



E-ISSN: 2709-9385

P-ISSN: 2709-9377

JCRFS 2023; 4(1): 49-56

© 2023 JCRFS

www.foodresearchjournal.com

Received: 03-11-2022

Accepted: 11-12-2022

**Dahihande Pranali
Bharatkumar**Department of Processing and
Food Engineering, University
of Agricultural Sciences,
Raichur, Karnataka, India**Pakeeza Khatun**Department of Post-Harvest
Engineering, Bidhan Chandra
Krishi Viswavidyalaya,
Mohanpur, West Bengal, India**Chaman Kumar**Department of Processing and
Food Engineering, Dr
Rajendra Prasad Central
Agricultural University, Pusa,
Bihar, India**Awadhesh Kumar Yadav**Department of Processing and
Food Engineering, S.V.B.P
University of Agriculture &
Technology, Meerut, Uttar
Pradesh, India**Correspondence Author;****Dahihande Pranali
Bharatkumar**Department of Processing and
Food Engineering, University
of Agricultural Sciences,
Raichur, Karnataka, India

Role of agriculture processing in export growth of agricultural products

Dahihande Pranali Bharatkumar, Pakeeza Khatun, Chaman Kumar and Awadhesh Kumar Yadav

DOI: <https://doi.org/10.22271/foodsci.2023.v4.i1a.91>

Abstract

About 13 million people are employed directly and 35 million people are employed indirectly in the food processing industry. 2.20% of fruits and vegetables, 35% of milk, 21% of meat, and 6% of poultry are processed at all. The amount of value addition is merely 20%. About 14% of the manufacturing Gross Domestic Product was provided by the food processing industry. According to the Ministry of Food Processing Industries' classification, this sector encompasses consumer items such packaged foods, drinks, and drinking water in addition to dairy, fruits and vegetable processing, grain processing, meat and poultry processing, and fisheries. These two processes are (a) manufactured processes and (b) other processes with value addition. The country's economic development and expansion depend heavily on agriculture. A little over 12% of all exports come from the agricultural sector. In 2015–16, India's agricultural exports made up around 2.2% of all agricultural exports globally. The domestic price of goods during bulk exports, such as sugar, wheat, rice (both basmati and non-basmati), etc., is higher in contrast to international pricing, which reduces the commercial competitiveness of our exports. Therefore, the government is implementing a number of policy changes to increase the export quantity and value of agricultural products from India while also stabilizing the nation's balance of payments. Due to factors like increased foreign demand, exports of agricultural products increased by 35.76% in the first quarter (April to June) of 2021–22 compared to the same time in 2020–21. Wheat, vegetable oils, other cereals, non-basmati rice, and molasses were the key factors driving an increase in agri-exports in 2020–21, and other cereals, meat, dairy, and poultry during the first quarter of 2021–22. Exports are a significant source of foreign currency and are vital to the expansion of the Indian economy. India is a significant exporter of agricultural products, contributing to its strong foreign currency reserves. The rise in agricultural production has the biggest influence on how agriculture develops.

Keywords: Role of agriculture, GDP, agriculture process export, growth, product

1. Introduction

According to (Agriculture and food management, 2022). India has the potential to overtake China as the top food producer in the world. It currently ranks second. With a rise of 3.6% in 2020-21 and 3.9% in 2021-22, the agriculture sector saw brisk expansion during the previous two years, contributing a sizable 18.8% (2021-22) to the country's Gross Value Added (GVA). A wide range of temperate to tropical fruits, vegetables, and other culinary items are produced in India. Fruits and vegetables are best preserved and used when they have been processed into culinary products. Strong agricultural foundation, diversity of climate zones, and growing economic expansion in India all have great potential for the food processing sector, which creates a direct link between agriculture and consumers.

India is a major producer of a number of goods, including dairy, cereals, spices, fruits and vegetables, rice, wheat, cotton, and others (Kumar., 2021) ^[19]. The total amount of food grains produced in the nation increased from 176.39 million tonnes (MT) in 1990–1991 to 305.45 MT in 2020–21, but the production of horticulture increased considerably more quickly, from 96.6 MT in 1991–1992 to 326.6 MT in 2020–21. From 53.9 MT in 1990–1991 to 208 MT in 2020–2021, the production of milk has also expanded dramatically. The amount of fish produced increased from 3.84 MT in 1990–1991 to 14.07 MT in 2019–20, while the amount of eggs produced increased from 21101 million in 1990–1991 to 114419 million in 2019–20.

