EPRA International Journal of Agriculture and Rural Economic Research (ARER)- Peer-Reviewed Journal
Volume: 13 | Issue: 6 | June 2025 | Journal DOI: 10.36713/epra0813| Impact Factor SJIF(2025): 8.733| ISSN: 2321 – 7847

ROLE OF FOOD PROCESSING INDUSTRY IN ECONOMIC DEVELOPMENT

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Article DOI: https://doi.org/10.36713/epra22366
DOI No: 10.36713/epra22366

India has a long legendary agricultural practices, though the people of India have acquired the knowledge on cultivation utilizing experience over time these cultivation practices were meant for livelihood purpose only and this cannot be used presently on commercial platform and committee to market the cultural practices adopted in cultivation of any agro products, we don't know whether this can be used for value addition or not in developing countries.

Now a day's people use the degree of control in agriculture practices to convert in to commercial agriculture in place of substance agriculture as prevalent in India.

With a projected GDP growth of almost 8% in FY24, India, the fifth-largest economy in the world, is predicted to grow at the quickest rate among the main G20 nations. Food processing sector has become a major contributor to Indian economy, growing at an annual pace of 7.3% between 2015 and 2022. India's food processing in India is likely to increase rapidly, reaching US$ 1,100 billion by FY35, US$ 1500 billion by FY40, US$ 1900 billion by FY45, and US$ 2,150 billion by FY47, according to the Vikasit Bharat @2047 report.

World's food system, which is essential to human survival, is currently under unprecedented stress, accounting for 25–30% of greenhouse gas emissions worldwide and utilizing a lot of resources. This vital industry provides food for billions of people, but it is also confronted with issues including growing food insecurity made worse by climate change, conflicts, and state of world economy, which has left 345 million people in extreme food insecurity.Food processing businesses play a vital role in economies that integrate sustainable practices in food manufacturing, which influences both environment and economy. Requirement for food is expected to quadruple by 2050, underscoring urgent need for sustainable expansion within industry.Food processing industry adds significant value to agricultural products by transforming raw materialsinto finished products.It not only increases shelf life of perishable products but also enhances marketability, leading to higher income for farmers. It is a key contributor to India's economic development and is a vital tool for food security and nutrition, and has major employers, particularly in rural areas.

Food processing industry is an essential part of global food supply chain and serves as a fundamental bridge between two key economic pillars of agricultureandindustry.

India's food processing sector is 6th largest in world, and this sector contributes approximately 9% to gross value added (GVA) in agriculture sector.It has potential to reach $535 billion by 2050. It is predicted to generate nine million jobs by 2024 and it contributes 23 % of countries exports during last five years ending FY21 sector is growing at CAGR (Compound Annual Growth Rate) of around 8.3%.

An important part of Indian economy, food processing sector includes manufacturing businesses of all sizes. India's competitive advantage in terms of its abundant resources, sizable domestic market, and potential for promoting value-added products makes this sector ripe for growth, increasing farmer income, decreasing post-harvest losses, creating jobs, and boosting exports—all of which act as a link between manufacturing and agricultural sectors to contribute to GDP growth rate.

In current scenario India enjoys the second position in world in production of roots followed by Brazil and second position in fruits and vegetables after china world fruit production is estimated around 256 million tones out of which India accounts for about 8% i.e., about 30 million tones of world production and India will produce about 13% (59 million tones).

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Despite such high-level production in Horticultural Sector only Around 1% of the total fruits and vegetables are presently being processed when compared to 70 % in Brazil, 62-70 % in USA, 83 % in Malaysia, and 78 % in Philippines. In 2022-23 India produced 108.34 million tonnes of fruits and 212.91 million tones of vegetables.

About 55% of India's output is sold abroad, while 45% is sold domestically. As per Ministry of Commerce and Industry, government of India, food exports are predicted to reach US$61 billion by 2024, with processed food product exports increasing at a CAGRof 15per cent over previous five years. Government initiatives are also aimed at increasing food processing exports by US$10 billion by 2025 (as per Department of Food Processing Industries).Currently, in state of Orissa, there are 1211 food processing units (FPU) of which 30% are on largest scale. The product-mix of the sector in the state of Orissa mainly includes Tomato sauce, turmeric, chilli, cumin seed powder, mixed pickle, tamarind powder, cashew nut processing, coconut processing and vegetable processing like mushroom etc., Food processing sector in odisha has potential to grow atCAGR of11 per cent.

One of India's biggest sectors, food processing,has been major economic engine and is expected to continue growing. India's agricultural exports now total around $53 billion, with processed food exports having increased by 150% over the past nine years.Thus, India has potential to export a substantial part of its production and therefore has adopted new technologies and manufacturing practices, polices, and government initiatives to further position itself for huge growth, increasing its contribution globally every year.

BASIC FUNCTION OF A FOOD PROCESSING TECHNOLOGY

INPUT

The input to the food processing industries is a vital to produce a marketable product through processing; it may be through cereal, pulses, fruits, vegetables, spices, tea, coffee, dairy, animal husbandry and fishery sector.

