss of Rs 500 billion. Also, 80% of the vegetables rot due to high water content and lack of processing facilities, resulting in a revenue loss of Rs 125 billion. At global level India's share of processed food is very low at about 2% (Cygnus Research, 2007; Ghosh, 2014). In contrast, countries like the USA (65%), China (23%) and Philippines (78%) are far ahead of India in reducing wastage and enhancing the value addition and shelf life of farm products. This is an alarming signal for India as large volume of the agricultural produce is wasted.

Though India has a strong raw material base, it has been unable to tap the real potential for processing because of certain challenges that hinders the growth of this sector. These challenges need to be addressed to take this sector to the next level. Increasing the level of processing of perishable products will help to reduce the level of wastage, generating employment and fetching remunerative prices for farmers and helping in achieving Government's vision to double farmer's income by 2022.

OBJECTIVES OF THE STUDY

1. To study the current status and trends in food processing industry.
2. To examine the support initiative taken by government to promote the industry,
3. To identify and discuss the challenges hindering the growth of the industry and to suggest strategies to overcome the challenges to take this industry to the next level.

RESEARCH METHODOLOGY

The methodology followed is review of relevant literature and analysis of secondary data available on food processing sector. The data sources are from National Sample Survey Organization (NSSO), National Skill Development Corporation (NSDC) report on Human Resource and Skill Requirements in the Food Processing Sector, Annual reports of Ministry of Food Processing Industry, KPMG study, IBEF report on food processing, D&B report, APEDA report, CYGNUS Research, Research conducted by Grant Thornton on behalf of ASSOCHAM, FICCI survey on challenges in Food Processing Sector (2010) and articles published in news papers and journals. The relevant data from financial year 2010-11 to 2016-17 have been examined in this paper.

Structure and composition of Indian food processing Industry:

The processing through which raw food materials are changed into more readily usable form is called food processing. The food processing industry includes companies that transform livestock and agricultural products into products used for intermediate or final consumption through techniques like grading, sorting, packaging etc. (Singh et al. 2012; Dharni & Sharma, 2008). According to Food and Agricultural Organization (FAO), processed food can be of three types: primary, secondary and tertiary.

- Primary processing involves basic cleaning, grading and packaging of raw agricultural produce that is fit for human consumption, for example packed atta, packed milk, pulses, spices etc.
- Secondary and tertiary processing involves higher level of processing where new or modified products are manufactured, for example juices, pickles, dairy products, confectionary, bakery items, chocolates etc.

The Ministry of Food Processing, Government of India indicates the following six segments within the Food Processing industry.

Table: 1 Segments of Food Processing Industry and Products Produced in India.

Sectors	Products
Dairy	Whole milk powder, skimmed milk powder, condensed milk, ice cream, Butter and ghee, cheese
Fruits & Vegetables	Beverages, juices, concentrates, pulps, slices, frozen & dehydrated products, potato wafers/chips, etc
Grains & Cereals	Flour, bakeries, starch glucose, cornflakes, malted foods, vermicelli, beer and malt extracts, grain based alcohol
Fisheries	Frozen canned products mainly in fresh form
Meat & Poultry	Frozen and packed –mainly in fresh form egg powder
Consumer Foods	Snack food, namkeens, biscuits, ready to eat food, alcoholic and non-

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alcoholic beverages

Source: Ministry of food processing India, Annual report, 2017

The food processing sector in India has dualistic structure, organized and unorganized.

The unorganized segment dominated in numbers (about 25,00,000 in 2015-16) of small enterprises and workers, but the organized segment (about 40,000) dominated in terms of value of the output and investment (International conference on food processing , August 2018). About 42% of the output comes from the unorganized sector, 25% from the organized sector and the rest from small scale players. Though the unorganized segment varies across categories but approximately 75 percent of the market is still in this segment. The organized sector is relatively bigger in the secondary processing segment than the primary processing segment. Primary food processing is major in unorganized sector with highly fragmented structure that includes hundreds of thousands of rice mills and hullers, flour mills and oil seeds mills, traditional bakeries, fruits, vegetable and spice processing units (Singh et al., 2012). In organized sector the most common type of food processing units are sugar mills, non alcoholic and aerated drink units, meat and fish processing units and fruits and vegetable processing units.

