



# Opportunities in Food Processing Sector in Uttar Pradesh

February 2023





## Message

Food processing industries exhibit two critical aspects of human entrepreneurship - one is agricultural production, and another is industrialisation. This synergy helps the nation's economy to grow and sustain. India is a country with immense biological diversity and ancient cultural heritage. Our nation has 14 agro-climatical zones, allowing us to grow various food crops, from grains to fruits, herbs and spices.

Uttar Pradesh (UP) is a state with abundant resources and agricultural biodiversity which is favourable to growing plenty of food crops. Moreover, the state holds the potential to expand the Food Processing Industry with the enhancement of processing and value addition. There is a positive inclination for investible opportunities in the state as it holds 3rd rank as the hub of MSMEs in India.

The state has a stronghold on various food processing and value-addition routes that benefit the farmers and local industries. One of the significant producers of grains, different vegetables, and milk, the state is witnessing an expansion of processing units and mega food parks that are a vital enabler for scaling up the value chain of these commodities. The state is welcoming integrated plants for food processing and cold chain development, which is expected to double the export revenue for the state, contributing to the national economy.

Given the significance of the food processing sector in the state of Uttar Pradesh, ASSOCHAM, jointly with Nangia Andersen Pvt. Ltd. LLP, has prepared this report highlighting the importance of the food processing industry. We acknowledge the efforts made by the experts in preparing this report, which will be released at the National Conference 'Creating Vibrant Food Processing Sector: Tapping Potential and Investible Projects in Uttar Pradesh' at Varanasi, Uttar Pradesh.

We hope the report will provide helpful information and insights to the policymakers, industry constituents and other stakeholders and will aid in strengthening the Indian food processing industry while moving towards the vision of a Self-Reliant India.

**Deepak Sood**  
Secretary General  
ASSOCHAM

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# Executive Summary

01

## Executive Summary

### India Food Processing Market

India has always been a leading producer of a wide variety of agricultural products, including cereals, fruits, vegetables, livestock, and marine products. According to the most recent FY22 data from the Directorate General of Commercial Intelligence and Statistics, its agricultural exports increased by nearly one-fifth (19.92%) to cross \$50 billion. The pandemic has increased acceptance of processed foods and customer demand for more ethical and environmentally friendly products is growing thanks to social media and digital information. In the post-Covid-19 era, India has the ability to become the centre of the world's food supply and increase its export share. Development of scale, quality, and cost-effective export capabilities, that fulfil international certification criteria, is crucial for the industry to remain competitive.

### Evolving landscape

Due to changing demographics, a fast-paced lifestyle, lack of work-life balance, and other factors, consumption patterns have changed. Local firms have shown flexibility in creating new foods, experimenting with the current cuisines, and offering food services, thereby gaining a larger share of the consumer rupee. On the supply side, there is a lot of potential in initiatives like the 10,000 FPOs scheme, enabling access to fair and lucrative marketplaces. Technology could help in making the supply chain more efficient and interconnected, providing end-to-end traceability.

#### Infrastructure Development in Food Processing Sector

The long-term goals in terms of plugging the infrastructure gaps should focus on:

- Strengthening production clusters and FPOs and connecting/connecting farmers to the market, focused interventions can increase the value that farmers realise from their land.
- Reduction of post-harvest losses by construction of farm gate infrastructure, adequate agri-logistics, and storage capacity connecting consumption centres.
- Increasing the capacity for food processing and adding value along the value chain by connecting businesses with specified production clusters.

### Sector Specific Government Policies and Initiatives

Some of the government initiatives include changing the FSSAI's product-by-product approval process to one that is based on ingredients and additives, recognising cold chain and agro-based processing facilities as agricultural activity under the Priority Sector Lending standards, and creating a Special Food Processing Fund worth Rs. 2000 crore to provide loans at competitive rates for the establishment of Mega Food Parks and processing facilities within them. PM Kisan SAMPADA Yojana for creation of modern infrastructure with efficient supply chain management from farm gate to retail outlet, and Nivesh Bandhu - an investment portal for all the investors who are looking to invest in India in the food processing sector, are some of the other important initiatives.

### Sector Sustainability & Impact of Technology

- Eco-friendly packaging - creative packaging alternatives using biodegradable materials like fish skin, seaweed, and crop residues.
- Reducing Food Wastage - by streamlining procedures, measuring food losses during the processing, appropriately trained staff to look for such food-loss causes and mitigate them.
- Efficiency Improvement - smart metre deployment, energy efficient and sustainable water management systems etc.
- Using Sustainable Raw materials - by making sure that food processors and manufacturers ethically acquire "high-risk" products.
- Technology - finds use in farm monitoring (robotics and drones); data analysis using historical data on soil quality, precipitation etc.; farm management systems (sensors, robotics etc.); and also in exploring alternate farming techniques like hydroponics, protected agriculture, vertical farming etc.

## Overview of India's exports of food products - Potential of Uttar Pradesh

Overall, agricultural products exported from India saw 19.92% growth and reached \$50.21 billion (Import Export Federation, 2022). Uttar Pradesh ranks amongst top 10 states by value of exports owing to a multitude of resources coupled with diverse production and value addition networks. A strategic alliance between organisations that promote exports and industrial infrastructure could increase the state's export potential. More needs to be done with respect to the support and processing/preservation infrastructure, in addition to the cold chains. From the perspective of skill development, state universities need to be encouraged to create both vocational and research-based courses in agro-processing, biotechnology, use of ICT in agriculture and linked fields etc. In capacity building efforts, as a vital first step, the state has developed a procedure for assessing the existing clusters and One District One Product (ODOP), identification of food processing zones etc., are some other significant steps in this direction. To fully exploit this potential, the state will need to make investments in raising the level of labour expertise, and promoting private investment in the food processing sector.

## The case for inclusive growth – Strengthening institutional and policy environment, processes and incentives in Uttar Pradesh

Industrial Investment & Employment Promotion Policy of Uttar Pradesh aims to make use of the state's natural resources and establish a position while stimulating the state's long-term, all-encompassing, and adjusted financial growth. The state has liberalised its "Export Promotion Policy" and also brought "Uttar Pradesh I.T. & Start-up Policy". It has to now concentrate on risk-based regulations (RBR) and an impact assessment framework in order to further increase business accessibility. Additionally, the government intends to promote the development of MSME in the state under the guidelines of MSME Policy 2022 and emphasis is being given on industrial friendly policies like ODOP, Chief Minister Youth Self Employment Scheme etc. A comprehensive plan that addresses the needs of all the value chain and ecosystem players is required for inclusive growth in Uttar Pradesh.

## Uttar Pradesh - Vision, Strategy and Initiatives to Promote Food Processing Sector

In order to support the food processing industry, Uttar Pradesh has introduced a number of measures, including the Uttar Pradesh Food Processing Policy 2018, food processing parks, Cold Chain projects, and MSME Facilitation Centers. These programmes seek to increase investment, employment opportunities, and the development of the state's food processing industry. It has also taken steps to develop food safety regulations and standards to ensure food safety and quality in the industry. However, the strategy should now shift to enhance the entire food supply chain, combining infrastructure development, investment promotion, and policy measures.





India Food Processing  
Market - Overview,  
Performance &  
Impact of COVID-19

02



## India Food Processing Market

India is the second-largest food producer and has the potential of being the largest in the world. The growth of the economy is significantly aided by the food industry, with a market size of USD 866 billion in 2022, food and food items are the largest consumption category in India. It is anticipated that the domestic food market will expand by almost 47% between 2022 and 2027, reaching USD 1274 billion by that year.

The food market includes a wide variety of both fresh and prepared items. The market is segmented into the following categories: Convenience food, confectionery & snacks, Baby food, Pet food, Meat, Fish & Seafood, Vegetables, Fruits, Bread & Cereal Products, Oils & Fats, Spreads & Sweeteners, Sauces & Condiments, and Dairy Products & Eggs. Although food accounts for a considerable portion of household spending, its relative relevance to other goods declines as income rises.

World's largest producer of Spices, Milk and Pulses

World's second largest producer of Tea and Sugarcane

World's second largest producer of Foodgrains, Fruits and Vegetables



- Revenue in the Food market amounts to US \$ 963 bn in 2023. The market is expected to grow annually by 7.23% (CAGR 2023-2027).
- The market's largest segment is the segment Bread & Cereal Products with a market volume of US \$ 173.90 bn in 2023.
- In global comparison, most revenue is generated in China (US \$ 1,386 bn in 2023).
- In relation to total population figures, per person revenues of US \$ 678.70 are generated in 2023.
- In the Food market, 1.2% of total revenue will be generated through online sales by 2023.
- In the Food market, volume is expected to amount to 663,725.9 mkg by 2027. The Food market is expected to show a volume growth of 6.0% in 2024.
- The average volume per person in the Food market is expected to amount to 419.25 kg in 2023.

Processed food acceptance has increased as a result of the COVID-19 pandemic. The demand for processed foods, especially in Rural and peri-urban areas, small towns and tier 2 cities, is anticipated to continue to be driven by RTE segment, snacks, and health items. Traditional retail is being replaced by e-commerce and direct-to-consumer sales as producers relocate their supply chains in the wake of COVID-19 and deliver goods to customers' doorsteps. It is anticipated that the industry would transition to a structured form. To formalise the unorganised micro participants in the food processing industry, the PM FME Scheme has been introduced. This will hasten the desired transition from an ad hoc to an organised framework.

Consumer demand for more ethical and ecological products is undoubtedly an element which is fast picking, and businesses can increase sales by emphasising commitments and effective product marketing techniques. The Generation-Z no longer views sustainability as a selling factor but as an expectation, and they are willing to avoid any products that fall short. The majority of purchase decisions, however, continue to be heavily influenced by price and personal preference, and not all consumers are equally knowledgeable, willing and/or able to pay the premium that sustainable/organic foods command.

Social media and digital information have increased public awareness of the actions of food firms. They can engage in direct communication with them and participate in advocacy efforts for causes that matter to them, which are frequently organised via social media or civil society initiatives. Stakeholder management and social media's influencer culture both play significant roles in the food sector today.