The quality of raw material is important to have similar output the shape and chemical composition of the raw material are basis for the selection of the raw material.The variety and uniformity in physical parameters are very vital in producing export quality product.

The export quality standards are different from the internal market standards for example fortification of micro nutrients is very vital for export and to grade products and same as for internal markets.

Fortification of micro nutrients of food implies addition of minerals and vitamins to products to improve their nutritional values. Eastern regional conference aims to discuss the various issues about micro nutrient fortification of food and consolidate a National Action plan by involving all stakeholders, i.e., Industry, concerned government departments and Research and development institutions

At present, it is well recognized that the problem of micronutrient deficiency in India is serious;around 74% of India’s population cannot afford a healthy diet, and according to National Family Health Survey, around 68% of deaths in children under 5 years are due to malnutrition. It is also known that the dietary intake of over 350 million people in India is Inadequate to meet their nutritional needs. Over 320 million individuals have iron deficiency anaemia, with women and children having the highest frequency, which has a significant impact on their health and reproductive problems.

Iron deficiency affects more than 200 million individuals, leading to severe physical and mental illnesses. This deficit results in an average loss of 13 IQ points. 30,000 are going blind every year owing to Vitamin A deficiency, it also results in Mortality and Morbidity in young infants.Recognising the serious health and socio-economic implications of these micro-nutrient deficiencies resulting in death, disability and National productivity loss amounting to about Rs. 27,720 crore per year, representing roughly 1 % of GDP. It is imperative that the strategies

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are revised to control this deficiency for adopting the right kind of intervention to ensure a healthy growth of the people of India which is country's major asset.

PROCESSING

ANAND in the field of milk production and processing and presently there is no other food processing industry developed a systematic approach for technological intervention to produce an input material that is very much suitable for processing and value addition to the processing techniques, the products developed in the laboratory scale models in research and development Institutions like CFTRI, DFRL, IITS. They make experiments at the cost of the Entrepreneurs on the prototype units. The product quality is not excellent enough to attract external buyers. After 50 years of independence still dependent on the process design of the developed countries.

Food processing sectors must have deep knowledge on unit operations on the food for changing the undesirable ones to a desirable product. Besides the unit operation the operators have no facility to acquire knowledge on quality product production. It is high time that the people must have Awareness on this matter and government must find the gap and start the capacity building activity in input processing sector.

The mass training programmes conducted by various agencies are not veryeffective; some simple means have to be followed where the trainee may practice any food production method for some period till theydevelop the knowledge and technology intervention to produce MNC (multi-national company) branded processed food. The successful Industries like Lijjat papad may be referred and similar means may be developed to achieve the target. The money spent by the government should vary with various levels of Training from lower to higher levels. It is important to boost the training schedule to produce International Brand processors locally.

The machinery manufactured is using obsolete Technology that must be identified, and producers must be properly advised to modify it. The new entrepreneurs must always update with latest technological machines for the processing of food and manufacturing. There is a great need to take up capacity-buildingactivities in this area. NongovernmentalOrganisations may be involved in collecting the information and giving it to theGovernment to incorporate necessary changes to update the processing, technology. This will create a reputation in the international market and produce quality processed food in the country.

OUTPUT

Processing parameters must be well documented to help the manufacturers to produce brand for the country instead of product producing for a company, this will help in universal acceptability and boost marketing. The desired product property for all the food processing material may be available and the process of manufacturing may be made transparent.

HACCP and ISO are vital for management of quality and food productsafety have to be implemented in food processing line. The systematic production process will always help in best quality product.Idea behind Total Quality Management (TQM) is to continuously enhance internal procedures to raise the quality of an organization's outputs.Persons working in a processing line must have training on optimization and knowledge of the latest facilities, like E-commerce and tools available to produce low-cost and high-quality process products for theirmarket destination.

Considering the above parameters, it may be concludedthat the raw material for food processing industry stands on three major parameters:

i. Method of cultivation
ii. Point of Harvest
iii. Technology in Irrigation Management

Based on the Field survey observations on the problems and prospects of this Industry SWOT(Strength, Weakness, Opportunities, Weakness) Analysis has been carried out to asses different aspects of this sector. SWOT analysis brings out the following Characteristics of this sector:

STRENGTHS

i. Abundant availability of Raw material
ii. Status of Priority sector for Agro-processing given by central Government
iii. Formation of Nodal Marketing Agency.

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WEAKNESS

I. Seasonality of Raw Material
II. Preferences and Tastes of people to consume fresh fruits and vegetables.
III. Inadequate infrastructure facilities are scarce.
IV. Insufficient testing and quality control procedures in accordance with international standards
V. Supply chain inefficiency brought on by a high number of middlemen.
VI. Inadequate developed linkages between Industryand Research Organizations
VII. Higher Requirement of Working Capital.

OPPORTUNITIES

I. A wide range of crops and materials provide a wealth of opportunities for agroprocessing activities.
II. Establishing food parks and an Agro Export Zone (AEZ) to provide additional incentives for the development of green field projects
III. Changing consumption patternsand raising Income levels
IV. Potential demand of processed foods.
V. Development and Integration in Product Innovation and Diversification
VI. Opening of Global markets.

