

# Food Processing Industries in India

India's food processing sector is one of the largest in the world, with output expected to reach \$535 billion by 2025-26. The food processing sector in India plays a critical role in connecting Indian farmers to consumers in both domestic and international markets. The Ministry of Food Processing Industries (MoFPI) is making every effort to encourage investment throughout the value chain. Grain, sugar, edible oils, beverages, and dairy products are major sectors of India's food processing industry. PMKSY has approved 41 Mega Food Parks, 348 Cold Chain projects, 68 Agro-Processing Clusters, Creation of 61 Backward and Forward Linkages Projects, and 6 Operation Green projects across the country. In this article, we will discuss Food Processing Industries in India which will be helpful for UPSC exam preparation.

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### What is Food Processing?

- Food processing is the transformation of raw ingredients into food or food into other forms (ie. food processing may denote direct manufacturing of food or value addition on existing food).
- It can include the transformation of raw materials into food through various physical and chemical processes.
- This process includes mincing, cooking, canning, liquefaction, pickling, macerating, and emulsification.
- Clean, harvested crops or butchered and slaughtered animal products are required to produce appealing, marketable, and, in some cases, life-long food products.
- However, food processing can reduce the nutritional value of the food and

may include additives that are harmful to health.

#### **Other Relevant Links**

- Pradhan Mantri Kisan Sampada Yojana
- Mega Food Parks
- Operation Greens
- Food security

#### **Food Processing Sector - A Sunrise Sector**

- With stimulating growth in the food retail sector, favourable economic policies, and attractive fiscal incentives, India's food ecosystem offers enormous opportunities for investment.
- The Government of India (GoI) is taking all necessary steps to increase investment in India's food processing industry through the Ministry of Food Processing Industries (MoFPI).
- The GOI has extended the PMKSY umbrella scheme with an allocation of INR 4600 crores until March 2026.
- The Ministry has also been implementing two additional flagship programmes:
  - The Production Linked Incentive (PLI) Scheme aims to modernise and boost the competitiveness of the food processing industry by producing specific categories of food products with a high potential for output growth and value addition over a six-year period until 2026-27.
  - PM Formalization of Micro Food Processing Enterprises Scheme (PMFME) for financial, technical,

and business support for existing micro food processing enterprises.

- By 2025, India's food processing market could be worth \$470 billion. Tier-II and Tier-III cities may follow the lead of metropolitan areas in consuming more processed food in the coming years.
- From 2011-12 to 2020-21, the export of products in the Ready to Eat (RTE), Ready to Cook (RTC), and Ready to Serve (RTS) segments grew at a CAGR of 10.4%.
- India exported more than \$ 2.14 bn worth of final food products in 2020-21.
  - The United States, the United Arab Emirates, and Nepal are the top three RTE export destinations in 2020-21.
  - In 2020-21, the major exporting destinations for RTC are the United States, Malaysia, and the United Arab Emirates.

#### **Classification of Food Processing Industry**

A large population and ever-increasing demands in India, combined with the country's suitable climatic, geographic factors, and intelligent human asset, have led to the development of many types of food processing industries, such as:

- Cereal/ pulse milling
- Fruit & vegetable processing
- Milk & milk products
- Beverages (Tea, Coffee & Cocoa)
- Fish, Poultry, & Eggs
- Meat & meat products

- Aerated waters, Soft drinks
- Beer & Alcoholic beverages
- Bread, Biscuits & Bakery products
- Edible oil & Fats
- Confectioneries
- Breakfast cereals, Malt protein, Extruded food products

### **Importance of Food Processing Sector**

- India is well-known for its agricultural output. Agriculture employs more than half of the Indian population.
- Raw materials such as grains or meat can be converted into food for domestic and foreign consumption if India has a good food processing industry.
- Food processing units serve as a link between agriculture and industry.
- Food processing industries can absorb a significant portion of the agricultural sector's unemployed workers. It has the potential to increase productivity and GDP growth.
- Food processing reduces food waste and aids in the achievement of food security.
- Processed foods require less storage space.
- Food in the processing stage can be exported. This could aid us in obtaining foreign exchange reserves.
- Given the current levels of processing, the Indian food processing industry has remarkable potential for growth.

### **Food Processing Sector - Key Facts**

- In 2021-22, total horticulture production is expected to be 341.63 MT.