India has the potential to become the global food centre and boost its export share in the post-Covid-19 age. India's exports to the top 10 global food markets have a lot of opportunity to grow, especially in markets where it is underrepresented. Dairy and the meat and marine industries have significant export potential. For the industry to be competitive, it is essential to develop scale, quality, and cost-effective export capabilities that meet international certification criteria.

## GROWTH DRIVERS

01

### Agri-commodity hub

Largest producer of several agri-commodities

02

### Huge consumer base

1.3 bn consumers with increasing demand for branded food

03

### Strong economy

India is the fastest growing largest economy in the world

04

### Conductive policies

Proactive government policies with attractive fiscal incentives

05

### One District, One Product (ODOP)

Under ODOP scheme, 135 district specific unique products for 728 districts have been identified across the country.

06

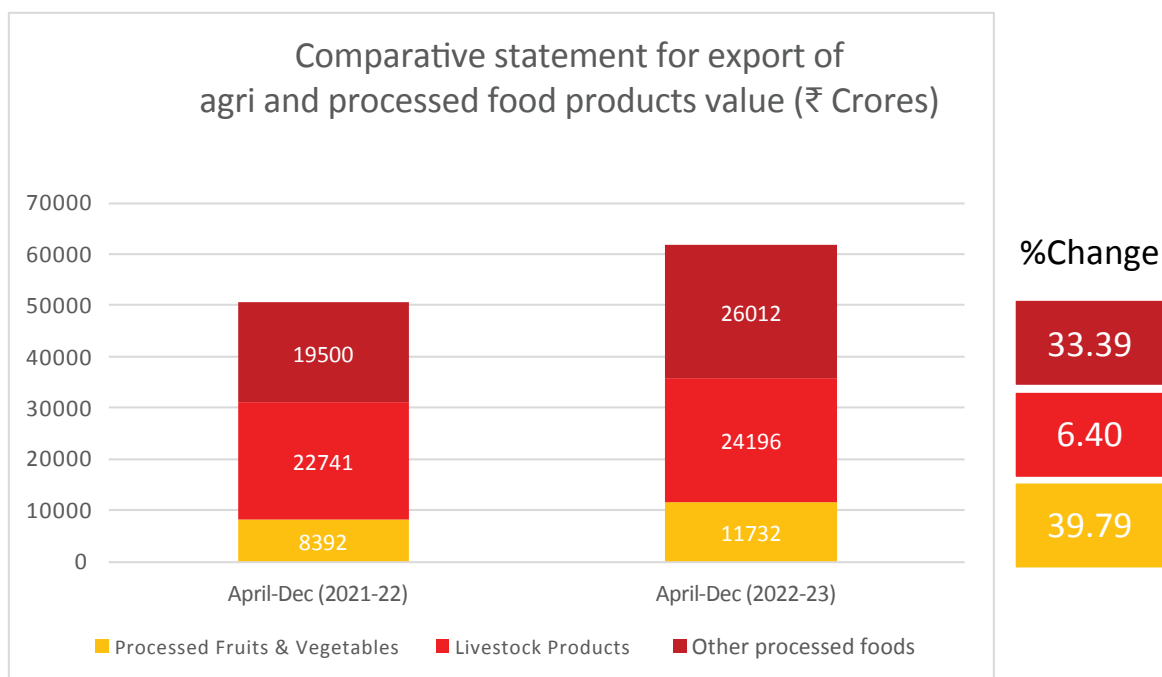
### Growth of organised retail and Private Label Penetration

Greater integration with the global economy.

07

### Demand for Functional Food and Nutraceuticals

Changing lifestyle and food habits.



Players in the food processing industry may be encouraged to increase their processing capacity and meet the everchanging demand by the Production Linked Scheme (PLI) Scheme. The food processing sector is preparing for the challenge and is probably going to ramp up investment in product and regional expansion. For complementary businesses like food ingredients, food processing technology, logistics and packaging, there is enormous opportunity too.

In the last decade, startups in the food and food technology field have shown a tremendous boost. The majority are either in the agri-tech or food retail & service sectors. Innovative goods with a wellness, health, or nutrition focus are likely to find a big domestic market opportunity. The landscape is evolving fast.

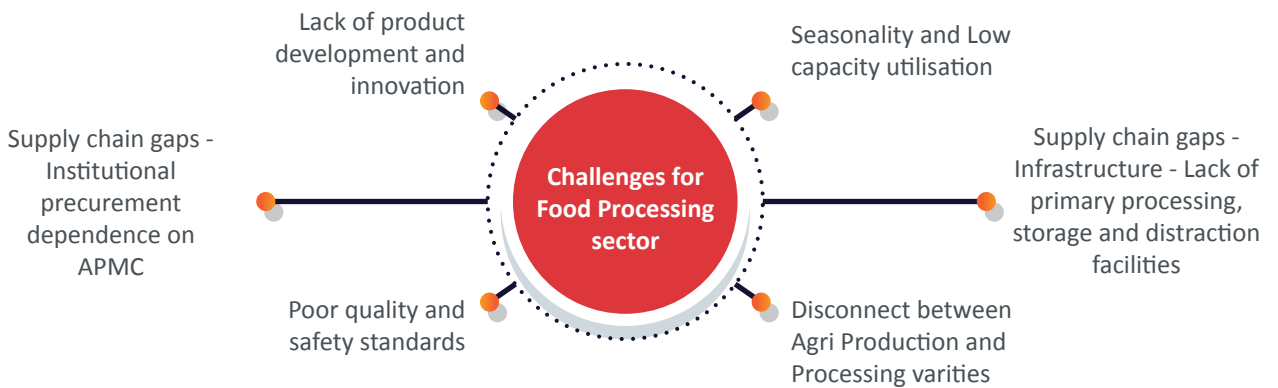


# Evolving landscape - Key Trends in the Indian Food Processing Industry

03

## Evolving landscape - Key Trends in the Indian Food Processing Industry

A well-established and matured food processing industry with a high level of processing reduces food waste, enhances value addition, encourages crop diversification, provides better returns for farmers, supports employment, and boosts export revenues. Additionally, this industry can deal with important problems like food insecurity, food inflation, and feeding the public with wholesome, nutritional food.



### Impact of Pandemic



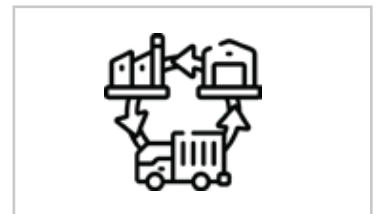
#### Production

- Labour shortage/migration
- Fluctuations in Raw Material Supply
- Halted/Delayed Agri Operations
- Glut & Deficit - Food Islands



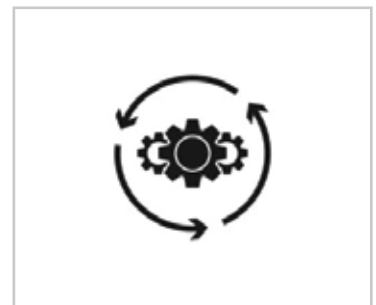
#### Supply Chain

- Piled up Inventories/Perishables
- Reduced HORECA demand
- Shift towards organic and healthy food
- Poor Warehousing Capabilities



#### Processing

- Labour shortage/migration
- Disrupted Factory Operations
- Increased demand for value added products vs. low capacities
- Shift in demand from non-sustainable to environmentally sustainable food and food production systems



## Trends

Consumption patterns have changed as a result of shifting demographics, a fast-paced lifestyle, a poor work-life balance, and other factors. In order to include health into daily consumption, people are increasingly looking for healthier food alternatives. Consumption patterns have changed as a result of a higher proportion of young people in the population, as well as an increase in dual income households and nuclear families. Convenient eating options are required because of long and demanding work hours, growing commute times, the need to socialise, and high disposable income. E-grocery and meal delivery have increased in India due to consumer demand for convenience. Additionally, some businesses have begun offering food kits and semi-prepared food, which is becoming more and more popular among urban residents.

On the supply side, initiatives like 10,000 FPOs scheme hold a lot of promise. FPOs connect producer groups to marketing opportunities through market aggregators, enabling access to fair and lucrative marketplaces. For processing firms, FPOs also reduce supply chain complexity because they only need to deal with one FPO rather than a huge number of suppliers. On the other hand, local enterprises have developed foods that take into account the distinctive culinary regions, tastes, and product preferences. Local brands have demonstrated flexibility in developing new products and experimenting with existing ones to appeal to these varied palate preferences. Hyperlocal delivery methods give disorganised players a platform to play in the regulated market by working together. Because of the price reduction, price-sensitive consumers who previously chose to purchase non-branded goods are now thinking about purchasing private labels in order to switch to branded goods without impacting their household budgets. The trend of businesses launching services is also on the rise. By diversifying into services, product-oriented businesses can avoid retailers and concentrate on winning over customers' loyalty and gaining a larger share of their spending instead. Multiple points of contact with customers via service models results in a possibly stronger and more enduring relationship. Additionally, it gives businesses the chance to learn more about the tastes and purchasing habits of their customers.

With the use of technology, the product may reach the market more quickly if wholesalers and the manufacturing facility can communicate fluidly. This allows for the maintenance of "freshness." The numerous interconnected components of the supply chain should provide end-to-end traceability. A higher degree of adaptability may enable the creation of personalised products for each customer and the speedy modification of product specifications. To forecast consumer demand and benefit from increased efficiencies, the information acquired will be utilised. There should be less demand-supply imbalances as a result of this. Energy utilisation could also be monitored and advanced to previously unheard-of levels.





# Infrastructure Development in Food Processing Sector

04

## Infrastructure Development in Food Processing Sector

There is a shortage of appropriate infrastructure, such as modernised abattoirs, cold chains, packaging centres, and value-added centres. The sector can be energised by improvements to the overall infrastructure. To address these infrastructure problems with effective supply chain management from the farm gate to the retail outlet, Since 2017–18, the Pradhan Mantri Kisan Sampada Yojana (PMKSY) umbrella programme has been put into effect nationwide by the Ministry of Food Processing Industries (MoFPI). It gives the country's food processing industry a significant boost, aids in giving farmers better prices, generates a significant amount of employment opportunities, particularly in rural regions, reduces agricultural waste, ups processing levels, and boosts exports of processed goods.