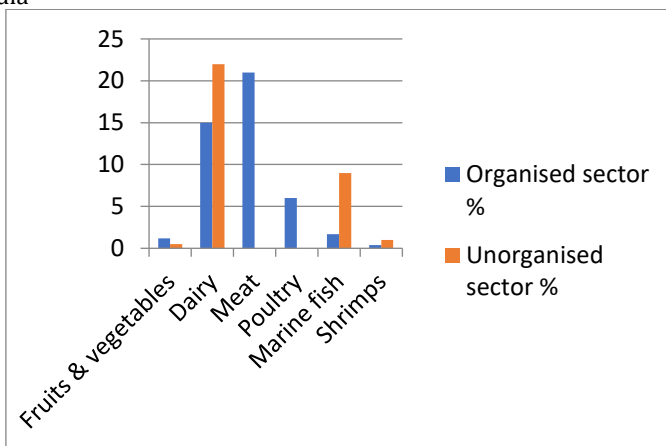
Production status and level of food processing

As per research report of Insight (2014) India is **largest producer** of Pulses, Mangoes, Banana, Milk, ginger, Buffalo meat and **2nd largest producer** of rice, wheat, potato, garlic, cashew nut, groundnut, dry onion, green peas, pumpkin, gourds, cauliflowers, sugarcane, and tea in the world. India produce 17 per cent of the global total of vegetables and 14 per cent in the case of fruits. About 40 percent of the world’s mangoes and 30 per cent of the world’s bananas and papayas are produced in India. Further, India has many unique things to offer such as Alphonso Mangoes and wheat of Madhya Pradesh is uniquely protein rich.

The Extent of processing of agricultural product is still at infant stage in India. The processing level in non perishable products such as cereal and pulses are more than 90%, in which major proportion is primarily processed i.e. graded, sorted and milled (Cygnus Research, 2007). However, only 7 percent of the total Indian perishable produce is processed, which is significantly lower compared to international average (ASSOCHAM, 2017).

Table 2 : Level of Perishable Food Processing in India

Item	Organised sector %	Unorganised sector %	Total
Fruits & vegetables	1.2	0.5	1.7
Dairy	15.0	22.0	37.0
Meat	21.0	-	21.0
Poultry	6.0	-	6.0
Marine fish	1.7	9.0	10.7
Shrimps	0.4	1.0	1.4



Source: APEDA, MOFPI annual report (2017)

Table 2 indicates that the level of processing of different items vary, 1.7% of total fruits and vegetable production to 37% of total dairy products in India. Processing of fruits and vegetables is significantly low. Processing level is significantly higher in unorganized sector in products like dairy (22%), marine fisheries (9%) and shrimps (1%). The current low level of processing can be accredited to a combination of demand supply factors. On the demand side, availability of a variety of fresh produce and leaning towards freshly cooked food has resulted into compact demand for processed fruits and vegetables. On the supply side, fragmented supply chain results in significant wastage and spoilage, which reduce the availability of quality raw material for processing.

Losses in Supply Chain

In India the supply chain of raw material from field/market to processing plants is highly fragmented, weak and inefficient, which results into significant post harvest losses. CIPHET, Ludhiana conducted a nation- wide study on assessment of post harvest losses for 46 agricultural produces in 106 randomly selected companies. The study was conducted in 2010 and the same study was repeated in 2015 for the same category and same districts. The comparative results of both the studies are presented in following table:

Table 3: Losses in Supply Chain

crops	Cumulative wastage (percent)	
	As per report 2010 Base - 2009 wholesale price	As per report 2015 Base- 2010 wholesale price
Cereals	3.9-6.0	4.65-5.99

