

**FOOD PROCESSING INDUSTRIES IN INDIA:
A STUDY FOR INCREASING RURAL INCOME**

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Abstract

Globally all major economies have advanced food processing ecosystems with high levels of processing (70-80 per cent against 10 per cent in India) and correspondingly higher value added per worker in agriculture. India, despite being the leader in production of several agricultural commodities, lags behind several countries in terms of value added per worker in agriculture. India's food sector attracted \$ 4.18 Bn in foreign direct investment between April 2014-March 2020. Currently, India is processing less than 10% of its agricultural output, thus, presenting immense opportunities for increasing these processing levels and leading to investments in this sector. With agriculture and its allied sectors being the largest source of livelihoods in India, 70% of its rural households still depend primarily on agriculture for their livelihood. Thus, this sector provides a huge employment generation potential as well. With the government's focus and a favorable policy ecosystem, the food processing sector has been growing at an Average Annual Growth Rate (AAGR) of around 8.41 % between 2014-18. The sector constitutes 8.83% and 10.66% of gross value added in manufacturing and agriculture sector respectively. The Indian food industry's output is expected to reach \$ 535 Bn by 2025-26. Rising household incomes, urbanization and the growth of organized retail are currently some of the major drivers of this market. According to the latest Annual Survey of Industries (2016-17), food processing accounted for 15.95% of the total number of factories, Employment to 11.36 % of the workforce, 14.09% of the output and 16.78% of the operational factories. The Indian market is fast evolving and has seen some major changes in terms of changing consumption patterns due to urbanization, changes in the gender composition of the workforce, and growing consumption rates. The growing consumption of food is expected to reach \$ 1.2 Trn by 2025-26, owing to these factors.

Keywords: *food, processing, Industry, opportunities, development*

India exports agricultural/horticultural products and processed foods to more than 100 countries/regions with major exports to the Middle East, Southeast Asia, SAARC countries, the European Union (EU) and the US. During 2018-19, India's exports of agricultural and processed food products totalled \$ 38.49 Bn⁹. Currently, India's total agricultural export basket is a little over 2%¹¹ of the world agricultural trade. Additionally, agricultural exports contribute about 2%¹² to India's Gross Domestic Product (GDP).

India has many key advantages in the sector and thus, provides opportunities for ramping up production and supply. Presently, India's share of high value and value-added agricultural produce within the export basket stands at less than 15%, however, India has a strategic geographical

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location which gives it a unique advantage when it comes to exports. The country has convenient connectivity to Europe, Middle East and Africa from the western coast, and Japan, Singapore, Thailand, Malaysia, Korea, Australia and New Zealand from the eastern coast. Further, due to factors like lack of uniformity in quality, standardization and its inability to curtail losses across the value chain, India is not currently exporting much of its horticulture produce.

India is that the second largest food producer within the world. In spite of this the shoppers don't seem to be recouping quality food product. Around half-hour of total production gets waste because of Improper post-harvest, storage facilities, process losses, mishandling, improper packaging, and unequipped and weak cold chain infrastructure.

Agriculture is the backbone of India's employing about 43% of the total workforce in India and contributing about 17% to the Indian economy in 2019 (GVA at current prices). Agriculture and allied sectors are the largest sources of livelihood in India and more than 70% of rural households depend on agriculture as their main source of income. Majority of these farmers (82%) are small and marginal (owning less than two hectares of land).

The Food Processing sector links agriculture, manufacturing sector and final consumers. The sector is critical to increasing the farmer's income in India through value addition and reducing wastage, resulting in enhanced income for farmers in India.

As the 5th largest sector in India, Food Processing contributes about 9.5% to GVA and 13% to employment of manufacturing segment. A recently released report by KPMG in India titled Indian Food Processing Industry- Growth opportunities post the Covid-19 pandemic estimates that the sector is currently valued at USD 263 billion (2019) with a 5-year CAGR of 11%. The sector offers significant potential for increase of farmers' income in India.

The increased demand for processed food is a potential opportunity for farmers in terms of increased production, greater demand for raw material for value-added products, diversification from grain-based crops to horticulture, production of high-value process able varieties - all of which can add to farmers' income. There is a dire need for increasing and enhancing processing facilities at farm-gate level (currently very primitive), for farmers to rise higher in Food Processing value chain.