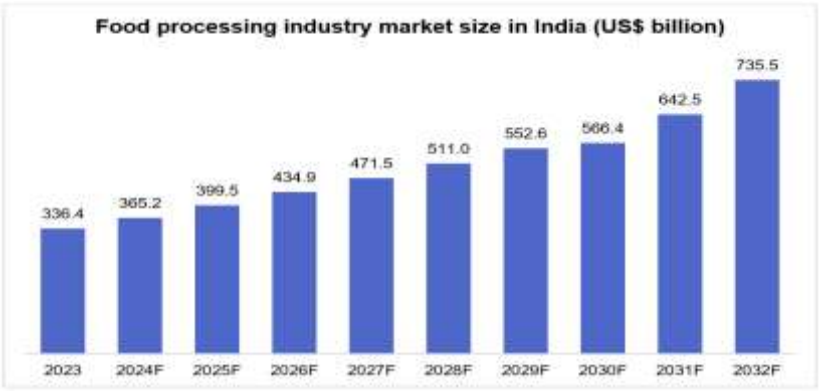
THREATHS

i. Cultural preferences and affordability of fresh foods.
ii. High Inventory Carrying cost
iii. High Taxation
iv. High Packaging Cost
v. Natural calamity leading to the lower level of Production.

Current growth trends in India's food processing industry

- **Overview of recent growth in the food processing sector**

In India, food processing sector has had tremendous development in past years, and it is now one of the most promising sectors, supporting nation's economic expansion.India's food processing sector was predicted to be worth US$ 336.4 billion in 2023 byIMARC (International Market Analysis Research and Consulting Group), and it is anticipated to reach US$ 735.5 billion in 2023–2022 at a CAGR of 8.8%.



Source - IMARC, Note - F-Forecasted

Contribution to India's GDP

Potential contribution of food processing to India's GDP is enormous. To encourage domestic production and draw in investments, it is identified as one of the key industries under "Make in India" policy initiative. In addition to being important for maintaining economic growth, sector supports livelihoods of millions of people nationwide by offering chances for gainful employment. According to recent data, industry has grown at an average annual growth rate (AAGR) of approx. 7.26 percent during last seven years, making it a crucial sector of national economy.

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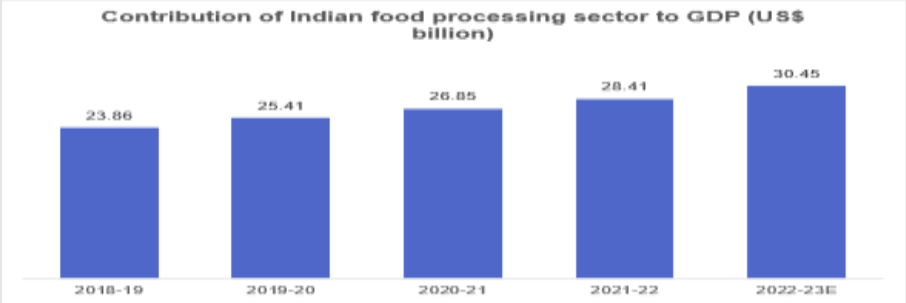

Source - Grant and Thornton Note - 2022-23E – Estimated

Challenges facing by the Food Processing Industry

1. Low GVA despite high demand- Even though India's demand for processed and ready-to-eat food is rising, the sector's contribution of the country's GVA has only been 1.88% from 2020 to 21 compared to manufacturing's 17.86% and agriculture's 16.26% shares.

2. Lack of skilled manpower and modern technology- One of the biggest issues facing the Indian business has been highlighted as the availability of skilled labor. Outdated technology isutilized in many processing plants, which lowers productivity and product quality.

3. Infrastructure Bottlenecks- Over 30 per cent of produce is lost after harvest because of inadequate cold storage facilities, transportation networks, and processing infrastructure. Post-harvest losses are predicted by NITI Aayog to be close to Rs 90000 crore annually.

4. Informalization and Unorganized Segments- The industry is heavily concentrated in unorganized divisions, which make up over 75% of all product categories. The production system becomes inefficient as a result.

5. Supply Chain Inefficiencies- Delays, waste, and low-quality products are the results of disjointed supply chains with numerous players and inadequate coordination.

6. Regulatory Challenges- Indian processed food exports are hampered by strict sanitary and phytosanitary (SPS) regulations in export markets.

A Golden future for India's food processing industry

India's food processing sector is about to undergo a significant transition for several reasons, including rising urbanization, changing consumer preferences, and most importantly, a business-friendly political environment. The growth in domestic processing capacity to 20 million metric tonnes since 2014 has opened up numerous opportunities for innovation and investment.

By encouraging production of processed fruits, vegetables, ready-to-eat goods, and dairy products, among other things, the agro-industry ecosystem will be modernized. This would increase exports, attract technology, develop infrastructure, and position India as a significant player in global food market.

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