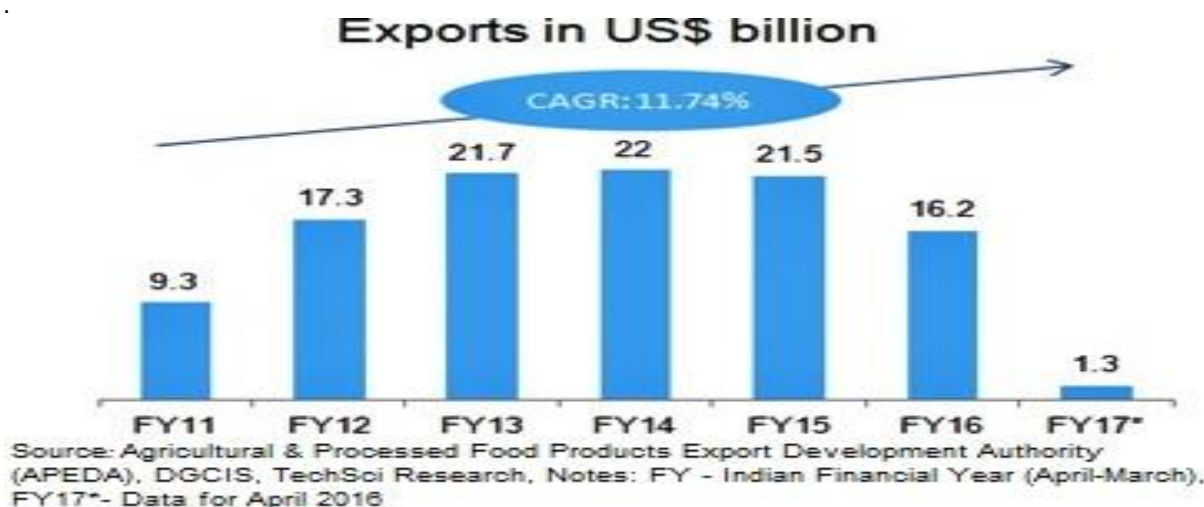
Pulses	4.3-6.1	6.36-8.41
Oil seeds	2.8-10.1	3.08-9.96
Fruits & Vegetables	1.8-18.0	4.58-15.88
Milk	0.8	0.92
Fisheries(Inland)	6.9	5.23
Fisheries(marine)	2.9	10.52
Meat	2.3	2.71
Poultry	3.7	6.74

Source: CIPHET study 2010 & 2015 reports; MOFPI Annual Report, 2017

Comparative study of the report indicates that there is a considerable increase in wastage of Fisheries(marine) from 2.9 percent to 10.52 percent and in Poultry also losses almost doubles from 3.7 percent to 6.74 percent. Moreover significant wastage is in produce like fruits and vegetables, pulses, cereals and fisheries. While government statistics underline the faster growth of the processed foods sector (8.4 %) against agriculture (3.3 %) and manufacturing sectors (6.6 %), this growth is as yet unable to counter the annual tentative perishables loss, which ranges from 4% to 18% (by value) across various food categories. (Pradhan, 2017). According to a recent report titled 'Food & Agriculture Outlook' from consulting firm Technopak, "The annual tentative perishables loss is in the range of \$7 billion to \$9 billion. This wastage has attained a threshold at which a population of about 175 million can be fed annually." The high wastage level clearly reveals that the present state of our infrastructure is incapable of coping with crop surpluses (Pradhan, 2017).

Export Scenario:

Food processing Industry in India is primarily export oriented (Lagzi & Thimmarayappa, 2012). According to IBEF report 2017, all agricultural produce when exported undergo an element of processing. Hence, all exported edible agricultural commodities are included in export data. India is among the 15 leading exporters of agricultural products in the world. Total agricultural exports from India grew at a CAGR of 16.45 percent over FY10-18 to reach US\$ 38.21 billion in FY18. The contribution of agriculture to total export was 12.26 percent in FY17. Tea exports from India reached a 36 year high of 240.68 million kg in FY 2017.