India is one of the world's top producers of rice, groundnuts, milk, and a variety of fruits and vegetables, including mangoes, eggplant, potatoes, and others. With these benefits, India is currently exporting fresh and processed food items to a number of emerging and developed countries marketplaces, including the United States (US), the European Union (EU), Vietnam, and the Middle Eastern nations. After the EU, US, Brazil, China, Canada, Indonesia, Thailand, and Australia, the World Trade Organization (WTO) reports that India was the ninth largest exporter of agricultural goods in 2015. The Middle East, SAARC nations, Southeast Asia, the European Union, and the United States are among the top export destinations for agricultural as well as horticulture and processed goods (Kumareswaran *et al.*, 2018) ^[12].

In India, agriculture is not only significant but also serves as a platform for economic growth. For Indian families, it is one of the vital professions. It generates over 16% of India's total GDP and 12% of all exports. Increased global demand for Indian agricultural products offers fantastic potential. The core of the Indian economy is the agricultural sector. However, the contribution of agriculture to the nation's GDP has decreased as other industries have grown. Nevertheless, the agriculture sector continues to play a significant role in sustaining India's overall economic status. India exports an excess of food and agricultural goods. Agriculture-related goods including jute, tea, tobacco, coffee, and spices account for a sizable component of India's export commerce. In 2015–16, India's agricultural exports made up about 2.2% of all agricultural exports worldwide. Regarding agricultural exports, India is placed seventh. In 2013, India exported agricultural goods worth about \$39 billion. (Anjum *et al.*, 2017) ^[10]

As stated by (Sanal *et al.*, 2017) ^[11]. There is significant potential for the development of India's agricultural industry given the ability of converting some of these crops into value-added goods. India has a large supply of raw materials, but it hasn't been able to fully use its industrial potential. There are several potential for processing businesses based on cereals, horticulture products, livestock products, and fish. Being an agrarian nation, India must create agro-based companies that utilize agricultural products to support long-term economic growth. The agricultural products with added value and processing have a lot of potential for export.

Farmers can earn more money by processing their goods since it extends the shelf life of their produce, adds value to it, and has a larger market. Processing also helps farmers use less of their raw agricultural products by reducing waste (Chengappa., 2004) ^[1]. Additionally, compared to wealthy countries, where roughly 98% of agricultural produce is processed, emerging countries only process about 30% of their agricultural output. The majority of people in developing nations depend on agriculture, hence the growth of the agro-processing sector can be extremely important in generating employment possibilities. A country's move from an agrarian to an industrial economy is crucial for its economic growth. Agroprocessing enterprises must be established before industrialisation can take place. Similar to this, it has been noted that the agricultural processing business is still in its infancy in other developing nations like India, processing only 8% of the nation's entire food supply. Additionally, the fact that only 3% of India's workforce is working in the country's agro-processing

industry highlights its underdeveloped state and enormous unrealized job potential.

Processed food export has gradually supplanted traditional food export. The key functions of the food processing industry in India were food preservation, packaging, and transportation. However, the sector's reach has grown throughout time as new markets and technologies have emerged. It has been making a variety of new products, including ready-to-eat meals, beverages, processed and frozen fruit and vegetable products, marine and animal products, etc. A modernised abattoir, cold storage facilities, food parks, packaging centres, value-added centres, and other post-harvest infrastructure are also included. Fisheries, Meat and Poultry, Consumer Food Items, and Dairy Products make up the majority of the Indian Food Processing Industry nowadays. Dairy goods have the biggest market share among them, accounting for around 37%. Agriculture's evolving position is a component of a structural and economic transition process. The reallocation of economic activity among the three major sectors (agricultural, manufacturing, and services) that goes hand in hand with the process of contemporary economic growth is referred to as structural change.

According to the growth of the agro-processing industry has the potential to enhance farmers' income in two ways:

- I. By giving poor farmers jobs in factories
- II. By buying agricultural products. They came to the conclusion that Thailand's agro processing business was developing in a way that benefited the poor. On the other hand, their findings seem to imply that as the economy expands and as new manufacturing sectors emerge, the contribution of the agro processing industry would decline. From the aforementioned, it can be inferred that the agro processing business only contributes significantly when an economy is in its early phases of industrialisation or during a recession.

1.1 Objective of the study

- Identifying potential obstacles to the manufacture and availability of these products, as well as those related to technology, productivity levels, and quality requirements.
- To assess the importance of agriculture and products with value added in export markets.
- Proposing an action plan to address potential barriers to the growth and export potential of these products, such as measures to ensure the availability of raw materials, the adoption of cutting-edge technology in both production and processing, and compliance with international market standards for quality and safety, among other things.