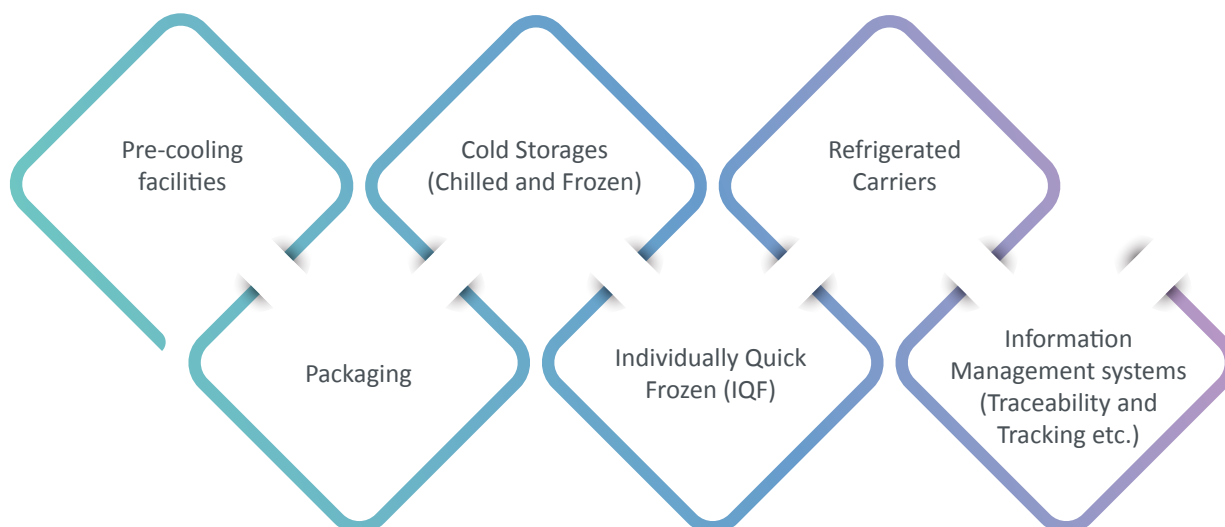
The long-term goals in terms of plugging the infrastructure gaps should focus on:

- Strengthening production clusters and FPOs and connecting/connecting farmers to the market, focused interventions can increase the value that farmers realise from their land.
- Reduction of post-harvest losses by construction of farm gate infrastructure, adequate agri-logistics, and storage capacity connecting consumption centres.
- Increasing the capacity for food processing and adding value along the value chain by connecting businesses with specified production clusters.

### Cold chain

Cold chain is a logistic system that provides a series of facilities for maintaining ideal storage conditions for perishables from the point of origin to the point of consumption in the food supply chain. The chain needs to start at the farm level (e.g. harvest methods, Pre-cooling) and cover up to the consumer level or at least to the retail level. A well-organized cold chain reduces spoilage, retains the quality of the harvested products and guarantees a cost efficient delivery to the consumer giving adequate attention for customer service. The main feature of the chain is that if any of the links is missing or is weak, the whole system fails.

The Cold chain logistics infrastructure generally consists of:





## Cold Chain Components

The term “cold chain” and the components thereof, refer to steps from harvest to consumption that extends the natural shelf life of a product by controlling temperature. Typical components of a non – horticulture cold chain may include frozen storage, value addition through blast freezers, and cold storage distribution

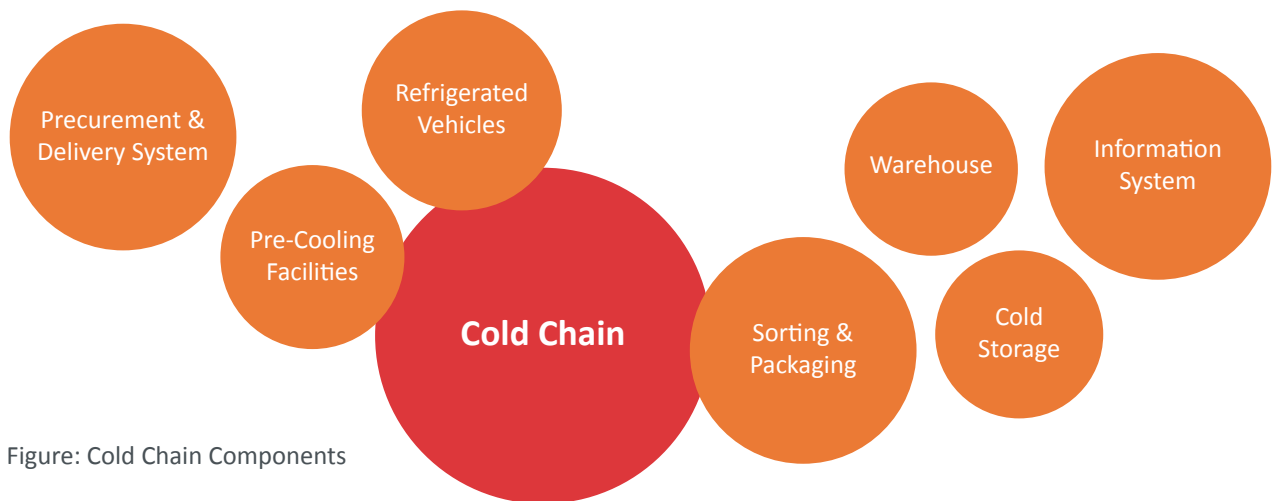


Figure: Cold Chain Components

## National Scenario of Cold Chain Infrastructure

The total value of India’s cold chain industry is currently estimated at USD 3 billion and reportedly growing at an annual rate of 20-25 per cent. The total value for the industry is expected to reach at USD 8 billion by 2020 through increased investments, modernization of existing facilities, and establishment of new ventures via private and government partnerships.

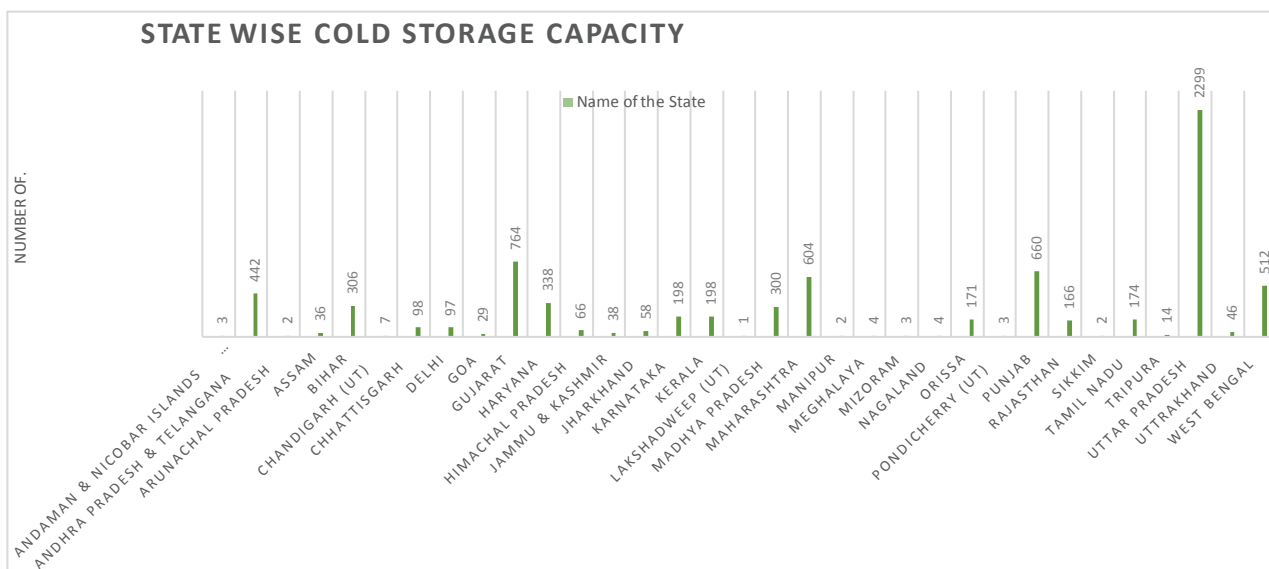
According to the government’s estimates India has 7645 cold storage facilities. Although the combined capacity of the cold storage facilities is 3.4 million MT. The bulk of the current 30%–40% loss witnessed in the segment at present is not due to the lack of a cold chain (or refrigerated trucking) in the country, but on account of multiple structural factors larger than the cold chain.

Industry experts believe that controlled atmosphere storage facilities and other cold storage facilities with the technology for storing and handling different types of fruits and vegetables at variant temperatures would have a very good potential market in India.

Another major constraint is the lack of refrigerated vehicles for movement of perishables produce (with the exception of milk. The percentage of movement of fruits and vegetables through cold chain in U.S. is around 80 to 85 per cent, India is almost negligible. Currently, most of the refrigerated transport in India is operated by small, non-integrated firms that do not make use of state-of-the-art technology or management practices.

## Cold Storage Capacity

According to National Horticulture Board (NHB) under Department of Agriculture, Cooperation & Farmers Welfare, 75% of the total cold storage capacity in the country was used for the purpose of storage of horticulture crops including potato. Out of total production of potatoes in the country, 75% was stored in cold storages for long term storage at farm gate. Further, 95% of cold storages in the country were owned by private sector, 3% by cooperatives and remaining 2% were under Public Sector Undertakings.



## Growth Drivers



### Growth in organized retail

- The increasing working population has lesser time to cook at home and has high purchasing power.
- Acceptance of frozen food products and increase in income levels.



### Growth in processed food sector

- Marked improvement in consumer preferences for processed foods.
- Increasing demand in refrigerated dairy products due to their nutritive value.



### Government initiatives

- Incentivizing investment into the development of cold chain infrastructure.
- Incentives include subsidy incentives, fiscal incentives etc.