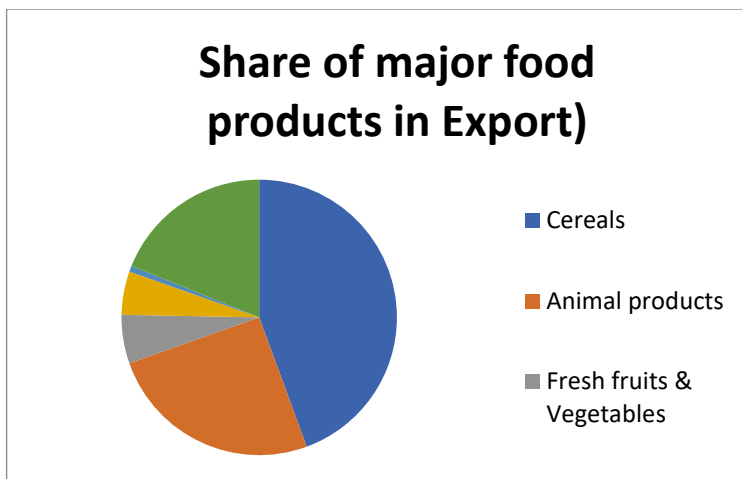


During FY11-16, India's exports of processed food and related products (inclusive of animal products) grew at a CAGR of 11.74 per cent, reaching US\$ 16.2 billion (IBEF, 2017). Main export destinations for food products have been the Middle East and Southeast Asia. In FY17 India's exports stood at US\$ 1.3 billion. The share of food processing exports in total export was around 12% in last few years. (ASSOCHAM 2017). The share of major food processing segments is shown in following table:

Table 4: Share of major food products in Export

Product	Share in food processing export(percent)
Cereals	44.4

Animal products	25.2
Fresh fruits & Vegetables	5.7
Processed fruits &Vegetables	5.1
Floriculture	0.7
Other processed foods	18.9

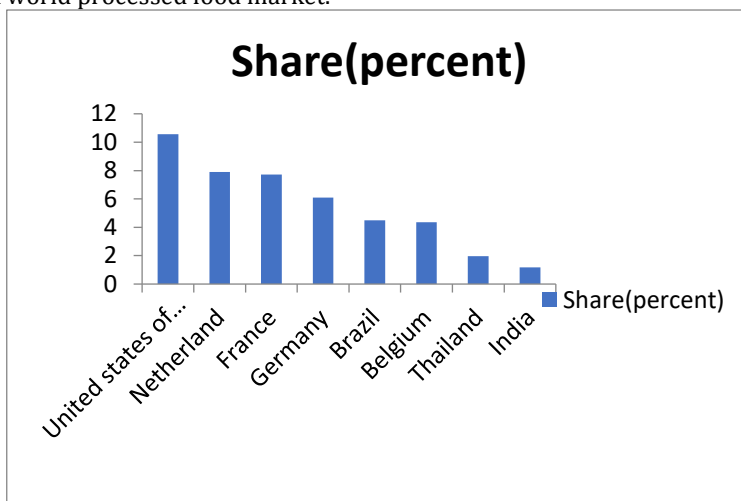


Source: (APEDA, 2015)

Above table indicates that the share of processed fruits & vegetable products in exports is low compared to other food products because major Indian food exports have been marine products, basmati and non basmati rice, animal products and other processed food (Sidhu ,2005)

Table 5 : Export share of various countries in world processed food market.

Country	Share(percent)
United states of America	10.57
Netherland	7.91
France	7.72
Germany	6.09
Brazil	4.50
Belgium	4.35
Thailand	1.97
India	1.17



Source : (Rais et al., 2013)

Table 5 indicates that USA occupies major share in processed food export, while India's share is negligible 1.17 percent. India's share in processed food export in world trade has remained about 1.5% or Rs. 16 billion (Bhuyan, 2010). The competitiveness of Indian food items are on decreasing trend (Rais et al., 2013)

The following table indicates the export volume of Food Processing Sector:

Table 6 : Export volume of Food Processing Sector

Year(Apr-March)	(US\$ Million)							AAGR
	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017(Apr-Sept)	
FPI-Exports	20277.60	31459.58	35898.06	38051.43	36171.92	29672.37	14483.06	-0.70
Growth(%)	37.3%	55.1%	14.11%	6.00%	-4.94%	-17.97%		

Average Annual Growth Rate for 6 years ending 2015-16; Source : DGCI&S

Table 6 indicates recent data of processed food export in India. Maximum increase in export was seen around 18 percent during the year 2011-12. While last four years data from 2012-13 to 2015-16 shows declining trend in export growth. According to D&B report (The Economic Times, April-2018) exports of FPI related commodities declined by 18% (year - on - year) to \$ 29.7 billion during FY16, which was in line with decline in countries over all export.