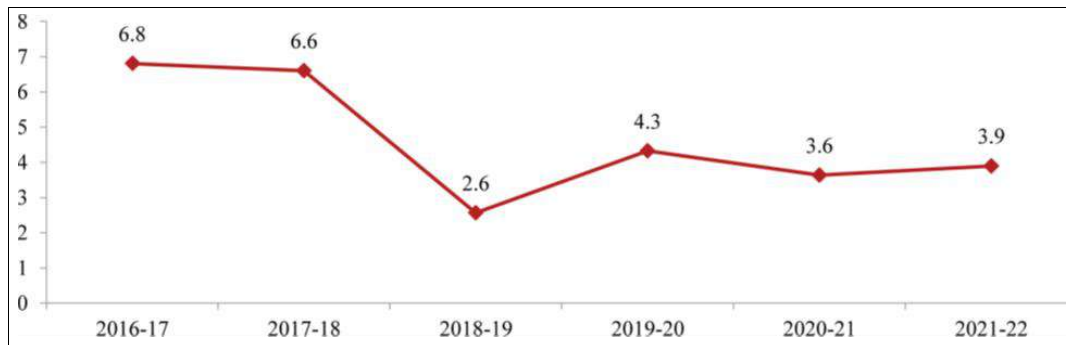
1.2 Growth in Agriculture

Increasing food availability as well as the expansion and diversification of agricultural goods have recently received a lot of attention. which are critical for enhancing the viability, profitability, and sustainability of agricultural goods. By comparing the returns of the value-added products to the difference between the value, cost, and other inputs of the raw product, the value addition is calculated. It's crucial to identify the agricultural items that can be added value to, as this would help the market and increase the producers' income. As a result of the advancement in agricultural output on a worldwide scale, many farmers are

now turning to value-added farming to ensure their survival in the fierce competition on the international markets. It has important consequences for producers, suppliers, processors, distributors, and merchants who aim to increase growth rates, market shares, customer happiness, and sustainability concerns in company planning (Hinai *et al.*, 2022) [20].

Regarding the fundamental nature of agriculture and its expansion, it is anticipated to contribute roughly 17.2% of the nation's GDP and account for roughly 11.7% of all exports. In fact, 60% of the entire area is used for agriculture, placing India slightly behind the United States in terms of available agricultural land. Major products like wheat, rice, potatoes, cashews, cotton, jute, beans, and many others are farmed with an eye toward export. Given that the majority of these products are based on agricultural products, India is currently the third-largest country in terms of food production and the fourth-largest country in terms of various products connected to health and wellness. India is the next-largest country. In addition, 69% of all industries in India are currently based on agricultural products, either directly or indirectly. India is the second-largest producer of fruits and vegetables in the world.

Any economy's growth depends heavily on international trade. Exports are a significant source of foreign currency and encourage spending, profit-making, and saving as well as the creation of jobs. The global food processing industry is expanding quickly, which in turn has increased demand for agricultural products. India takes advantage of the chance and exports a variety of agricultural goods, including grains, milk, sugar, fruits, vegetables, wheat, Basmati rice, lentils, and many more. During 2020–21, the agricultural and related industries had positive growth at a rate of 3.6%. The favourable monsoon and several government initiatives to increase loan availability, improve investments, build market facilities, encourage the development of infrastructure in the agriculture sector, and raise the supply of high-quality inputs to the industry made this feasible. A quick response in the shape of the Atma Nirbhar Bharat (ANB) Abhiyan and other growth-promoting programmes (ANB and other programmes are covered in the relevant parts) have further aided agriculture in achieving an enhanced growth of 3.9% in 2021–2022. The performance of the agricultural and related sectors during the last five and a half years is shown in Figure 1.



Source: First Advance Estimates of National Income, 2021-22

Fig 1: Growth of Agriculture and Allied Sectors (per cent)

1.3. Improving agricultural production, agricultural export and agro-processing

Increases in agricultural productivity allow countries to shift labour from the agriculture industry to other economic sectors. Traditional economists noted that the majority of developing nations have "dual" economies. Which calls for the transfer of agricultural labour to the non-agricultural sector. A major exporter of agricultural goods is the United States. It has dominated the global market for agricultural goods since the 1870s. A change from manual labour to mechanization and from traditional to industrial agriculture were both aspects of the agricultural revolution. Between 1860 and 1910, there were three times as many farms in the United States as there were agriculturally productive lands, which increased by more than 352 million hectares. The Agricultural Revolution, often known as the transition from subsistence to commercial agriculture in the United States through time with a concomitant rise in production, through options including effective land management, shared ownership, and modern technologies, subsistence farming changed and became a commercially successful business. Scale and technology enabled higher tillage productivity, which swiftly increased agricultural output and gradually led to the politics of the farming community to safeguard farmers' interests. This process was sparked by the industrial revolution. The Green Revolution helped boost agricultural

productivity significantly. The option to modernize traditional agriculture demonstrates the industry's capacity for expansion and its usefulness in highlighting wider development.