- India ranks first in milk production and contributes 23% of global milk production, which is expected to grow at a CAGR of about 6.2% to 209.96 MT in 2020-21.
- India ranks third in global egg production, producing at least 122.11 billion eggs in 2020-21, with per capita egg availability of 91 eggs per year in 2020-21.
- India is the world's second largest fish producer, accounting for 7.56% of global output. The total fish production for fiscal years 20-21 is estimated to be 14.73 MMT.
- India's sugar exports stood at 8.6 MT in May of the current 2021-22 marketing year, which ends in September.
- Online grocery retail in India has grown at a CAGR of more than 50% and is expected to reach \$10 billion to \$12 billion by 2025.
- Despite the sector's difficult circumstances, India's marine product exports reached \$7,740 million in 2021-22. It experienced 30% higher growth than in 2020-21.
  - The top three favourite destinations for Indian marine exports are the United States, China, and Japan. Exports to these three countries accounted for 63% of total exports.
- Other cereals exports increased from 102 MT in 2019-20 to 521 MT in 2020-21.
- India ranks eighth in the world in terms of meat production. The country's meat production has

increased from 6.69 MT in 2014-15 to 8.80 MT in 2020-21.

- According to preliminary estimates, rice production will be 127.93 MT, wheat production will be 111.32 MT, and cereals will be 49.86 MT in 2021-22.
- During the same time period, the CAGR for pulses, oilseeds, and cotton was 7.9, 6.1, and 2.8%, respectively.
- Rice exports in August 2022 are valued at \$ 1032.48 million, accounting for 3.13% of total monthly exports.

#### **Food Processing Sector - Growth Potential**

- India is the world's second largest producer of fruits and vegetables after China, but only about 2% of the produce is processed.
- Despite a large production base, the level of processing is low (less than 10%). Approximately 2% of fruits and vegetables, 8% of marine products, 35% of milk, and 6% of poultry are processed. The lack of adequate processable varieties remains a significant challenge for this sector.
- India has the world's largest livestock population, with 50% of the world's buffaloes and 20% of the world's cattle, but only about 1% of total meat production is converted to value added products. More than 75% of the industry is unorganised.
- Processing is classified as either primary or secondary.
  - Primary processing includes mills for rice, sugar, edible oil, and flour.

- Secondary processing includes the processing of fruits and vegetables, dairy, bakery, chocolates, and other items.

- The majority of processing in India is classified as primary processing, which has lower value addition than secondary processing.
- To increase farmer incomes, processed food products must be moved up the value chain.
- Horticulture products, such as fruits and vegetables, for example, have the potential for greater value-addition than cereal crops.
- At the moment, India's agricultural exports primarily consist of raw materials, which are then processed in other countries, indicating yet another opportunity to move up the value chain.

#### **Food Processing Sector - Challenges**

- **Bottlenecks on supply and demand sides:** Small and dispersed marketable surplus due to fragmented holdings, low farm productivity due to lack of mechanisation, high seasonality, perishability, and lack of proper intermediation (supply chain) all contribute to a lack of raw material availability. As a result, food processing and exports are hampered.
- **Bottlenecks in the infrastructure:** More than 30% of farm-gate produce is lost due to insufficient cold chain infrastructure. Supply is erratic due to a lack of all-weather roads and connectivity.
- The food processing industry has a high concentration of unorganised

segments, which account for nearly 75% of all product categories. As a result, the existing production system is inefficient.

- **Regulatory Gaps:** There are numerous laws that govern food safety and packaging, each under the jurisdiction of a different ministry or department.
- Contradictions in food safety specifications and guidelines result from the proliferation of legislation and administrative delays.
- The widespread use of fertilisers, pesticides, and other chemicals has raised concerns about food quality, which should be investigated. Furthermore, protection from unfair and dangerous practises such as adulteration is required.
- Processed foods may not be nutritionally balanced and may pose a health risk, particularly for children, unless fortified. This could lead to a negative perception of processed foods, potentially affecting the sector's economic gains.
- **Limited ability to control quality and safety:** The sheer number of players involved in the food value-chain, particularly in the large unorganised segment, makes implementation of quality and safety standards difficult.
- As a result, practises such as milk adulteration and the use of carbide for fruit ripening have become more common.
- Low consumer awareness: Consumer awareness is a critical component of the country's improved nutritional

situation. Consumers are currently unaware of several nutritional, food safety, and quality issues.

### **Major Initiatives of Government - Food Processing Sector**

#### **Vision 2015 for Food Processing**

- The Ministry of Food Processing Industries (FPI) has funded a study to develop a roadmap for the growth of the food processing sector.
- The adopted Vision 2015 calls for increasing perishable processing from 6% to 20%, increasing value addition from 20% to 35%, and increasing India's share of global food trade from 1.5% to 3% by 2015.
- To meet these targets, an investment of Rs.100,000 crores was estimated by 2015, with the government contributing Rs.10,000 crores.
- As a result, the Ministry of FPI developed its 11th Plan schemes in order to attract the necessary investment in the sector.