## Domestic Potential of Cold Chain

Products which come under the frozen food industry are fruits, vegetables, fisheries, milk products, meat, poultry and other packaged and convenience foods. Although it is a huge producer of food products, India still has immense untapped potential in the frozen food export industry. The demand for Indian recipes from the Indian diaspora settled across the globe has served as an impetus to development of the frozen food industry in recent years. The Indian cold chain market is highly fragmented, with over 3,500 companies in the whole value system, with organized players contributing between eight and 10 per cent of the cold chain industry market. Indian Frozen Food market for 2019 is expected to double with regard to the market of 2014. Frozen Vegetables market share is growing year on year, it is having the second highest market share in India Frozen Food Market. The Indian cold chain industry is expected to grow at a compound annual growth rate (CAGR) of 28 per cent over the next four years, is poised to reach a market size of \$13 billion in 2017-2018 through increased investments, modernization of existing facilities, and establishment of new ventures via private and government partnerships.

## Major Challenges for the development of Cold Chain Industry in India

In India, the Agri-supply chain is poorly integrated, posing challenges at each step. There are huge gaps in the system, both in terms of capacity and integration. Critical linkages like reefer transport are almost non-existent. Despite the obvious need for improvement and new government initiatives to stimulate growth, private investment is in short supply for some of the following reasons:

- **Lack of knowhow and trained manpower** – Despite the increasing number of infrastructure projects, there is a severe lack of manpower with appropriate skill sets to handle modern technology.
- **Lack of backward & forward linkages to supplement cold chain** – Cold chain in itself is not a complete solution to address quality and marketability issues concerning perishable products. The commodities which are transported and stored in the cold chain should have enough market value to absorb the added cost.

- **Lack of trust concerning viability of cold chain projects** – Cold chain projects are still seen by investors as high on capital, low on volume and requiring a long payback period for the investment. Cold chain projects also involve aggressive marketing and investment on backward and forward linkages. This, coupled with a dearth of successful demonstration projects in the sector is keeping potential investors away.
- **High capital investment** – As noted above, a high level of capital is required at the initial stage of building a high-end cold chain facility, thus reducing the attractiveness of this type of investment. The lack of institutional investors has not helped to improve the sector. The result, to date, has been a disorganized approach to establishment of a truly efficient cold chain network of facilities and transportation companies.
- **High operational costs due to high cost of power** – Unlike the agricultural sector which is offered highly subsidized power tariffs by the Government of India, the cold chain industry does not enjoy this status and is instead subjected to industrial power tariffs. This significantly increases the operational cost for cold chain operators and act as a major deterrent for growth.
- **Problems of optimization in reefer transport** – Lack of two-way cargo movement/ back haulage, interstate barriers, intercity/state taxes, and bad roads are some of the issues which increase operating costs, delay timely deliveries and reduce the efficient utilization of fleets.
- **Low Produce Volume** – May be because of lack of pack houses to feed the supply chain.
- **CLU Certification and lack of Service Tax Exemptions** – Change of Land Use required for conversion of agricultural land. No exemption to cold chain sector in service tax.

**Table: Infrastructure Bottlenecks**

Cold Chain Logistics Infrastructure	Bottlenecks
<b>Manufacturing/ Imports/ Company Storage</b>	<ul style="list-style-type: none"> <li>• Lack of in house infrastructure to manage cold chain efficacy</li> <li>• Lack of MIS tracking system on periodic intervals</li> <li>• High infrastructure cost</li> <li>• Uneven distribution of cold storage capacity</li> </ul>
<b>Primary Transport (By air, Reefer, Refrigerated Railway Wagons/ Cargo Containers)</b>	<ul style="list-style-type: none"> <li>• In transit hubs are not available</li> <li>• Lack of domain knowledge</li> <li>• Lack of airport hubs/ lower volumes</li> <li>• Long transit time, thus efficacy of produce is reduced significantly</li> </ul>
<b>Distributors/ Company Storage</b>	<ul style="list-style-type: none"> <li>• Constraint in trainings, packaging solutions, investment, power cost</li> </ul>
<b>Secondary Transport (Reefer, Refrigerated Railway Wagons/ Cargo Containers)</b>	<ul style="list-style-type: none"> <li>• Lack of transport solutions</li> <li>• Sense of ownership</li> <li>• Low volumes/ Packaging solutions</li> <li>• Investments/ Power cost</li> <li>• Absence of in transit storage</li> </ul>
<b>End Customer</b>	<ul style="list-style-type: none"> <li>• Storage infrastructure</li> <li>• Lack of product knowledge</li> <li>• Ownership and integrity issue</li> </ul>

## Indian Cold Chain Infra-Gap Analysis

The major cold-chain infrastructure components and their desirable location of establishment based on a primary survey done by NCCD in 2016 of major consumption centres, production centres and available data on records with various departments/ministries highlights the current status mentioned in the table below:

**Table: Major Cold Chain Infrastructure Components**

S. No.	Infrastructure Component	Desirable Set-up Location	Current Usage
1	Modern Pack-house (PH)	At farm gate for fresh produce preconditioning	For exporters mostly
2	Long Haul Transport (T)	From pack-house to Mandi/wholesale buyer	Across the country
3	Cold Storage Hubs (CH)	Close to consumption/distribution centre	Across the country
4	Cold Storage Bulk (CS)	At farm gate/food processing premises	At farm gate/ food processing premises
5	Ripening Chamber (RC)	Close to consumption/distribution centre	Near to Consumption centre
6	Last mile Transport (t)	Within distribution city	Major cities
7	Retail/ Front-end (FE)	Last mile merchandising	Front end
8	Food Processing Unit (PU)	Factory dispatch of food product as source point	Cluster parks, production zones

The above table shows different cold chain infra components ranging from the Modern Pack-house situated at the farm level to Cold Storage Hubs situated at Consumption/Distribution Centres and Retail merchandising situated at the front end. These facilities are interconnected via both Long-Haul Transport and last mile transport.

**Table: Infrastructure Gap Analysis**

Infrastructure Type	Infrastructure Requirement (A)	Infrastructure Created (B)	All India Gap (A-B)	% share of Gap to Required
Pack house	70,080	249	69,831 nos.	99.60%
Reefer Vehicle	61,826	9,000	52,826 nos.	85%
Cold Storage (Bulk)	341,64,411 MT	318,23,700 MT	32,76,962 MT	10%
Cold Storage (Hub)	9,36,251 MT			
Ripening Chamber	9,131	812	8,319 nos.	91%

**Source: Strategy Document: discussion on Cold Chain Development (NCCD)**



Developing appropriate business models with suitable infrastructure should revolve around flow of goods on basis of per capita consumption at population centres, linked to distance from identified producing districts, categorised by temperature ranges (under frozen, chill, mild-chill), segmented by bulk long term storage or short transitory supply chain and scope of reverse logistics.

## Other Infrastructure - Value Addition and Preservation Infrastructure

Due to its implicit economic interconnectedness with agriculture and advantageous positioning within the supply chain, the food processing industry as a whole stands out. The food processors are likely among the various agencies that work in the area between the producer and the consumer of agricultural products and the degree of system integration has an inverse relationship with this number. More significantly, investment across the board is dispersed, with cross-cutting effects on the supply chain. As a result, the relationships between farmers, processors, customers, and infrastructure are synergistic.

**Scheme for Cold Chain and Value Addition Infrastructure** covers creation of infrastructure facilities along the entire supply chain:

- Cleaning, grading, sorting and packing facilities
- Steam generation boilers
- Dry warehouse
- Pre-cooling & ripening chambers
- Individual Quick Freezing (IQF) and blast freezing
- Specialized packaging and other common processing facilities
- Irradiation plant.
- Control Atmosphere (CA)/ Modified Atmosphere (MA) chambers
- Variable Humidity Chambers

Similarly, Scheme for **creation / expansion of Food Processing and Preservation Capacities** under PMKSY covers creation of processing and preservation capacities and modernization/ expansion of existing food processing units with a view to increasing the level of processing, value addition leading to reduction of wastage.

Government of India has formulated a Central Sector Scheme of financing facility under '**Agriculture Infrastructure Fund**' which was launched on 9th August 2020 for creating required pre and post-harvest management infrastructures in the agriculture sector. Agriculture Infrastructure Fund aims at providing a medium/long term debt financing facility till 2025-2026 through 3% interest subvention and credit guarantee support on loans for creation of post-harvest management infrastructure and community farming assets. Community farming assets eligible under Agri Infra Fund includes:<sup>1</sup>

- i. Organic inputs production
- ii. Bio stimulant production units
- iii. Infrastructure for smart and precision agriculture.
- iv. Projects identified for providing supply chain infrastructure for clusters of crops including export clusters.
- v. Projects promoted by Central/State/Local Governments or their agencies under PPP for building community farming assets or post-harvest management projects.

<sup>1</sup> <https://pib.gov.in/Pressreleaseshare.aspx?PRID=1783870>



In addition to the aforementioned community farming assets, farmer communities such as PACS, FPOs, SHGs, JLGs, Multipurpose Co-op societies, Marketing Co-op societies and their federations are also eligible to get the benefit under Agri Infra Fund for creation of following post-harvest management infrastructures:

- |  |                                |
|--|--------------------------------|
| i. Supply chain services including e-marketing platforms | vi. Sorting & grading units    |
| ii. Warehouses   | vii. Cold chains               |
| iii. Silos   | viii. Logistics facilities     |
| iv. Pack houses  | ix. Primary processing centres |
| v. Assaying units  | x. Ripening Chambers.          |

Since the inception of the scheme in Aug 2020, loan amounting to Rs. 6182 Cores have been sanctioned for 8630 Projects across the country.

**Scheme for creation of backward and forward linkages** provides effective and seamless backward and forward integration for processed food industry by plugging the gaps in supply chain in terms of availability of raw material and linkages with the market, financial assistance provided for setting up of primary processing centers/ collection centers at farm gate and modern retail outlets at the front end along with connectivity through insulated/ refrigerated transport.