Studies have also shown that rigid food safety and health standards act as a major non-tariff barrier to exports from developing countries such as India (Das, 2008 ; Goyal et al. 2017)

Foreign Direct Investment in Food processing Sector:

Foreign funding has been approved in Indian food processing industry since 1991. In 2016, union budget allowed 100 per cent FDI through approval route for retail trading, including through e-commerce, in respect of food products manufactured and produced in India, except for items reserved for Micro and Small Enterprises (MSEs) subject to applicable laws. The government has approved American e-commerce Amazon's proposed USD 500 million investment in retailing of food products in India. FDI inflow into the sector stood at USD 727.22 million during FY 2016-17. The food processing sector received FDI worth about \$6.55 billion between April 1, 2000 and September 30, 2015 (DIPP data). The Confederation of Indian Industry (CII) estimates that the Indian processed foods sector has the potential to attract as much as \$33 billion of FDI over the next 10 years. This will boost infrastructure and strengthen the local supply chain in the agriculture sector, it will also benefit farmers and MSMEs across the country. However the laws should be properly implemented so that small retailers are safe guarded. The policy should work in line of "competitiveness with inclusiveness" (Rais et al., 2013). FDI inflows in Food Processing sector in the country from FY 2010-11 to 2015-16 are as under:

Table 7: Foreign Direct Investment (FDI) inflows in Food Processing sector in the country.

S. No.	Year (April- March)	FDI (Rs. Crore)	FDI (US \$ Million)
1	2010-11	858.03	188.67
2	2011-12	826.16	170.21
3	2012-13	2193.65	401.46
4	2013-14	25,106.78	3,982.88
5	2014-15	3159.36	515.86
6	2015-16(Apr-Dec)	2500.85	384.59

(source : MOFPI annual report 2016 & 2017)

Table 7 indicates fluctuating trend of FDI inflows. From financial year 2010-14 FDI inflows shows an upward trend and it reaches at its highest in 2013-14. However, the last two years from 2014-16 shows downward trend of FDI inflows.

Value chain in food processing industry:

	Inputs	Production	Procurement & Storage	Processing	Retailing
Key activities	Seed, fertilizers and farm equipments	Farmers, cooperative and private companies	warehouse, cold storage and silos	Grading, sorting, milking and packing	Retail shops, malls, cash and carry
International Major players	NSDL, Cargil and Advantage India Ltd.	Farmers, Amul, ITC, Pepsi, HUL	Food Corporation of India, NCMSL, Arshiya International	ITC Ltd, Cargil, Adani enterprises, Olam	General Merchant Stores, Bharti Walmart, Future Retail, Aditya Birla Ltd.

Source:(ASSOCHAM 2017)

Agri-food supply chain is very complex as it involves perishable goods and a number of small stakeholders and intermediaries. In India, infrastructure that connects these small stakeholders such as the farmers, wholesalers, processors and manufacturers, retailers, etc., is very weak. The supply chain is highly fragmented which hinders common planning and ability to make necessary adjustments in the system (Aggarwal & Srivastava, 2016).

The value chain in food processing industry starts from farm inputs and ends at food retail and food service.

- 1) The first stage of value chain includes delivery of agro-inputs, i.e. seeds, agro-chemicals, fertilizers etc. to the farmers.
- 2) The second stage includes production of crop, and insurance of crop against any sort of natural or man-made calamity. Procurement of agro-produce for value addition is part of this stage.
- 3) The third stage includes trade and distribution, which involves storage and trading of produce, where cold chain facilities have prime significance. The absence of proper cold storage facilities leads to wastage of produce, which amounts as high as 35%. This problem has been marked as number 1 challenge in food processing industry by the entrepreneurs in a survey conducted by FICCI (2010). The trade and distribution

facilities include transportation for export, and shifting of produce from one place to another and trading of sourced agro-produce.

4) The fourth stage includes processing part which involves primary, secondary and tertiary processing.

5) The fifth stage includes wholesale trading of value-added produce, export of produce and branding of products. The entry of big brands in food industry has created a tough competition for small players. The presence of MNC'S in the market, do not allow local players to grow, as they lack that extensive branding and publicity.

6) The final stage includes food retail and food services, implies retailing of value-added foods by means of hotels, restaurants, eat-outs and retail stores.