In any of the given countries, food process business is that the linkage between business and agriculture and just in case of Asian country specifically, the food process business has contributed loads within the economic development of the country. This surplus of food grains and other related items, food processing industry started to develop in the country and by 1991 new industrial policy allowed a substantial foreign investment in the food processing industry and the country soon attained a prominent rank in international fronts.

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Then in 21st century, India attained production advantage for some of the food items, like:

Milk: India is the largest producer of Milk at global level (around 180 MMT) till 2019, Fruits and Vegetables: by 2015 India was announced as second largest producer of fruits and vegetable in the world (311.7 MT) Nat, Volatiles & Essential Oils, 2021; 8(4): 15619-15628 15620 meat rearing of livestock has remained a hobby of people in the country and by 2018 India announced as the owner of largest livestock i.e. 8 MT in 2019, Poultry: On annual basis India produces around 95 billion eggs by 2018, Fish and related items: by 2018 India secured second position in the world with approximate production of 13 MMT.

The report of CII in 2019 expressed that India is process solely 100 percent of its total agricultural outputs, where the minimum process is of fruits and vegetable (2% only) and most process of milk (>35%). As way as India thinks about the common rate of growth on annual basis is around eight.41% and this is often substantiation for the event of Indian food process trade. Then from 2015 to 2019 the industry has achieved a replacement rate of growth of ten.7% and this is often expected to grow at increasing rate in near future. As way as food process trade thinks about following area unit the expansion markers until date: 16 PF of the overall industries area unit engaged in food process, Revolutionary Organization 17 November of the food process plants area unit operative, on their full potency, St Martin's Day of the overall agricultural workforce is engaged in food process trade, Total output is around 15 August 1945 as against nineteen of total agricultural input.

Key Development Segments

The production strength of the country is enormous and at present only a segment of the same is being processed, this calls for great opportunities in this field. The stature of the country as the largest producer of fruits and vegetables in the world again opens the doors for great opportunities because in the present times only 2% of the processing capacity has been unleashed, processed fruits and vegetables is one of the greatest market in the present times and India is looking forward to other structures of the same in the form of frozen foods, canned, puree, paste, snacks, pickles, juices, jams, jellies, etc. In case of marine wood processing, India is working with 20% of efficiency and if the efficiency of the same is increased then the level of exports may be increased which will be an add on in the processed food industry. Increasing demand of processed food at both the domestic and international level can improve the stature of overall food processing industry of the country. Then the poultry industry is working with the processing efficiency of 6% only and if the capacity and scale is increased then certainly demand will also rise. After vegetable and fruits, processing of dairy products is second in the list and the segment covers around 35% of the total processing capacity. Here it is

important to mention that in India per capita availability of milk is around 400 grams which is higher than the international availability of 300 grams CII, (2017). With the increase in urban population demand of related segments like flat bread, dairy products, ready to mix items, etc. is increasing and the processing industry of the country is not able to meet the demand of the same at present. Then focus of the young generation on nutritious food items is another important segment that is required to be tapped by the processed food industry. Right from organic extracts to processed sea foods, demand is increasing like anything and there is huge opportunity in this area.

Meaning of Food Processing Industries

Food processing is simply a method by which agricultural products are transformed into food products that are fit for consumption. It involves different ways of processing such as, grinding grain to make raw flour, home cooking, and industrial methods to produce convenience foods including noodles, pasta and chips. The food processing industry forms a major part of India's economy owing to the variety of food products that the country harvests and further processes for consumption. India is the largest producer of milk, bananas, mangoes, guavas, papaya, ginger, okra; second-largest producer of wheat, rice, fruits, vegetables, tea, sugarcane and cashew nuts and the third-largest producer of cereals, coconut, lettuce, chicory, nutmeg, mace, cardamom and pepper worldwide. Rising incomes and a growing demand for healthy, packaged food ensure that this industry is likely to sustain all seasons and never fear a recession. The industry also receives growing support from the government.

Market Stats

This sector is expected to generate 9 million jobs by 2024; The Indian food industry is expanding at a CAGR of 11% and the food processing sector accounts for 32% of the total food industry; India's food sector attracted US\$ 4.18 billion in foreign direct investments between April 2014 and March 2020; By 2030, Indian annual household consumption is expected to triple, making India the fifth-largest consumer in the world.