1.4 Structure and composition of Indian food processing industry

Food processing is the conversion of food into various forms or from raw components into food. Food processing often uses clean, harvested crops or butchered animal products to create enticing, marketable, and frequently long-lasting food items. India is the world's second-largest producer of fruits and vegetables, yet just 2% of the crop is processed. Approximately 44% of the 1,850 million tonnes of fruits and vegetables produced worldwide, according to the Food and Agriculture Organization (FAO), are lost in the supply chain between harvest and consumption. In the years 2021 to 22 India produced 107.10 million metric tonnes of fruits and 204.61 million metric tonnes of vegetables. In 2021–2022, 7.09 million hectares were planted with fruits, while 11.28 million hectares were planted with vegetables. In recent years, there has been an upsurge in the production and export of fruits and vegetables from India.

India exported fresh produce totaling US\$1.527.60 million during 2021 and 2022, consisting of fruits worth US\$750.7

million and vegetables at US\$767.01 million. A 3.0% CAGR was used to raise fruit production in India from 97.97 million tonnes in 2018-19 to 107.10 million tonnes in 2021-22. In addition, the production of vegetables increased by 3.8% CAGR to 204.61 million tonnes over this time. India has a considerable export potential thanks to its large production base. Fruits and vegetables were valued at Rs. 5,593 crore (US\$ 750.7 million) and Rs. 5,745.54 crore (US\$ 767.01 million), respectively, of the fresh produce exported, totaling Rs. 11,412.50 crore (US\$ 1,527.60 million) over the two-year period 2021-22. Exports of processed fruits and vegetables, including pulses, totaled Rs. 12,858.66 crore (US\$ 1,724.88 million) during this time, of which Rs. 8,308.04 crore (US\$ 1,114.19 million) and Rs. 4,550.62 crore (US\$ 610.69 million) were processed vegetables, including pulses.

The Directorate General of Commercial Intelligence and Statistics has released preliminary statistics showing that processed fruits and vegetables increased significantly between April and July 2022 compared to the same time the previous year by 51%, while fresh fruits and vegetables increased by 3.79%. In the equivalent months of the current fiscal year, fresh fruit and vegetable exports increased to US\$ 517 million from US\$ 498 million during this time. Exports of processed fruits and vegetables increased significantly in the first four months of the current fiscal year, from US\$ 441 million to US\$ 665 million.

2. Food processing

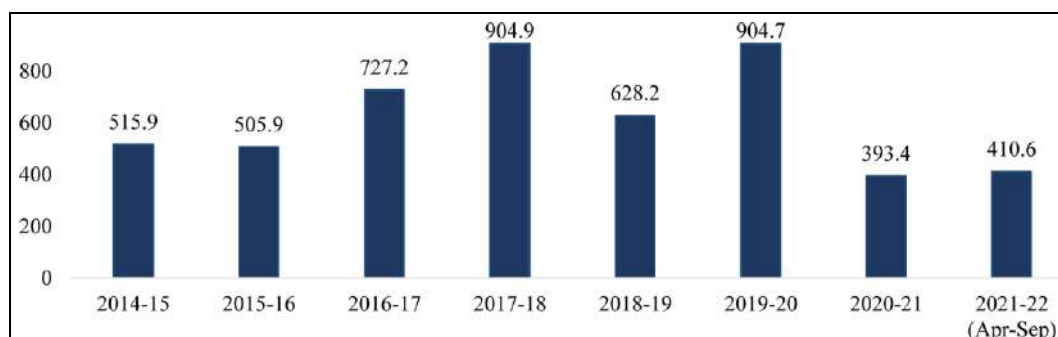
According to (Joshi *et al.*, 2007), between 1980 and 2012-13, the agricultural Gross Domestic Product (GDP) expanded at a 3% yearly rate, placing India third in terms of value behind China and the United States. Currently, the sector only provides 60% of the output for the majority of commodities, especially fruits and vegetables. India lacks world scale processing capabilities for a number of crops. In India, only 4% of fruits are processed, compared to 23% in China, 50% in Indonesia, and 70% in Brazil (Shivakumar., 2016). In addition to these, there is also the problem of lost

agricultural output. In India, post-harvest losses are excessively large (25-30 percent of total production).

India's food processing is still in its infancy because there aren't any large-scale facilities for food preservation, processing, packaging, or transportation. Only 2% of the total amount of food produced is processed for further consumption, despite the country's considerable export potential. Nevertheless, the industry has grown in importance with the introduction of new products to the market, such as ready-to-drink beverages, minimally processed food items, processed and frozen fruits and vegetables, technologies like controlled atmospheric storage, modified atmospheric storage, vacuum packing, freeze drying, etc., as well as the development of better markets for processed marine and meat products (Majumdar Kakali., 2013) [3].