Impetus for the growth of food processing sector:

- Growth of organized food retailing has made the Indian market more attractive for global players; with a large agricultural resource base, abundant livestock and cost competitiveness, India is fast emerging as a sourcing hub of processed foods.
- The rising youth population is likely to increase India's overall food consumption, with a population size of 1.22 billion of which 604 million were under the age of 24 in 2011. (GOI, NSSO 2011)
- Rising income level of growing middle class and increased purchasing power.
- Availability and increasing demand of Indian nutraceuticals (health food).
- One-third of the population will be living in urban areas by 2020.
- Changing food habits towards branded, packaged and ready to eat foods because of increase in number of nuclear families and increase in number of working women.
- Large distinct consumer segments support customized offerings/new categories and brands within each segment. Positive economic & cultural transformation in attitudes & lifestyles, consumers are experimenting with different cuisines, tastes and new brands.
- There is an increase in awareness and concern for wellness and health, high protein, low fat, wholegrain, traditional foods and organic food.
- Government policy support under Make in India initiatives.

Government's initiative to support this Industry:

Under the Make in India initiative, to promote growth of Food Processing sector, Govt. has taken certain measures to create strong infrastructure, to reduce food wastage and to promote Ease of Doing Business (EODB).

- Government has allocated USD 923 Million for the upcoming 'Scheme For Agro-Marine produce Processing and Development of Agro-clusters' (SAMPADA). This Scheme will help in integrating food processing units and food trade with the farmers creating huge opportunities for employment of increasing income of the farmers.
- The FDI in trading and e-commerce of food products is allowed up to 100% through government approval route. Food business giants such as Kelloggs, Ferrero and BSA International are all set to expand their footprint in India because of increased government support. The move will open new avenues of growth in food retailing and boost the income of the farmers. India's geographical proximity to food importing regions such as Singapore, Middle East, Thailand, Europe, Korea and Malaysia will further boost exports in the future.
- Mega Food Park follows a cluster based approach and ensures backward and forward linkages. The Government has sanctioned the setting up of 42 Mega Food Parks during the 11th and 12th Five Year Plan in four phases. Out of 21 projects accorded final approval, 4 projects are operational and 2 more projects are likely to be completed. Each MFP is expected to benefit 6000 farmers/producers directly and 25,000-30,000 farmers indirectly. An amount of Rs. 458.08 crores has been released under the scheme up to 31.12.2014. ASSOCHAM report (2017) indicates that this model got partial success because it is a developer based model and doesn't encourage users to come in the food park. This infrastructure doesn't match with demand- supply requirement. Mega food park's success depends on location, connectivity, access, etc
- The Electronic National Agriculture Market (E-NAM) has integrated 417 markets from 13 states for efficient sale and distribution of food products and raw materials.
- Government has also implemented the Ease Of Doing Business (EODB) measures such as the launch of a single window clearance for customs, single window investor facilitation cell, simplification of application forms, along with online system of food licensing and registration are landmark moves (MOFPI report, 2017).

CHALLENGES IN INDIAN FOOD PROCESSING SECTOR

The challenges for the food conservation, distribution and processing sectors are diverse and demanding, which need to be addressed to leverage the growth of agriculture and food processing sector. (FICCI 2010) and KPMG have conducted a pan India survey across the entire value chain to identify the challenges hampering the

growth of food processing sector. Following are the major challenges and strategies are suggested to overcome the challenges.

1 Infrastructure bottlenecks:

Inadequate infrastructure for storage, sorting, grading and post harvest management, road connectivity, sea ports, airports, information and marketing linkage, electricity and cold chain are the biggest constraints for Indian food processing Industry. Cold storage facility play a crucial role for perishables such as fruits, vegetables milk and milk products.(Dharni & Sharma, 2008). The cold chain capacity caters to 10 percent of the produce and within that facilities more than 80 percent are utilized for only potato storage (Singh et al. 2012)

Strategy: India has merely 21.7 Million ton cold storage facilities where as it need at least 9-10 Million Ton more. It requires supportive investment from private sector (KPMG, 2009). Notably, in the Budget 2016-17, in a bid to encourage use of refrigerated containers in the supply chain, the basic Customs duty and Excise duty on it was reduced from 10% to 5% and 12.5% to 6% respectively.

2 Absence of comprehensive national level policy on food processing sector:

According to Piruz Khambatta, Chairman & Managing Director, Rasna International, "There are so many Acts that it will puzzle a new entrepreneur in food business" (Pradhan, 2017).

Multiple laws at state and centre level are applicable to food processing sector rather than a single comprehensive policy. Historically they were introduced to complement and supplement each other in achieving total food sufficiency, safety and quality. However, this approach led to inconsistency in the food sector regulatory scenario (Rais et al., 2013).