#### **National Mission on Food Processing (NMFP)**

- On April 1, 2012, the Ministry of Food Processing Industries (MOFPI) launched a new Centrally Sponsored Scheme (CSS) - National Mission on Food Processing (NMFP) for implementation through States/UTs.
- The NMFP envisions the establishment of a National Mission as well as Missions at the State and District levels.
- The primary goal of the NMFP is to decentralise the implementation of food processing-related schemes in

order to ensure substantial participation by State Governments/UTs.

- The mission is expected to significantly improve the Ministry's outreach in terms of planning, supervision, and monitoring of various schemes, as well as play a more meaningful role in policy formation.

### **Pradhan Mantri Kisan SAMPADA Yojana**

- The Pradhan Mantri Kisan SAMPADA Yojana is a central government scheme launched by the Ministry of Food Processing Industries (MoFPI).
- PM Kisan Sampada Yojana is a comprehensive package that will result in the development of modern infrastructure and efficient supply chain management from farm gate to retail outlet.
- It will not only help to boost the growth of the country's food processing sector, but it will also help to provide better returns to farmers and is a big step towards doubling farmers' income, creating huge employment opportunities, especially in rural areas, reducing wastage of agricultural produce, increasing the processing level, and enhancing the export of processed foods.

### **Mega Food Parks**

- The Mega Food Park Scheme aims to provide a mechanism to link agricultural production to the market by bringing together farmers, processors, and retailers in order to maximise value addition, minimise

waste, increase farmer income, and create job opportunities, particularly in the rural sector.

- The Mega Food Park Scheme is based on the "Cluster" approach and envisions the development of cutting-edge support infrastructure in a well-defined agri/horticultural zone for the establishment of modern food processing units in the park's industrial plots with a well-established supply chain.
- Mega food parks typically include supply chain infrastructure such as collection centres, primary processing centres, central processing centres, cold chain, and between 25 and 30 fully developed plots for entrepreneurs to establish food processing units.
- The Mega Food Park project is being carried out by a Special Purpose Vehicle (SPV), which is a Body Corporate registered under the Companies Act.

### **Operation Greens**

- Operation Greens is a price-fixing scheme that aims to ensure farmers receive the correct price for their produce.
- It aims to promote Farmer Producer Organizations (FPO), Agri-logistics, processing facilities, and professional agri-produce management.
- It focuses on organised marketing of Tomatoes, Onions, and Potatoes (TOP vegetables) by connecting farmers with consumers.
- State Agriculture and other Marketing Federations, Farmer Producer

Organizations (FPO), cooperatives, companies, self-help groups, food processors, and others can apply for financial assistance under it.

- Agriculture Produce Market Committee (APMC) promoted markets will be linked to the e-NAM platform to aid in the structural and infrastructure components of the scheme.

### **Modernization of Abattoirs**

- The scheme aims to provide facilities for scientific and less painful slaughtering, chilling, effluent treatment plant, by-product utilisation, water, and power, as well as the necessary sanitary/phytosanitary conditions for abattoir modernization.
- It will also increase the essential supply base of hygienic raw materials to the meat processing industry, both for domestic consumption and exports, while discouraging unauthorised slaughtering.
- The scheme for the establishment/modernization of abattoirs calls for the infusion of private capital, improved technology, and backward and forward linkages.

### **Integrated Cold Chain and Value Addition Infrastructure**

- The "Integrated Cold Chain and Value Addition Infrastructure" is to provide continuous integrated cold chain and preservation infrastructure from the farm gate to the consumer.
- This scheme will connect producers to food processors and markets via a

well-equipped supply chain and cold chain, ensuring farmers fair prices and year-round availability of food products to consumers.

- Partnership/Proprietorship Firms, Companies, Corporations, Cooperatives, Self Help Groups (SHGs), Farmer Producer Organizations (FPOs), NGOs, Central/State PSUs, and others can set up an integrated cold chain project if they meet the eligibility requirements of the scheme guidelines.