Dairy, fruits and vegetables, grains and cereals, fisheries, meat and poultry, ready-to-eat food items, etc. are all included in India's processing industry. Among these, dairy products have increased their market share by roughly 37% as a result of a shift in consumption from cereals to a variety of milk products and its byproducts, which demonstrates the economy's rapid expansion. Fruit and vegetable processing businesses can be established without an industrial licence, similar to the dairy industry, and are fast growing in importance due to the seasonality of food crops (Sunnay T. and Sheikhwaheeda, 2013).

The eleventh five-year plan states that the food processing sector accounts for more than half of all food products in India. 100% FDI is allowed in FPI under the automatic approach. However, 100% FDI is permitted through the government-approved channel when trading in relation to food goods made and/or produced in India, even though e-commerce. 4.99 billion dollars in FDI equity were invested in the sector from April 2014 to September 2021. When compared to the same period last year, the FDI equity inflow into the FPI industry was US\$ 410.62 million from April to September 2021. Figure 2 shows annual FDI inflows into FPI.



Source: Based on data received from Ministry of Food Processing Industries (MoFPI).

Fig 2: FDI Inflows in Food Processing Sector (in US \$ million)

One sector that has the potential to increase the value of farm production, generate new employment opportunities, boost exports, and bolster the domestic supply chain is the food processing industry (FPI). India is ranked first in the production of milk, pulses, and jute, second in fruits and vegetables, and third in grains, with around 11.2% of the world's total arable land (Government of India., 2019) [15]. The extent of processing in India can be categorized as follows:

2.1 Primary Processing: Cleaning, grading, powdering

and refining of agricultural produce, e.g., grinding wheat into flour.

2.2 Secondary Processing: Basic value addition, e.g., tomato-puree, ground coffee, processing of meat products.

2.3 Tertiary Processing: High value addition products like jams, sauces, biscuits and other bakery products ready for consumption.

The Indian Government's Ministry of Food Processing

classifies the market into six categories: consumer foods, which includes packaged foods, drinks, and drinking water,

as well as dairy, fruits, and vegetable processing, grain processing, meat and poultry processing, and fisheries.

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 from egg powder |
| Consumer Foods | Snack food, namkeens, biscuits, ready to eat food, alcoholic and non alcoholic beverages |

Source: Ministry of food processing India, Annual report, 2004

3. Ministry of Food Processing divide different segment

3.1 Food grains/Pulses Milling

The primary milling of rice, wheat, and pulses is the most visible technique used to process food grains. India had severe food shortages in the early 1960s due to war and drought. The Green Revolution (GR) was implemented to address this issue in the late 1960s, which filled some production gaps in food, but the intense farming methods put a lot of strain on agro-ecosystems and small farmers were left out since they couldn't handle crop losses from natural disasters.

3.2 Processing of Fruits and Vegetables

In India, 70 million tonnes of fruits and vegetables are produced annually. Approximately 35 to 40 percent of the produce is thought to be lost during the processes of picking, harvesting, packing, transportation, storage, marketing, and consumption. Fruit pulps and juices, fruit-based ready-to-serve beverages, canned fruits and vegetables, jams, squashes, pickles, chutneys, and dehydrated vegetables are some of the popular processed foods. The sector has recently started producing frozen pulps and vegetables, frozen dried fruits and vegetables, fruit juice concentrates, vegetable curries in resealable pouches, canned mushrooms, and mushroom products.

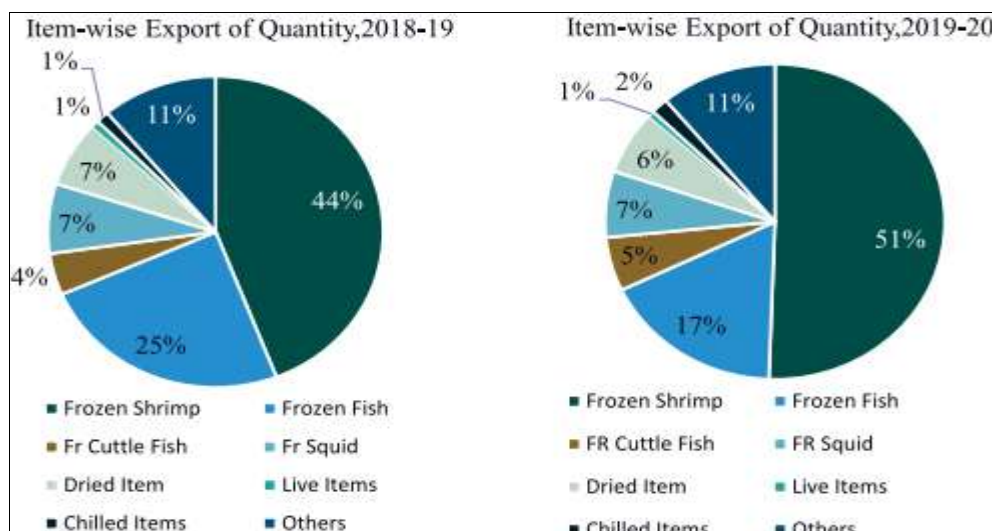
3.3 Milk and Milk Products

In India, 70 million tonnes of fruits and vegetables are produced annually. Approximately 35 to 40 percent of the produce is thought to be lost during the processes of