Strategy: Need for comprehensive national level policy that removes the hassles of multiple departments and multiple laws. MOFPI is planning to bring National Food Processing Policy which shall focus on building India's NATIONAL FOOD GRID and NATIONAL COLD CHAIN GRID and create Retail Markets every nook and corner of the country (said by MOFPI minister Badal , Economic Times, 2017).

3 Problem in implementation of Food safety Laws:

Indian Government consolidated eight laws and came up with the Food safety and Standards Act, 2006 (FSSA). However FICCI survey has identified implementation hindrance in food safety laws. It has been observed that it is extremely difficult to implement all the global food safety measures especially for small and medium exporters of processed and fresh food, because of high cost incurred in procuring international certifications. Due to this, export from India becomes dearer and international business opportunities are lost (Rajneesh et al.,2014).

Strategy: To get smooth implementation of the Act, FSSAI needs to maintain total transparency in framing rules, participation of other stakeholders at earlier stages of rule framing and revision is essential for setting of sound scientific standards

4 Lack of adequate trained human resource:

According to FICCI survey on skill demand in food processing industry, it has been observed that majority 58% of organizations were dissatisfied with the skills of the available trained manpower. Moreover 72 % organizations were dissatisfied employees ability to use appropriate modern tools, equipments and technologies required to do their jobs. Strong deficiencies in technical knowhow and support were identified at each level of value chain.

Strategy: This skill gap can be filled up by making technology more accessible to workers and by promoting institutions and courses that provide managerial, technical, production, warehousing, packaging and distribution training.

5 Supply chain hindrances:

Supply chain in food processing industry is quite long and fragmented, which leads to high wastage and high cost. Moreover, Seasonal, variable and perishable nature of agricultural produce leads to uncertainty in projection.

Strategy: Contract farming helps certainty of supply, reduces cost of raw material and provides high remuneration to farmers. Terminal markets also help procuring the right price.

6 Access to credit:

Food processing units are highly capital intensive. The lack of credit access to farmers limits the working capital available, restricting investments in technology and high yielding inputs.

Strategy: Promoting equity investment in SME's that operate along the food value chain and providing interest subsidy to agro industrial units.

7 Lack of Research & Development:

Indian food processing industry is dominated by small and medium scale units. They can't invest in R&D. So, it becomes governments responsibility to conduct R&D. Indian R&D institutions have not been able to develop innovative products, processes and machinery as per global standard. The key reasons for this are separation of academics from applied research, inadequate industry linkages, low commercial orientation and lack of collaborative efforts with global counterparts.

Strategy: It requires holistic research & development approach involving all the stakeholders.

According to Piruz Khambhata, "Some recent positive developments are institutions like NIFTEM, which in collaboration with the industry is focusing on research and development and skill development" (Pradhan, 2017).

8 Low adherence to quality standards:

Indian processed food are often rejected in US/EU markets for not meeting Codex and HACCP quality standards.

Strategy: Exercising proper control for maintaining global food quality standards.

9. Packaging cost:

The share of packaging cost in consumer price is very high in the case of processed food items in India. For potato chips and fruit juice, the cost is as high as 20%. Further, a large share of food is sold in small packs, which further lead to escalation of packaging costs as a proportion of the total cost. (Dharni & Sharma, 2008). Moreover most of the packaging material is imported from China.

Strategy: Encourage the sector by extending the tax breaks and concessions to players for setting up packaging industry in India (KPMG, 2009).

10 Taxation issues:

In most of the developed countries the standard practice to tax food products is one or two rates. In places like Dubai or Saudi Arabia, there are no taxes on food products. Even in Singapore, tax on food products is just 4%. While Indian food products are covered by zero, 5%, 12%, 18% and 28% GST rates. Policy maker's logic behind this decision may be to lower GST for basic items bought by poor consumers, however, this added complexities in price determination of processed food.