Although there are enough cold storage facilities, other supporting infrastructure is severely lacking. This suggests that just 15% of the necessary refrigerated transportation is present, despite the fact that there are nearly 90% (32 million tonnes) of cold storage facilities available.<sup>2</sup>

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<sup>2</sup> Food Processing Infrastructure in India, Sai Priya Kodidala - May 16, 2018, <https://prindia.org/theprsblog/food-processing-infrastructure-in-india>



## Sector Specific Government Policies and Initiatives

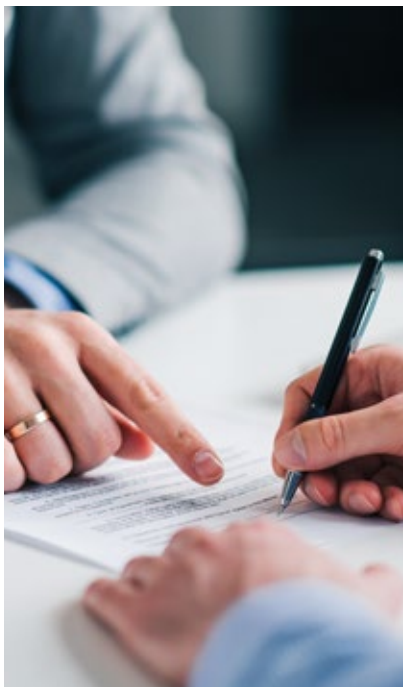
05



## Sector Specific Government Policies and Initiatives

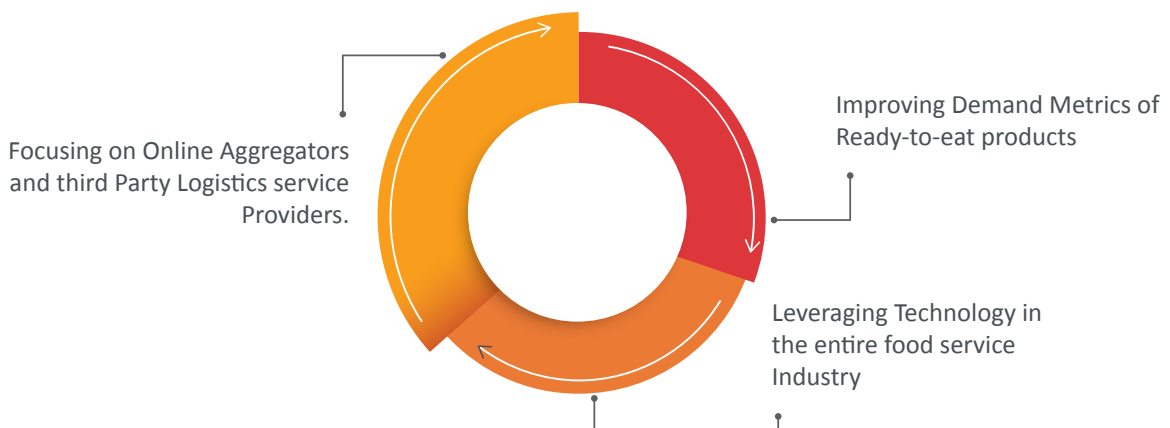
The government has implemented a number of initiatives and programmes, including ones aimed at raising the processing level, to support and grow the food processing industry.

Some of these measures include recognising cold chain and food and agro-based processing facilities as agricultural activity under the Priority Sector Lending standards, a Special Food Processing Fund worth Rs. 2000 crore to offer loans at reasonable rates for the establishment of Mega Food Parks (MFP) and processing facilities within the MFPs, change of product-by-product approval process of FSSAI to one that is based on ingredients and additives, and permitting 100% FDI for retail selling, including e-commerce, through the government clearance method.



- Total 46 new projects approved under Operation Greens Scheme in the Calendar Year 2022 with an outlay of Rs. 2218.69 Crore
- The export of Processed Food Products has increased from US\$ 8.56 billion in 2020-21 to US\$ 10.42 Billion in 2021-22
- 12 brands have been launched to promote various One District, One Product under the Branding & Marketing component of PM Formalisation of Micro Food Processing Enterprises scheme
- Under PLI Scheme for Food Processing Industry, a total of 182 applications approved under different categories including 30 applications under the PLI Scheme for Millet Based products
- Virtual Inauguration of 75 Food Processing Projects by Union Minister for Food Processing Industries, Shri Pashupati Kumar Paras
- 'Food Processing Week 2.0' organized by the M/o Food Processing Industries, under 'Kisan Bhagidari Prathmikta Hamari' Campaign under the 'Azadi Ka Amrit Mahotsav' umbrella

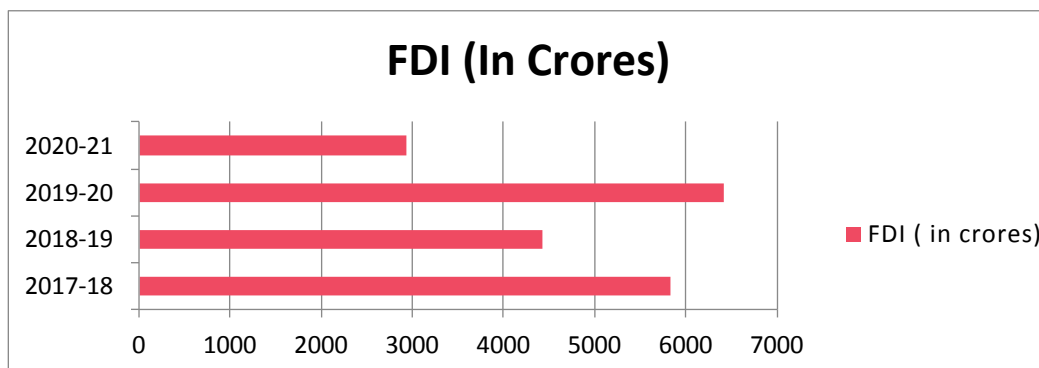
With the evolving economic demographics and economic growth, India is likely to drive global food service industry. The focus should be on:



The Central as well as the state government is focusing on these aspects and are creating an ecosystem for food processing Industry. Various Initiatives taken by the government:<sup>3</sup>



**Easing of FDI Policy** - Allowing 100% FDI under retail trading, including e-commerce, with respect to food products manufactured in India, in addition to the 100% FDI under automatic route for the food processing industry earlier. The graph shows FDI in food processing industry in the last 4 years.<sup>4</sup>



Even with the easing of the FDI Policy, the investment has almost halved in last 4 years. There could be numerous reasons for this case - COVID-19, emphasis on Start-up India, promotion of MSMEs etc. It is matter of further analysis as to why even with the relaxation in the FDI Policy the investment is on a declining trend.

**Pradhan Mantri Kisan SAMPADA Yojana** - PM Kisan SAMPADA Yojana is a complete package for creation of modern infrastructure with efficient supply chain management from farm gate to retail outlet. It consists of seven component schemes viz;<sup>5</sup>

<sup>3</sup> Invest India, 2022

<sup>4</sup> PIB, 2021

<sup>5</sup> MoFPI, 2023



**Nivesh Bandhu** - An investment portal under the Ministry of Food Processing Industries, India, it provides a platform to all the investors who are looking to invest in India in the food processing sector. The portal highlights the steps on doing business in India, policies and facilities provided by the government and the regulatory frameworks that are involved in setting up the operations in India.<sup>6</sup>

**Animal Husbandry Infrastructure Development Fund**- The Animal Husbandry Infrastructure Development (AHIDF) has been approved for incentivizing investments by individual entrepreneurs, private companies, MSME, Farmers Producers Organizations (FPOs) and Section 8 companies to establish (i) the dairy processing and value addition infrastructure, (ii) meat processing and value addition infrastructure and (iii) Animal Feed Plant.

**Table: Opportunities with respect to 6 major sub- segments of Food Processing Industry<sup>7</sup>**

<b>Dairy</b>	<ul style="list-style-type: none"> <li>Huge demand of Value Added Dairy Products i.e Cheese, custard, Flavored Milk.</li> </ul>
<b>Meat &amp; Marine</b>	<ul style="list-style-type: none"> <li>Huge scope of Export to different Countries with increasing demand of frozen foods.</li> <li>Innovation in product development such as ready-to-cook, ready-to-eat, canned and frozen food.</li> </ul>
<b>Cereals, Grains &amp; Oilseed</b>	<ul style="list-style-type: none"> <li>Major Exporters of various food grains.</li> </ul>
<b>Packaged Food</b>	<ul style="list-style-type: none"> <li>Investing in Improving Packaged foods manufacturing capacities.</li> </ul>
<b>Fruits &amp; Vegetables</b>	<ul style="list-style-type: none"> <li>Advancement of new technology to reduce wastage levels.</li> <li>Increasing focus on processed food products.</li> </ul>
<b>Beverages (Non- Alcoholic)</b>	<ul style="list-style-type: none"> <li>Advancement in Quick Service Restaurants (QSRs), and changing food habits will increase demand of the beverages sector.</li> </ul>

<sup>6</sup> MoFPI, 2021

<sup>7</sup> Invest India, 2022



## Sector Sustainability & Impact of Technology

06

## Sector Sustainability & Impact of Technology

Players in the food sector are rising to the occasion to meet the nutritional needs of a global population and coming up with creative solutions to reduce the negative environmental effects of food production and support the ability of the earth to continue providing food.

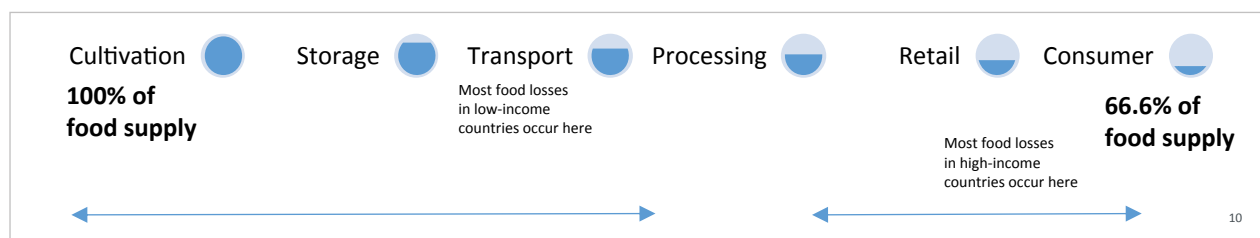
Cultivation is only the beginning of sustainable food production, stakeholders in the food sector are becoming more concerned with the effects of food manufacture and processing and to promote sustainable practices and processes. There are numerous ways to reduce the environmental footprint of food processing and manufacturing, a few of them are as follows:

### Eco-friendly packaging

A significant source of waste and pollution is food packaging. Only 14% of the annual production of plastic packaging, which totals over 78 million metric tonnes, is recycled.<sup>8</sup> Most plastic is produced from non-renewable materials, such as oil or natural gas, and is ultimately disposed away in landfills. A rising number of producers are choosing alternatives made of wood and paper. The paper and wood used to construct the packaging, however, must originate from sustainably managed forests. Creative packaging alternatives using biodegradable materials like fish skin, seaweed, and crop residues are some ways of reducing the burden on forests.