### **खाद्य प्रसंस्करण क्षेत्र से संबंधित चुनौतियाँ:**

- **कोल्ड चेन और भंडारण की कमी:** अपर्याप्त कोल्ड स्टोरेज और परिवहन सुविधाओं के परिणामस्वरूप फसल के बाद खराब होने वाली वस्तुओं की अत्यधिक हानि होती है। इससे न केवल भोजन की गुणवत्ता प्रभावित होती है बल्कि किसानों की आय पर भी असर पड़ता है।
- **खंडित आपूर्ति शृंखला:** भारत में आपूर्ति शृंखला अत्यधिक खंडित है, जिससे बढ़ी हुई लागत के साथ ही अपर्याप्तता की स्थिति उत्पन्न होती है। खराब सड़क और रेल बुनियादी ढाँचे के परिणामस्वरूप परिवहन में देरी और नुकसान हो सकता है।
- **जटिल नियम:** खाद्य प्रसंस्करण उद्योग नियमों, लाइसेंस और परमिट के एक जटिल जाल के अधीन है, जिसका समाधान करना व्यवसायों के लिये चुनौतीपूर्ण हो सकता है।
- नियमों के असंगत प्रवर्तन से अनुचित प्रतिस्पर्द्धा और गुणवत्ता संबंधी समस्याएँ उत्पन्न हो सकती हैं।
- **खाद्य सुरक्षा संबंधी चिंताएँ:** आपूर्ति शृंखला में अंतराल के कारण खाद्य सुरक्षा और गुणवत्ता मानकों को सुनिश्चित करना एक

- गंभीर चुनौती बनी हुई है। दूषित या मिलावटी खाद्य उत्पाद सार्वजनिक स्वास्थ्य को नुकसान पहुँचा सकते हैं तथा क्षेत्र की प्रतिष्ठा को नुकसान पहुँचा सकते हैं।
- **अनुसंधान और विकास:** अनुसंधान और विकास के क्षेत्र में सीमित निवेश नवाचार और नए, मूल्य वर्द्धित उत्पादों के विकास में बाधा उत्पन्न करता है।
- प्रमुख अर्थव्यवस्थाओं की तुलना में भारत का अनुसंधान और विकास (R&D) व्यय-GDP अनुपात 0.7% है जो कि बहुत कम है और विश्व औसत 1.8% से काफी नीचे है।

### बिहार के हर पंचायत में लगेगी फूड प्रोसेसिंग यूनिट

22 मई, 2023 को बिहार उद्योग विभाग के निदेशक पंकज दीक्षित ने बताया कि राज्य की सभी 8387 पंचायतों में 'प्रधानमंत्री सूक्ष्म खाद्य उद्योग उन्नयन योजना' के तहत खाद्य प्रसंस्करण उद्योग लगाने की योजना पर काम शुरू हो चुका है। उद्योग विभाग ने जिला उद्योग केंद्र के महाप्रबंधक को इसकी जिम्मेदारी सौंपी है।

### प्रमुख बिंदु

- राज्य सरकार खाद्य प्रसंस्करण उद्योग लगाने वाले उद्यमियों को हर तरह की सहायता देगी। उन्हें सब्सिडी से लेकर कर्ज तक की सुविधा

मुहैया करायी जाएगी। इसके लिये जिला उद्योग केंद्र उद्यमियों का चयन और उनके प्रोजेक्ट का वेरिफिकेशन करेगा।

- इससे राज्य में कृषि आधारित उत्पादों का उपयोग खाद्य प्रसंस्करण उद्योग में बड़े पैमाने पर होगा, साथ ही, स्वरोजगार से प्रेरित होकर बेरोजगार युवाओं को रोजगार देने वाला बनाया जा सकेगा। खाद्य प्रसंस्करण उद्योगों को बढ़ावा मिलने से आसपास के क्षेत्रों में होने वाले पलायन को रोका जा सकेगा।
- विभाग के आधिकारिक सूत्रों के अनुसार इस कार्यक्रम में पीएम-एफएमई के तहत नये रोजगार शुरू करने के लिये ऋण हेतु आवेदन भी लिये जाएंगे, ताकि इच्छुक आवेदकों को आर्थिक सहायता बैंक के माध्यम से उपलब्ध कराकर उन्हें नये उद्योग शुरू करने में सहायता की जा सके।
- साथ ही, मौजूदा इकाइयों को भी अपग्रेड करने के लिये अधिकतम 10 लाख रुपए प्रति यूनिट के साथ पात्र परियोजना लागत के 35 प्रतिशत पर क्रेडिट-लिंक्ड कैपिटल सब्सिडी का लाभ प्राप्त कर सकते हैं।
- इस योजना के माध्यम से केंद्र सरकार उन सभी लोगों की आर्थिक सहायता करेगी, जो लोग खाद्य उद्योग में अपना कोई नया काम शुरू करना चाहेंगे।