For instance many preserved vegetables (such as tomatoes, mushrooms and nuts) are in the 18% bracket and mixed condiments and seasonings attract 28%. The rate for processed packed food products such as instant mixes for idlis (rice cakes), dhoklas (a batter snack), soups, chilli sauce, garlic ginger mixes and more is 18%. Moreover, different varieties of milk like double-toned milk, toned milk, standardized milk and full cream milk are also in different tax brackets ranging from 0% to 18%. This requires proper clarification. According to the managing director of Rasna Mr. Khambatta , " Higher taxing will hamper the growth of food processing industry, leading to lowering down agricultural growth (Verma, Just food 2017).

Strategy: To Work on rationalizing and harmonizing tax and food safety classifications within India could remove the potential for such variety in GST rates

11 Raw material constraints:

Raw material used by food processing industry is seasonal, perishable and variable. Therefore the availability of right quality of raw material at the right time and in required quantity is a major constraint for this sector.

Strategy:

Precision farming will improve yield and savings through optimal use of water, fertilizers and micronutrients (Dharni & Sharma,2008). Contract farming will also help in overcoming this limitation.

FUTURE PROSPECTS

- With only 2 percent of India's total agriculture and food produce currently being processed, the country offers huge potential for growth in food processing sector.
- India provides most conducive environment to food processing given parameters and conditions like abundance of food production, abundance of manpower engaged in agriculture and low cost of processing. At the same time Government's initiative to make India Global Food Factory and Global Food Market brings immense opportunities for food processing sector (Badal, 2017)
- The investment in agriculture sector is expected to grow to around 3.2% of GDP by FY20 as against 2.8% of GDP in FY10 (D&B report,)
- In global market, there is a shift from carbohydrate staples to animal sources and natural sugar. Going by this pattern, in future, there will be an increasing demand for prepared meals, snack foods and convenience foods and further on, the demand will shift towards functional, organic and diet foods. India exporters need to follow this trend to cater the world market .
- Increasing awareness in consumers will lead to growing demand for clean labels like food free from artificial colours, flavours and preservatives.
- The GST council slashed the rate on processed foods to 12% from 18%. As a result, new players could enter categories such as pickles, sauces, ketchups and preserves (Business standard, 2017, June 14).
- India's organic food market is expected to increase by three times by 2020 (IBEF, 2017)
- The online food ordering business in India is in its nascent stage, but witnessing exponential growth. With online food delivery players like Food Panda, Zomato, Tiny Owl and Swiggy building scale through partnerships, the organized food business has a huge potential and a promising future. The online food delivery industry grew at 150 per cent year-on-year with an estimated Gross Merchandise Value (GMV) of US\$ 300 million in 2016 (IBEF, 2017).

- To boost countries export potential, large scale awareness drives and training programmes on creating more hygienic food and adhering to global standards 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) will offer several benefits. It would enable adherence to stringent quality and hygiene norms and thereby protect consumer health, prepare the industry to face global competition, enhance product acceptance by overseas buyers and keep the industry technologically at par with international practices (Rajneesh et al., 2014)

FINDINGS AND CONCLUSION

Food processing Industry in India has seen remarkable growth and changes over the past few years driven by changing trends in market, consumer behavior and Government initiatives. India's food processing industry is dominated by highly fragmented unorganized sector having small scale operation. About 42% of the output comes from the unorganized sector, 25% from the organized sector and the rest from small scale players. The extent of processing of agricultural product is still at infant stage in Indian food processing Industry. The processing level in non perishable products such as cereals and pulses are more than 90%. However, only 7 percent of the total Indian perishable produce is processed, which is significantly lower compared to countries such as US (65%), Philippines (78%) and China (23%). While government statistics underline the faster growth of the processed foods sector against agriculture or manufacturing sectors, this growth is as yet unable to counter the annual tentative perishables loss, which ranges from 4% to 18% (by value) across various food categories. Maximum increase in export of processed food was seen around 18 percent during the year 2011-12, while last four years data from 2012-13 to 2015-16 shows declining trend in export growth of processed food. From financial year 2010-14 FDI inflows show an upward trend and it reaches at its highest in 2013-14. However, the last two years from 2014-16 shows downward trend in FDI inflows. Fragmented and lengthy supply chain, inadequate infrastructure, skill gap in human resource, low adherence to quality standards, capital intensive nature of the industry and taxation issues are the major challenges faced by this sector. Addressing these challenges will take this industry at par with global counterpart. The Government of India's focus towards food processing industry as key to double farmer's income is expected to ensure policy support and will promote the growth of this industry.

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