picking, harvesting, packing, transportation, storage, marketing, and consumption. Fruit pulps and juices, fruit-based ready-to-serve beverages, canned fruits and vegetables, jams, squashes, pickles, chutneys, and dehydrated vegetables are some of the popular processed foods. The sector has recently started producing frozen pulps and vegetables, frozen dried fruits and vegetables, fruit juice concentrates, vegetable curries in resealable pouches, canned mushrooms, and mushroom products.

3.4 Fisheries Products

After China, India is the world's second-largest aquaculture nation and the third-largest producer of fish overall. The Indian Blue Revolution showed how important the fishing and aquaculture industries are. The industry is regarded as a sunrise sector and is anticipated to have a big impact on the Indian economy soon. The transition from capture to culture-based fishing in inland fisheries has opened the foundation for a long-lasting blue economy. While inland fisheries and aquaculture have increased in absolute terms, their potential has not yet been fully realised. 3.72 million tonnes of marine fish are expected to be produced in the nation in 2019–20; these fish are primarily conventionally fished from waters no deeper than 200 metres. One of the best solutions to reduce hunger and dietary deficiencies is fish, which is a cheap and abundant source of animal protein. In order to drive the sector's development in a way that is sustainable, responsible, inclusive, and equitable, it is crucial that sustained and focused attention be provided to the fisheries sector through policy and financial support.



Source: Handbook on fisheries statistics, Department of Fisheries, 2020, Government of India

Fig 3: Percentage share of Item wise Export of Fisheries products (Quantity)

3.5 Meat and poultry products in India

The largest population of livestock is found in India. 75 billion eggs and 5.3 million MT of meat are annually produced in India. India is the world's top producer of goat and buffalo meat, respectively. Currently, just 6% of poultry is processed, compared to 21% of meat. India's poultry business is very vertically integrated and operates at a level of efficiency comparable to many western nations. Uttar Pradesh is the greatest meat producer in the nation, accounting for 23% of all meat output, followed by West Bengal at 12%. With 7% of the nation's total production, Andhra Pradesh is the third-largest meat producer. The top three states for poultry are Uttar Pradesh, West Bengal, and Haryana.

4. Constraints in Indian Food Processing Activities

The lack of suitable infrastructure, particularly rural road connectivity, the insufficiency of information and marketing links, the scarcity of electricity, and the absence of cold chain systems are major barriers to the expansion of the Indian food processing business. Less than ten percent of the food can be stored in the cold chain, and of those facilities, more than eighty percent can only store potatoes. Another significant restriction has two parts: upholding quality standards and maintaining productivity. The infrastructure for keeping unprocessed food is subpar to start. Storage standards are below average for the two primary types of storage-warehouses and cold storage. Inadequate monitoring, improper pesticide application, and inadequate ventilation can all contribute to pest infestations in grains.

5. Challenges to Indian Agricultural Exports

5 critical challenges contribute to India's relatively low rank among global agriculture exporters:

- Low productivity and high logistics costs
- Limited value addition
- Export promotion and branding challenges
- Non-tariff barriers
- Quality issues

Since independence, in agricultural export. India's agricultural exports in 1950–51 were only a little over Rs. 149 crore, but by 2020–21 they will amount to Rs. 305469 crore. India ranks 10th globally in the export of processed meat, 18th in the export of processed fruits and vegetables, 35th in dairy, and 61st in the export of poultry and eggs¹¹. India exports more commodities than value-added agricultural products. India's market share for processed goods is depicted in Exhibit 5. Only 16% of India's agricultural exports are processed foods, compared to 25% of US exports and 49% of Chinese exports that are value-added¹². Growing India's agricultural exports through crop-specific state-led plans 2020 lists a dearth of private sector investment and insufficient incentives as causes of the low value addition.

6. Classification based on the role of agriculture in GDP and employment

- **Agriculture-based countries:** Agriculture employs more than 50% of the total economically active population, and agriculture value added is more than 25% of GDP.
- **Pre- transition countries:** Still, agriculture employs

more than 50% of the total economically active population. The contribution of agriculture value added to the GDP decreases to less than 25%, but more than 10%.