Key Growth Drivers & Trends: There is growth in the organized food retail sector and increase in urbanization; MSME's are playing a vital role in India's food processing chain through various advancements in skills and technology; The online food ordering business in India is witnessing an exponential growth; There is high demand for packaged, healthy and immunity booster snacks such as roasted nuts, popcorns, and roasted pulses; There is a shift in focus from loose to branded packaging; The government's 'Atmanirbhar Bharat' initiative places priority on this sector and offers support through various policies.

Key Players in India

International – Coca-Cola, Pepsi, Unilever, Mars, Mondelez (Kraft Foods), Kellogg's, Del Monte, Cargill, Ferrero, Nestle, Danone, McCain, Hershey and Perfetti Van Melle; National – Kissan, Amul, Godrej

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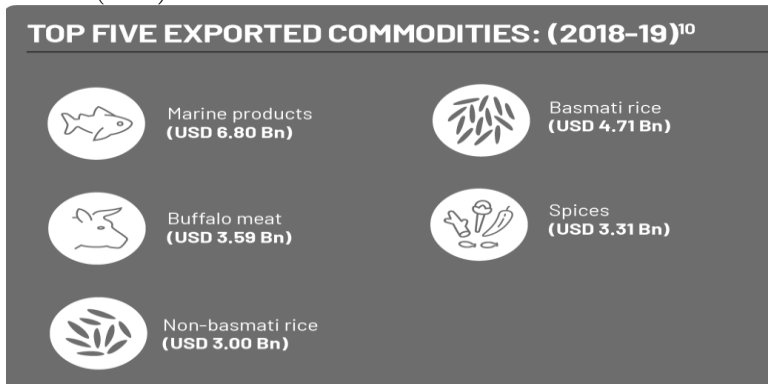
Industries, Parle Agro, ITC Ltd., Agro Tech Foods, Dabur India Ltd., Britannia Industries Ltd., Sunfeast and Haldiram's.

Major Challenges: Lack of Infrastructure: It has been observed in the recent past that India is lacking basic infrastructure for storage and grading of food items, then on the other hand there are bottle necks for post-harvest management. Then the poor road connectivity was another major issue; As a matter of fact, the cold storage use to play a crucial in the storing food grains and other related items till further use; Policy related deficiencies: Most of the prominent researchers and experts from the field state that there are so many laws and acts in the business of food processing that the business man wastes a large amount of time in dealing with the same. Then on the other hand both central and state governments are having different law and policy structure in this regard and this makes the situation even worse; Lack of Skilled Human resource: As per the report of FICCI from 2015 to 2018, the demand of food processing industry in terms of skilled human resource was never fulfilled and still there is a deficiency of the same. Then on the other hand in the same reports is has been mentioned that more than 70% of the human resource was not satisfied with their respective work place. Also the required technical knowledge and expertise is not available in the present workforce because of which many food processing companies have outsourced their major operations to overseas branches; Logistics related issues: Elongated and fragmented supply chain is majorly responsible for the wastage of food items in India, even the cost of material and final products also increases. This leads to general uncertainties of business and the effect of the same can be felt on the growth of overall industry; Pintensive in nature and farmers in our country are not capable enough to drag the whole business on their own, then the processing of credit from government and private agencies is so lengthy complicated and not more than 10% of the farmers are able to deal with the same. The valuation of the same can be seen in the below given chart; The food processing sector has been acknowledged as a high priority industry by the government of India and is currently being promoted with various fiscal reliefs and incentives. With the government's focus and a favorable policy ecosystem, the food processing sector has been growing at an Average Annual Growth Rate (AAGR) of around 8.41 %³ between 2014-18. The sector constitutes 8.83 %⁴ and 10.66 %⁵ of gross value added in manufacturing and agriculture sector respectively.

The Indian food industry's output is expected to reach \$ 535 Bn⁶ by 2025-26. Rising household incomes, urbanization and the growth of organized retail are currently some of the major drivers of this market. According to the latest Annual Survey of Industries (2016-17), food processing accounted for⁷ 15.95 % of the total number of factories, Employment to 11.36 % of the workforce, 14.09 % of the output and 16.78 % of the

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operational factories. The Indian market is fast evolving and has seen some major changes in terms of changing consumption patterns due to urbanization, changes in the gender composition of the workforce, and growing consumption rates. The growing consumption of food is expected to reach \$1.2Trn by 2025-26⁸, owing to these factors. India exports agricultural/horticultural products and processed foods to more than 100 countries/regions with major exports to the Middle East, Southeast Asia, SAARC countries, the European Union (EU) and the US. During 2018-19, India's exports of agricultural and processed food products totaled \$ 38.49 Bn⁹. Currently, India's total agricultural export basket is a little over 2% 11 of the world agricultural trade. Additionally, agricultural exports contribute about 2%12 to India's Gross Domestic Product (GDP).