### Reducing Food Wastage

The FAO estimates that every year, up to one-third of the food produced for human consumption is wasted.<sup>9</sup> This represents a significant loss of not just food but also resources utilised to manufacture and process it (i.e. water, soil nutrients, transportation energy, labor). Nearly half of this food waste is a result of inefficient processing and production. By streamlining their procedures and management frameworks, food producers and processors can drastically minimise food waste. This begins with measuring food losses during the processing carefully and determining their causes. It also entails making sure that staff members are appropriately trained to look for such causes and mitigate them.



### Efficiency Improvement

Energy and water are both used extensively during the production and processing of food. About 23% of the total energy used in the food business is consumed during processing and manufacturing.<sup>11</sup> Water is a major component of many industrial processes used in food processing (e.g., cleaning, sanitizing, cooling, cooking).

<sup>8</sup> <https://www.nationalgeographic.com/environment/future-of-food/food-packaging-plastics-recycle-solutions/>

<sup>9</sup> <http://www.fao.org/3/a-i2697e.pdf>

<sup>10</sup> Food and Agriculture Organization of the United Nations. 2013b. Food wastage footprint. Impacts on natural resources. Summary Report. Rome, Italy: FAO (<http://www.fao.org/docrep/018/i3347e/i3347e.pdf>)

<sup>11</sup> University of Michigan, Center for Sustainable Systems (<http://www.umich.edu/~css>)



By identifying possibilities for increased efficiency, considerable advancements can still be realised. Smart metre deployment, energy efficient and sustainable water management systems can aid in recognising and seizing such possibilities.

### Using Sustainable Raw materials

There are a variety of agricultural products whose production raises questions about social and environmental sustainability. For example, the cultivation of commodities like palm oil, cocoa, and coffee has been connected to issues with deforestation, habitat loss, child and/or forced labour, among other sustainability concerns.

Almost 90% of the world's fisheries are either completely exploited, overexploited, or depleted. The lives of the local communities that depend on these fish stocks are in danger due to overfishing and destructive fishing practises, which also endanger delicate maritime habitats and ecosystems.

By making sure that they ethically acquire "high-risk" products, food processors and manufacturers can take a position against these and other destructive farming practises.

In addition to the aforementioned elements, the necessity to guarantee a steady supply of raw materials encourages mono-cropping over mixed farming practises, which degrades soil and decreases biodiversity. Global sourcing procedures are all too frequently extractive and pay little attention to the terrible effects on small-scale farmers and their communities' social, economic, and environmental conditions.

The United Nations' adoption of the Sustainable Development Goals (SDGs) in 2015 builds on the Millennium Development Goals and offers a helpful framework for comprehending and addressing the sustainability issues. The SDGs provide food enterprises with a good framework to map their activities and take corrective measures. The government's role is essential in raising business communities' understanding of and capacity for adapting to the SDGs.

### Technology

Incorporating new technologies into agriculture is anticipated to boost farm output and cut losses. Farmers are anticipated to benefit from advances in agricultural monitoring technology, forecasting tools, analytics, etc. to reach their productivity targets.

Technology finds use in farm monitoring (robotics and drones); data analysis using historical data on soil quality, precipitation etc.; farm management systems (sensors, robotics etc.); and also in exploring alternate farming techniques like hydroponics, protected agriculture, vertical farming etc. In addition, Digital systems' flexibility makes it possible to employ these tools and approaches for both small- and large-scale operations.

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<sup>12</sup> <https://unctad.org/en/pages/newsdetails.aspx?OriginalVersionID=1812>

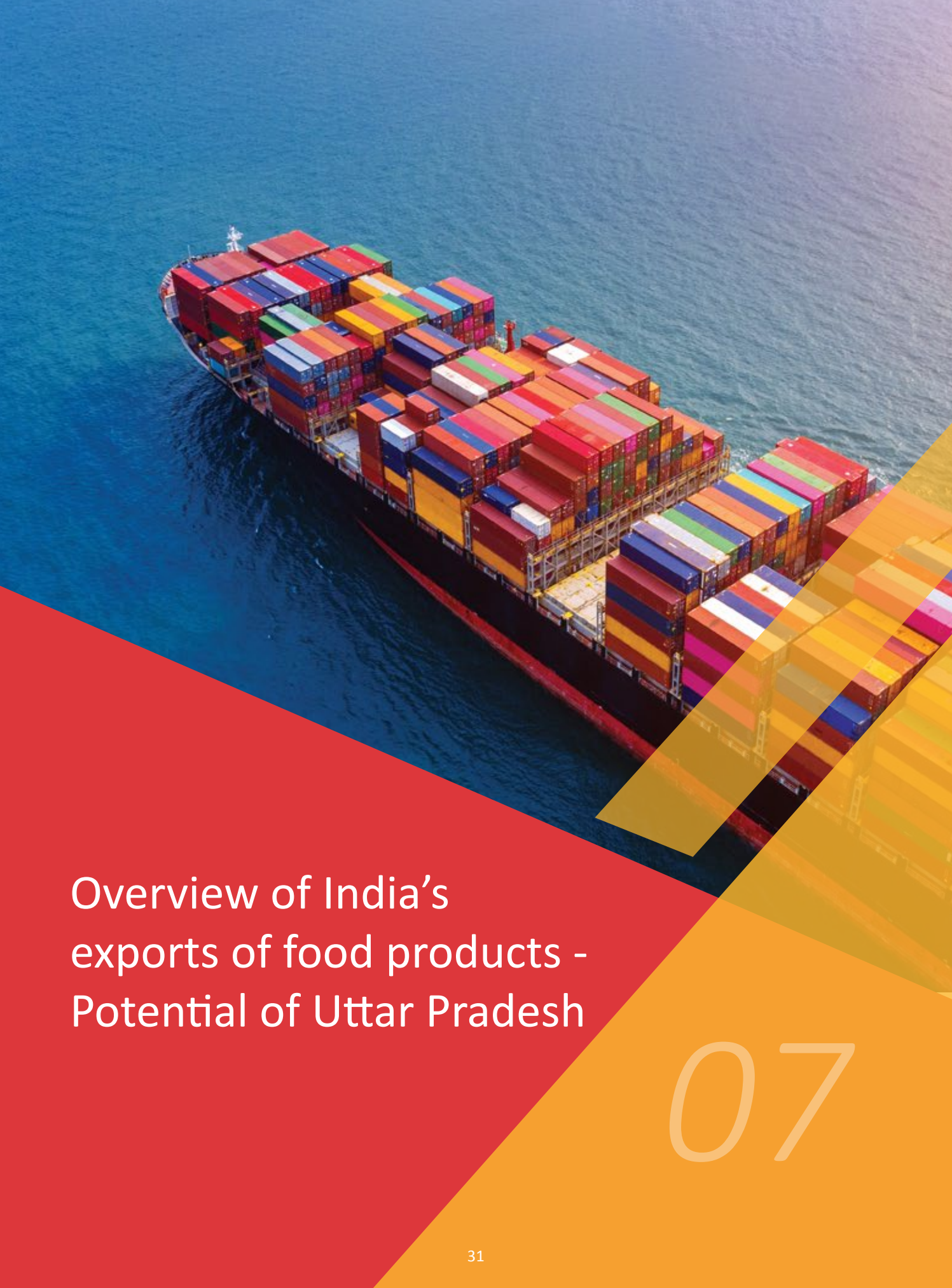


The blockchain technology empowers each member in a supply chain ecosystem by giving access to information on how items are moving through the system, including the location in transit. They can also view bills, paperwork, and customs documents. Without the agreement of other parties on the network, no one party is permitted to change, eliminate, or even add any records. By lowering the amount of time goods spend in transit and shipping, improving inventory control, and reducing fraud and errors, waste and costs can be reduced.

The benefits of blockchain are multifold:

- Farm data and conditions.
- Factory/processing data
- Storage temperatures and conditions
- Transit and distribution data
- Reducing inaccuracies, shelf storage data, expiry dates
- Quality and food safety data and monitoring

Despite all these benefits there are certain issues with the use and adoption of technology. More needs to be done in terms of linking the production, distribution and consumer data along with alleviating fears about data privacy and improving transparency for greater integration. The cost of collecting, storing and processing data has a cost, so has technology adoption and equipment, the challenge is to make it affordable and accessible to all, irrespective of the scale of the enterprise. Thirdly, relevantly trained and skilled human resources are a necessity for technology to pick up scale and applicability.



Overview of India's  
exports of food products -  
Potential of Uttar Pradesh

07



## Overview of India's exports of food products

Food exports are important to the Indian economy, making a sizable contribution to the country's foreign exchange earnings and supporting economic growth. India is one of the top food exporters in the world, with a vast variety of agricultural and processed foods to different nations. The nation boasts a robust agricultural industry that serves as the cornerstone for its food exports, as well as a rich and varied food culture. Rice, wheat, spices, tea, coffee, processed fruits and vegetables, dairy goods, and confectionary items the major food items exported from India. Due to the rising popularity of Indian cuisine and an improvement in quality and safety standards of Indian food products, there has been an increase in demand for Indian food in the global market.