- **Transition countries:** There is a decline in agricultural employment; this is now between 25% and 50%. Agriculture value added still contributes between 10% to 25% to the GDP.
- **Urbanizing countries:** Agricultural employment declines to between 10% and 25% of the total workforce. Agriculture value added as percent of GDP remains unchanged.
- **Developed countries:** Agriculture employs less than 10% of total employment and the contribution of agriculture to GDP drops to less than 10%.

7. Measures Taken to Enhance the Agricultural Exports

- To encourage trade infrastructure and marketing of agricultural products to increase agri-exports from India, the Trade Infrastructure for Export Scheme (TIES), Market Access Initiatives (MAI) Scheme, Merchandise Exports from India Scheme (MEIS), and Transport and Marketing Assistance were implemented.
- A 24*7 emergency response cell was created in APEDA/ Commodity Boards to help exporters in addressing their issues related to the movement of consignments/trucks/labor, issuance of certificates, lab testing reports, sample collection, etc.
- APEDA has developed, in-house, a platform for organizing virtual trade fairs (VTF) to establish contact between Indian exporters and importers. Two VTFs namely 'India Rice and Agro Commodity Show' and India Fruits, Vegetables & Floriculture Show have organized recently. APEDA has also planned to organize VTFs Indian Processed Food Show; Indian Meat and Poultry Show; Indian Organic Products Show during 2021-22.
- Cluster activation for promotion of agri-exports through APEDA for linking Farmers producer Organizations and exporters.
- EPFs for eight agricultural and allied products - grapes, mango, banana, onion, rice, nutri-cereals, pomegranate and floriculture have been constituted under the APEDA.

8. Export of agricultural products with regional characteristics

However, food production is the starting point that establishes the foundation of food availability, according to (Swaminathan *et al.*, 2011). According to Swaminathan, given that India's population is projected to exceed 1.5 billion by 2030, the country's task is to produce more and more with dwindling per capita arable land and irrigation water supplies and growing abiotic and biotic stressors. To feed its 1.15 billion people, India now produces roughly 230 million tonnes of cereals. The demands of farm animals are frequently disregarded when estimating food requirements. Currently, India's cereal production must treble by 2050 in order to meet the needs of the anticipated 1.8 billion people. They have irreplaceable positions and advantages in the global marketplaces because high-quality agricultural goods with regional characteristics have distinctive, differentiating, and considerable comparative advantages. Therefore, one of

the crucial and doable steps for China's agricultural exports in the future is to strongly promote the exports of high-quality agricultural goods with specific regional characteristics. China has focused on boosting the production and trading of regionally distinctive agricultural products at the moment, but it has not yet developed a significant quality and brand advantage in the global markets. Therefore, the governments should adopt corresponding policies and measures to promote the production and foreign trade of export-oriented regional specialty agricultural products.

9. The Globalization of Food and Agricultural Trade

People and agri-food systems are linked by trade. It contributes significantly to the availability of sufficient, varied, and nutrient-dense food for consumers around the world and supports the livelihoods of farmers, workers, and merchants in the global agricultural and food sector. The volume and calories of the food and agriculture commerce have more than doubled since 1995. The use of natural resources, such as land and water, for the production and export of food and agricultural goods has also risen. Between the initial years of the new millennium and 2008, commerce in goods and services generally gained importance in the global economy, and the proportion of production that was exchanged rose quickly. However, after the financial crisis in 2008, this process of globalization-as indicated by the percentage of goods and services exported in the global gross domestic product (GDP)-came to an end. Despite the fact that manufactured goods are still traded more frequently than food and agricultural products, patterns of globalization in these sectors are similar.

10. Government Intervention

Since liberalization, the Indian government has announced several programmes and incentives for the food processing industry as a high priority sector. Under the automatic route for processed food goods, FDI up to 100% in beverages is allowed with the exception of alcoholic beverages and a few other banned categories. The majority of processed food products were exempt from excise taxes and licencing requirements. Food processing industries were acknowledged as a priority area for obtaining bank credits in 1999. India's government started working on creating an agricultural export zone in 2001. (AEZ). The major goal is to determine the agricultural product's potential in a nearby area. The nodal organization for promoting the establishment of AEZ was established as APEDA.

11. Conclusion

To improve the food processing sector in India, the Government of India aims to boost the growth in the food processing sector by leveraging various incentives at the central and state government level along with a focus on supply chain infrastructure. India's food sector has emerged as a high-profit and high-growth sector due to its potential for value and particularly within the food processing industry. The decreasing trend in the production of agriculture product largely depends the value added agro products in export market. But the processing of agro products divert the market in the national and international level and create multi-dimensional opportunity to agriculturist and agro processing industries in India. Processed food is still small

because of that the exporters fail to achieve economies of scale which indirectly influencing the world trade share of processed food. The key to the GDP of India basically to some extent depends on agriculture and value added products in India.