Indian Food Processing Market Drivers

India not only has the advantage of a huge domestic market but also with abundant raw material, is a large sourcing hub for agriculture products. India has one of the largest working populations in the world and, with a rise in disposable incomes, this segment of the population is also becoming the biggest consumer of processed foods in the country. With an increase in urban working culture and fast-paced lifestyles, there is limited time available for cooking and meal preparation. Thus, processed foods such as ready-to-eat products and snacks have become quite popular, particularly in urban areas. By 2030, Indian annual household consumption is set to treble, making India an opportune market for consumption of processed foods.

Further, the proportion of working women in the industry has been increasing continuously both in the urban and rural regions.

Four major factors play a role in the growth of the food processing sector: Strong domestic demand: Changing lifestyle and food habits due to increased disposable income; Supply side advantages: High level of agricultural production - large livestock base, wide variety of crops, inland water bodies and a long coastline, that help increase marine production; Export opportunities: Proximity to key export destinations, greater

integration with the global economy; Proactive government policy and support.

Key Stakeholders: Ministry of Food Processing Industries (MOFPI)

MoFPI has a clear goal of attaining a strong and dynamic food processing sector thereby facilitating and acting as a catalyst to attract quality investments from within India and abroad into this sector with the aim of making food processing a national initiative.

MOFPI works on the following clear objectives: Obtaining a strong and dynamic food processing sector; Facilitate and act as a catalyst to attract quality investments from within India and abroad into this sector; Make food processing a national initiative; Promotes the active participation of private, public and cooperative sectors.

Food processing sector can boost farmers' income

The food processing sector would be able to increase farmers' income besides creating thousands of jobs, a study undertaken by Confederation of Indian Industry (CII). According to the report 'Unlocking Value in India's Food Processing Sector' which was released during the 14th edition of Food Pro 2022 here, the food processing industry is expected to reach USD 530 billion during the next five years. The report was conducted by McKinsey & Company, which served as the knowledge partner for the event. "The chances of this growth touching USD 600-650 billion is potentially high provided there is a sustained focus on optimizing food wastage, enhancing food processing and increasing exports," it said. As per the report, India has emerged as a global agricultural powerhouse and it is the second largest in production of cereals, pulses, fruits and vegetables, sugar and milk. "Agriculture not only contributes to 19 per cent of the country's GDP (gross domestic product) but also supports nearly half of the population's livelihoods." "The per capita agricultural GDP grew at a CAGR (compounded annual growth rate) of six per cent to Rs 15,056 per year between 2000-01 and 2020-21 while the industry grew at a CAGR of 11 per cent between FY 2015-2020 to USD 320 billion," the report said.

Status of Food Processing in India: India is the world's second largest producer of fruits & vegetables after China but hardly 2% of the produce is processed; In spite of a large production base, the level of processing is low (less than 10%). Approximately 2% of fruits and vegetables, 8% marine, 35% milk, 6% poultry are processed. Lack of adequate processable varieties continues to pose a significant challenge to this sector; India's livestock population is largest in the world with 50% of the world's buffaloes and 20% of cattle, but only about 1% of total meat production is converted to value added products; More than 75% of the industry is in unorganized sector; Processing can be delineated into primary and secondary processing. Rice, sugar, edible oil and flour mills are examples of primary processing. Secondary processing includes the

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processing of fruits and vegetables, dairy, bakery, chocolates and other items; Most processing in India can be classified as primary processing, which has lower value-addition compared to secondary processing. There is a need to move up the value chain in processed food products to boost farmer incomes. For instance, horticulture products, such as fruits and vegetables, carry the potential for higher value-addition when compared to cereal crops; At present, India's agricultural exports predominantly consist of raw materials, which are then processed in other countries, again indicating the space to move up the value chain.