The economy of India derives a substantial portion of its income from the export of food goods. According to data from the Ministry of Commerce and Industry, India's exports of food and agricultural products in the financial year 2021 were worth over US\$ 40 billion. The major food items that were exported include rice, wheat, spices, tea, coffee, processed fruits and vegetables, dairy products, and confectionery items. These exports were primarily exported to countries in the Middle East, Southeast Asia, and Europe. Despite COVID-19, India's agricultural exports grew by 20% during 2021-22, achieving a growth of \$50.21 billion. Rice exports earned \$9.65 billion, and wheat exports rose from \$567 million to \$2.2 billion from FY 2021 to FY 2022. Alongside this, the export of dairy products jumped from \$323 million to \$634 million subsequently. Overall, agricultural products exported from India see a 19.92% growth and reach \$50.21 billion.<sup>13</sup>

**Table: Top and highly demanded Agricultural Products exported from India (Billion Dollar Rupees)**

Non-Basmati Rice	Sugar	Basmati Rice	Castor Oil	Misc. Processed Items	Other Cereals	Fresh Fruits & Vegetables
456.5	343.48	264.15	87.54	86.8	343.48	65.61

**Source: Economic Survey 2021-22**

Uttar Pradesh, which is the most populous state, account for around 16% of India's Population is also third largest contributor to the national output (8% of India's gross domestic product).<sup>14</sup> It consecutively ranks under top 10 states by value of exports. Owing to a multitude of resources coupled with diverse production and value addition networks exposes it to significantly contribute to country's exports. Uttar Pradesh has about 165.98 Lakh hectares of agricultural land with 233. 25 Lakh farmers in the state.<sup>15</sup>

Owing to its strategic location in the heart of the Indo-Gangetic Plain, there is abundance of a variety of agricultural produce such as carrots, sugarcane, watermelon, mango, potato, guava, wheat etc. It is also the largest exporter of meat and ranks 2nd in sugar production in the country.<sup>16</sup> Thus, it is clear that Uttar Pradesh holds an important place in country's export and has potential for being the hub of agri-exports in the near future. The generic and institutional strategies that are being implemented by the Uttar Pradesh to become the state's leader in terms of Food Export are as shown below:<sup>17</sup>

<sup>13</sup> Import Export Federation , 2022

<sup>14</sup> SECC, 2011

<sup>15</sup> SECC, 2011

<sup>16</sup> MoFPI, 2023

<sup>17</sup> EXIM Bank, 2018



**Infrastructure** - To provide forward and backward connectivity to exporting facilities and to find, build, and promote the logistical infrastructure that encourages exports, the current infrastructure facilities have been streamlined and greatly improved. Given that the Delhi Mumbai is of great interest to Uttar Pradesh and Amritsar-Kolkata Industrial Corridor has been significantly improved, it has also established a multi-modal cold-chain network, which must include two or more forms of transportation, to facilitate the movement and storage of perishable goods.

Additionally, a strategic alliance between organisations that promote exports and industrial infrastructure could increase the state's export potential. The emphasis on Cold Chains and Cold storage can't be neglected and out of the total 112 food processing projects, 10 cold chains have been completed in U.P starting from FY 2017. More needs to be done with respect to the support and processing/preservation infrastructure other than cold chains.

**Capacity Building and Skill Development** - Exporters must be extensively aware about the most recent worldwide breakthroughs in areas such as export financing, insurance, packaging and ecolabelling, quality, etc. They must become acquainted with the laws and customs of the countries that import goods. A focused effort on the part of policymakers to promote consistently high quality and environmentally friendly production practises through the use of Quality Management Systems and Environment Management System certification might provide exporters with a competitive advantage. With this aim, Uttar Pradesh must regularly hold Workshops, Seminars, and Conferences on various areas of global commerce across sectors.

An extensive inter-ministerial network can be established with the help of organisations like the Agricultural and Processed Food Products Export Development Authority (APEDA), Export Promotion Councils, and India Trade Promotion Organization, which would provide a comprehensive environment for technological advancement and skill development. From the perspective of skill development, state universities need to be encouraged to create both vocational and research-based courses in agro-processing, biotechnology, use of ICT in agriculture and linked fields etc.

Keeping this in view, the government has launched state schemes such as "Uttar Pradesh Skill Development Mission" and are also leveraging the national schemes such as "Pradhan Mantri Kaushal Vikas Yojana", Skill India, National Apprenticeship Promotion Scheme (NAPS).

**Cluster Development** - It has been proven that industrial clusters can aid in the expansion of an industry by providing a number of advantages like providing shared resources and facilitating group activities like collective marketing and sourcing, which produce complementarities and help achieve high level of competitiveness. In Uttar Pradesh, there are a lot of industrial clusters and the government has on its agenda, to further strengthen and develop these clusters. As a vital first step, the state has developed a procedure for assessing the existing clusters. The assessment covers areas like infrastructural limitations, technology development, the availability of skilled labour, environmental sustainability, etc. Capacity building efforts include the development of institutions, physical infrastructure, and human resources. One District One Product (ODOP), identification of food processing zones, are the recent state government projects that move in this direction.



**Focus Sectors**

- Fruits & Vegetables

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- Dairy

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- Poultry & Meat

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- Fisheries & Marine

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- RTE/RTC

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- Spices

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- Nutraceuticals

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- Food Grains



**Fiscal Incentives**

- 60% Food Products under 0% Slab.

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- 100% exemption to food processing industries for first 5 years and 25% on next 5 years

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- Credit facilities under Priority Sector Lending

Source: MoFPI, [foodprocessingindia.gov.in](http://foodprocessingindia.gov.in)

In conclusion, Uttar Pradesh could contribute significantly to the growth in India's food exports. The state is ideally situated to produce a wide range of food items due to its fertile soil, climate, and substantial workforce. To fully exploit this potential, the state will need to make investments in the expansion of its infrastructure, raising the level of labour expertise, and promoting private investment in the food processing sector. Uttar Pradesh has the ability to play a significant role in global food processing ecosystem with the correct policies and actions.



The case for inclusive growth -  
Strengthening institutional  
and policy environment,  
processes and incentives  
in Uttar Pradesh

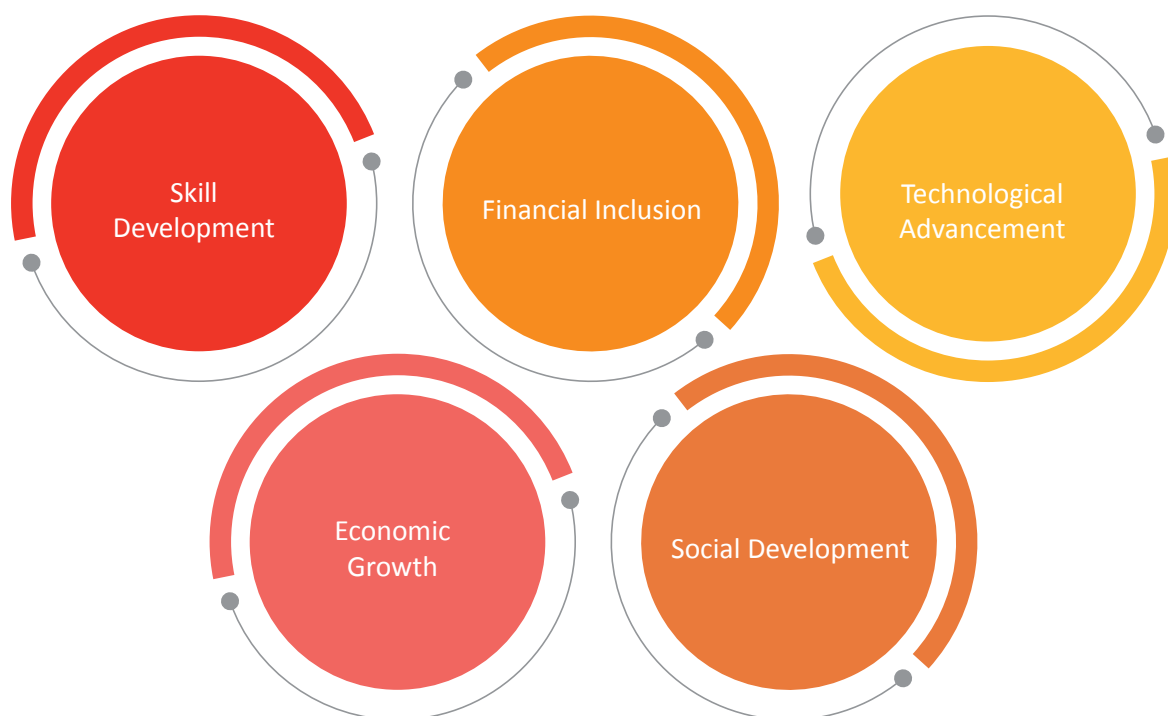
08

## The case for inclusive growth

Inclusive growth is economic growth that is distributed fairly across society and creates opportunities for all. The inequalities are its peak in last 30 years and are increasing and further rising due to the COVID-19 crisis.<sup>18</sup>

India ranks 62nd out of the 74 emerging countries according to the World Economic Forum’s “Inclusive Development Index” report. While India is well on its path to become a 5 trillion economy, economic inequalities is still a reality.<sup>19</sup> The ranking of India on the scale of “Inclusive Development Index” can be improved if all the states show an improvement on the scale individually.

Uttar Pradesh which is the most populous state and accounts for around 16% of India’s Population, is also third largest contributor to the national output (8% of India’s gross domestic product).<sup>20</sup> Understanding the case of inclusive growth of one of the most important contributing state presents the picture of strengthened Institutional and policy environment, processes and incentives. The pillars of inclusive growth for any country or state rests on the elements depicted below:



**Figure: Pillars of Inclusive growth**

To achieve a strengthened institutional and policy environment, process and environment, policymakers in Uttar Pradesh could focus on the following areas:

**Strengthening Institutions-** This entails strengthening the legal and regulatory system, enhancing the performance of governmental institutions, and tackling corruption. To increase transparency, the departments of economic and social development, banking and financial institutions, and skill development must reorient their attention to e-governance.<sup>21</sup>

<sup>18</sup> OECD, 2023

<sup>19</sup> Invest India, 2022

<sup>20</sup> SECC, 2011

<sup>21</sup> PIB, 2021

- **Good Governance-** Uttar Pradesh has shown an incremental growth of 8.9% in the Good Governance Index compared to 2019 GGI. Good Governance Index takes into account the advancement in Agriculture and Allied sectors, Commerce & Industries, Human resource Development, Public Health, Public Infrastructure and Utilities, Economic Governance, Social Welfare & Development Judicial and Public Security, Environment and Citizen Centric Governance.
- **Public- Private Partnership-** Government intends to increase the Public-Private Partnership so as to ensure better service delivery to its people by utilising expertise from various fields.