12. References

1. Chengappa PG. Emerging trends in agro-processing in India. *Indian Journal of Agricultural Economics*. 2004;59(1):1-21.
2. Singh SP, Tegegne F, Ekanem EP. The food processing industry in India: Challenges and opportunities. *Journal of Food Distribution Research*. 2012;43(1):81-89.
3. Majumdar K. Export Performance of Processed Food in India. *Global Journal of Management and Business Studies*. ISSN 2248-9878. 2013;3(3):261-270. <http://www.ripublication.com/gjmbs.htm>
4. Swaminathan MS, Bhavaniz RV. Food production & availability - Essential prerequisites for sustainable food security. *Indian J Med Res*. 2013 Sept;138:383-391.
5. Arendonk VA. The development of the share of agriculture in GDP and employment, 2015.
6. A strategy paper on augmenting export of value added products from India (APEDA), 2015.
7. Kumar S, Sharma A. *Agricultural Value Chains in India: Prospects and Challenges*, 2016.
8. Honoré Samuel Ntavoua. Impact of agricultural exports on economic growth in Cameroon. *Int. J Agric. Extension Social. Dev*. 2021;4(1):49-53.
9. Sayef B, Mohamed M. The Effect of Agricultural Exports on Economic Growth in South-Eastern, 2017. <https://mpira.uni-muenchen.de/83810/>
10. Anjum S, Khan A. Changing Pattern in India's Agricultural Exports under WTO. *Economic Affairs*. 2017;62(2):253-262, DOI: 10.5958/0976-4666.2017.00007.9
11. Sanal B, Krishna Kumar S. An Analysis of Value Addition. In *Agro Products and Its Impact on The Export Potentials of India*. *International Journal of Management*. 2017;8(4):23-30. <http://iaeme.com/Home/issue/IJM?Volume=8&Issue=4>
12. Kumareswaran T, Jolia P, Maurya M, Maurya A, Abbasmandri S, Kamalvanshi V. Export scenario of Indian agriculture. *Journal of Pharmacognosy and Phytochemistry*. 2018;8(1):2653-2656.
13. Chukwujekwu A Obianefo, John N Ng'ombe, Obiageli B Gbughemobi, Nma O Okoroji. The effect of Anambra state value chain development programme partnership with Nigerian Agricultural Insurance Corporation (NAIC) on farmer's production security and risk management. *Int. J Agric. Extension Social Dev*. 2021;4(2):51-58.
14. Courage Mlambo, Peter Mukarumbwa & Ebenezer Megbowon. An investigation of the contribution of processed and unprocessed agricultural exports to economic growth in South Africa, *Cogent Economics & Finance*. 2019;7(1):1694234, DOI:10.1080/23322039.2019.1694234 <https://doi.org/10.1080/23322039.2019.1694234>
15. Opportunities in Meat and Poultry Sector in India, Ministry of Food Processing Industries Govt. of India. Ministry of Fisheries, Animal Husbandry and Dairying, 2019, Government of India. <https://dof.gov.in/inland-fisheries>.

16. Handbook on fisheries statistics, Ministry of Fisheries, Animal Husbandry and Dairying, Government of India. <https://dof.gov.in/inland-fisheries>. 2020.
17. Singh AK, Upadhyaya A, Kumari S, Sundaram PK, Jeet P. Role of Agriculture in making India \$5 trillion Economy under Corona Pandemic Circumstance: Role of agriculture in Indian economy. *Journal of Agri Search*. 2020;7(2):54-58.
18. Long Y. Export competitiveness of agricultural products and agricultural sustainability in China. *Regional Sustainability*. 2021;2:203–210. <https://doi.org/10.1016/j.regsus.2021.09.001>
19. Kumar V. Trends and Performance of India's Agricultural Trade in the Midst of COVID-19 Pandemic. *Indian Journal of Agricultural Economics*, 2021, 76(3).
20. Hinai AA, Jayasuriya H, Pathare BP, Shukaili TA. Present status and prospects of value addition industry for agricultural produce. 2022;7:207–216. <https://doi.org/10.1515/opag-2022-0084>
21. Food and Agriculture Organization (FAO). *The State of Agricultural Commodity Markets 2022. The geography of food and agricultural trade: Policy approaches for sustainable development*. Rome, FAO, 2022. <https://doi.org/10.4060/cc0471en>
22. Parihar S. *Investigating growth, instability and concentration of Indian Agricultural export*. Indian institute of management Indore, 2019.
23. Enbaby HE, Figueroa JL, Didi HE, Breisinger C. *The Role of Agriculture and the Agro-processing Industry for Development in Egypt*, 2016.