FOOD PRODUCER



512m
Livestock
Population

India has largest livestock population



17%
Global Share
of Milk

Largest producer of milk in the world



One of top five producers world wide of rice, wheat, groundnuts, tea, coffee, tobacco, spices, sugar and oilseeds



World's
2nd
Largest
Producers



Fisheries



Fruit and Vegetable



Cereals



282.5m
Tons Fruit and
Vegetable

Estimated 282.5 million tons
in 2015-16

CLIMATE



20
Agro-climatic*
Regions

India has 20 agro-climatic* region



Agro-climatic conditions refer to soil types, rainfall, temperature, and water availability that influence the type of vegetation and cultivation practices.



15
Major Climates

of 26 major climates in the world



Ideal sunshine hours and day length for round the year cultivation

Challenges

Extensive use of fertilizers, pesticides and other chemicals has raised concerns about the quality of food which should be looked into. Further, protection is needed from unfair and hazardous practices such as adulteration.

Care should be taken as processed foods may not be nutritionally balanced and may pose a health risk especially for children unless fortified. This could trigger a negative perception regarding processed foods and could likely impact the economic gains made by this sector.

Low value-added in processing: There is major fragmentation of food processing capacity, with a large unorganized segment and widespread use of primitive processing. This results in lower value-addition at the processing stage, especially from a nutritional point of view.

Limited ability to control quality and safety: The sheer number of players, especially in the large unorganized segment, involved in the food value-chain, makes implementation of quality and safety norms difficult. This has led to practices such as milk adulteration and use of carbide for fruit ripening becoming more widespread.

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Low consumer awareness: Consumer awareness is a critical aspect of an improved nutritional situation in the country. Consumers currently lack awareness of several nutritional and food safety and quality aspects.

Suggestions- Storage capacities and infrastructure should be increased; Develop the agricultural facility with good agricultural practice which leads to the transition from staple food crops to diversification of crops; Backward linkages to farmers need to be made more robust. Contract farming can be promoted. According to the Model Contract Farming Act, 2018, the contract will specify the quantity, quality and price of produce being supplied. This would shield farmers from price volatility, subject to quality commitments; Skilling is required at two levels. First at the farm gate in promoting agricultural best practices and in processing activities; Public investment and connectivity should be increased; Slaughter animal rules should be framed in a comprehensive policy framework; Farm pattern diversification which leads to a production of variety of crops other than constant set of crops which creates lot of job opportunities; Second Green Revolution should be updated with the diversified technologies; We have to encourage the domestic startups and industry than the international companies; There should be a Centre of Excellence between centre and state; Should have more training institutes for upcoming entrepreneurs and it should be in all states. Scholarships should be given to the upcoming entrepreneurs; New technology should be updated in the training institutes and skill development should be given the top most priority.

Way Forward

Food processing has numerous advantages which are specific to Indian context. It has capacity to lift millions out of poverty and malnutrition. Government should develop industry in a way keeping in mind the interests of small-scale industry along with attracting big ticket domestic and foreign investments; The entire food value chain in India is controlled by multiple ministries, departments and laws. A comprehensive policy will ensure that various initiatives across the departments are aligned to the overall goal of ensuring availability, awareness, affordability, access, quality and safety of food; The target of ensuring food security for more than a billion people requires a concerted effort by all stakeholders including government and the food processing industry. In addition to private players and government, industry bodies and academia will also have a crucial role in the success of these initiatives.

Conclusion

Indian food processing is a growing industry and presents a large opportunity to the entrepreneurs for the development of the rural areas. However, there are many challenges in the food processing entrepreneurship which are hindering the economical and viable processing unit. The study indicated that lack of government support,

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quality and quantity of raw material, seasonality, inadequate infrastructure, access to latest technology, poor access to credit, lack of export support, lack of trained manpower, inadequate training practices, and wastages constitutes serious challenges for food processing entrepreneurship which are affecting the growth of rural development. To overcome these challenges Government, need to properly addressed and take some steps regarding the development of rural entrepreneurs like training programmers, favorable policies, favorable initiatives/schemes, financial support, infrastructure development in the rural areas etc. Entrepreneurship need to focus on enhancing the shelf life of the agro and horticulture produce, value addition, reduce the increasing number of wastages, increase the income of the rural farmer, and increase employment opportunities for the people of rural areas which lead to the development of rural area and the whole Indian economy.

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