**People centric Policies-** The focus should be on pro-people policies to encourage entrepreneurship, innovation, and develop an inclusive labour market.

- **Agriculture -** Schemes like Fasal Bima Yojana, Krishi Unnati Mela, PM-KISAN. The government's focus is on improving the Package of Practices, mechanization of agriculture, converging agriculture with technology.

**Making preferred investment destination-** This is crucial for achieving inclusive growth because it promotes private sector investment in priority sectors, which in turn helps to improve socioeconomic conditions and create jobs. In recent years, various policies have created an ecosystem for industrial setup and thus improving its perception in the eyes of the investors. The state has now network of expressways which connects it to prominent hubs in the state as well as outside the state which makes it a hotspot for upcoming flagship projects for multi-modal connectivity in India. It is also home to about 5 airports in the country.

The government has also introduced more than 21 policies and land reforms to support the need of investors. It has also registered 21% growth in FDI inflows between years 2017-2021.<sup>22</sup>

- **Industrial Investment & Employment Promotion Policy of Uttar Pradesh -** The policy aims to make use of the state's natural resources and establish a position while stimulating the state's long-term, all-encompassing, and adjusted financial growth. The state has liberalised its "Export Promotion Policy" and also brought "Uttar Pradesh I.T. & Start-up Policy". It has to now concentrate on risk-based regulations (RBR) and an impact assessment framework in order to further increase business accessibility.

### **Increasing focus on Micro, Small and medium enterprises (MSME) -**

Because of its demographics, Uttar Pradesh is a region with tremendous potential. It also has a lot of resources, skilled and semi-skilled labour, and a sizable consumer market; it yet has room to grow. Approximately 77.73% of the people in the state of Uttar Pradesh reside in rural areas.<sup>23</sup> With over 90 thousand firms, it now has the greatest MSME population in the nation. The growth of MSME not only enables widespread job opportunities at low capital costs, but also aids in the industrialization of rural and underdeveloped areas, thereby eradicating regional disparities and guaranteeing the equitable distribution of the nation's income and revenue.

The Government of Uttar Pradesh intends to promote the development of MSME in the state under the guidelines of MSME Policy 2022 and emphasis is being given on industrial friendly policies.<sup>24</sup> Various schemes that are being implemented in the state are as follows:

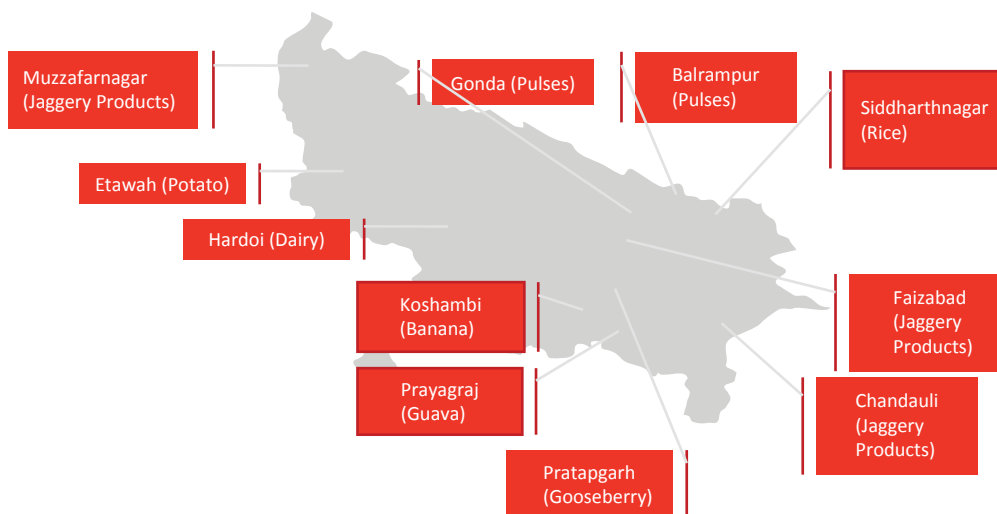
- **One District, One Product (ODOP) –** With the aim of reaching out to the demands of local and global consumers the government intends to establish product- specific traditional manufacturing centres in 75 districts across state. Under the scheme, provision of providing financial support for the expansion of specialized products through marketing, skill development, common facility development, and MSME company development. The state government will promote food products of 11 districts under its ODOP scheme.<sup>25</sup>

<sup>22</sup> TOI, 2022

<sup>23</sup> SECC, 2011

<sup>24</sup> <https://www.msmex.in/learn/uttar-pradesh-govt-initiative-to-support-msme/>, 2022

<sup>25</sup> <https://timesofindia.indiatimes.com/city/lucknow/nw-food-products-on-uttar-pradesh-odop-list-specialities-from-11-districts-identified/articleshow/65361451.cms?from=mdr>



- Chief Minister Youth Self Employment Scheme- It aims to empower jobless youth for setting up of small businesses by granting loans of up to 25 Lakhs for enterprise establishment.
- Startup Policy- The policy intends to imbibe the culture of entrepreneurship in the students from the initial years of their life. Under this, formation of e-cells in College, incubators in institutes of higher learning and centres of excellence to animate innovative work is to be established.

### Investing in Human Capital

Notwithstanding the fact that the state has an edge in terms of the size of its labour force, the government must make a significant effort to harness that energy and turn it into human capital. The Uttar Pradesh government therefore established the "U.P. Skill Development Program," which makes the youth employable by offering free vocational training, with the goal of creating a big force of human capital. It is a pioneering endeavour since it coordinates and standardises the operation of five central and one state government skill development programmes.

Special Central Assistance to Scheduled -Caste Sub Plan (Ministry of Social Justice, GOI)	Skill Development Initiative (Ministry of Labour)	Multi sectoral Development Programme (Ministry of Minority Affairs, GOI)
State Skill Development Fund	Border Area Development Programme (Ministry of Home Affairs)	Building & Other Construction Workers' Scheme (BOCW)

It is required that, when all the programmes are combined, 20% of candidates be women and 30% are members of underrepresented groups. Moreover, a state skill development fund is established to cover the additional costs required to ensure mitigation.<sup>26</sup>

For drawing in investment, encouraging innovation, and spurring economic growth, a skilled and educated workforce is crucial. It is crucial that the state continue to invest in the development of human capital and provide chances for capacity building and skill augmentation.

A comprehensive plan that addresses the needs of all segments of society and ensures that everyone benefits from economic success is required for inclusive growth in Uttar Pradesh. A number of people-centered policies and programmes have been implemented by the state government with the aim of improving citizens' socioeconomic conditions and promoting inclusive growth. There is definitely opportunity for improvement in terms of supporting institutions and ensuring they are set up to deliver services effectively and efficiently.

<sup>26</sup> Development Mission, U.P Skill, 2022



Uttar Pradesh - Vision,  
Strategy and Initiatives to  
Promote Food Processing  
Sector

09



## Uttar Pradesh - Vision, Strategy and Initiatives to Promote Food Processing Sector

Food processing is converting agricultural materials into consumable food or transforming one food product into another by increasing its value. According to the physical characteristics of the finished product, the Ministry of Food Processing Industries divides food processing into two sub-categories: (i) manufactured processes, in which the product's original physical characteristics are changed through a process [involving people, power, machines, or money], and the transformed product is edible and has a commercial value; and (ii) other value-added processes, in which the product does not undergo any manufacturing. Depending on the kind and level of value addition, it is characterised as primary or secondary.<sup>27</sup>

The importance of the food processing industry has grown over time as processed food items' prominence in consumer basket has sharply increased. It is of utmost importance since it connects agriculture and industry, two crucial pillars of the economy. Promotion of the food processing industry can help create jobs, double farmer income, minimise food waste, stop food inflation, diversify crops, lengthen product shelf lives, and many more.

India's food processing sector is essential in bridging the gap between Indian farmers and customers in domestic and international markets. MoFPI is endeavoring to encourage investment along the whole value chain. The food processing business accounts for 12.38% (at the 3-digit NIC classification) of the employment generated in the registered industrial sector, which employs roughly 1.93 M people. The unregistered food processing industry supports employment for 5.1 million people, according to the NSSO 73rd Round study. India's food processing sector is mostly composed of the industries of grain, sugar, edible oils, beverages, and dairy products. India has one of the largest food processing industries in the world, and by 2025–2026, output is anticipated to exceed \$535 billion.<sup>28</sup>

The segment of food processing industry can be divided under 6 major sub-segments and these are Dairy, Cereals grains & Oilseeds, Meat & Marine, Packaged Food, Fruits & Vegetables, and Beverages (Non- alcoholic). Based on the segment wise analysis of the top 5 production centres for food processing, the share of Uttar Pradesh in terms of percentage of total production and ranking is presented below:<sup>29</sup>



Dairy	16%	1st
Meat & Marine	9%	3rd
Cereals, Grains & Oilseed	18%	1st
Packaged Food	8 %	2nd
Fruits & Vegetables	12%	1st
Beverages (Non- Alcoholic)	15%	2nd

<sup>27</sup> RBI, 2020

<sup>28</sup> Invest India, 2023

<sup>29</sup> Annual Survey of Industries

The vision of Uttar Pradesh in terms of the food processing sector is to make the state a hub of food processing in India. The state government aims to create an enabling environment for the growth of the food processing industry by providing infrastructure, policy support, and financial incentives. The government also aims to promote the development of small and medium enterprises in the food processing sector and to provide skill development training to the youth to make them employable in the industry.

In line with this vision, the government of Uttar Pradesh has launched several initiatives to promote the food processing sector, including the Uttar Pradesh Food Processing Policy 2018, the establishment of food processing parks, the implementation of the Cold Chain Project, and the creation of MSME Facilitation Centers. These initiatives aim to attract investment, create employment opportunities, and promote the growth of the food processing sector in the state. It also recognizes the importance of ensuring food safety and quality in the food processing sector and has taken steps to implement food safety regulations and standards.

## Initiatives

The emergence of newer product groups is causing the food processing business to evolve quickly. This demonstrates how customer preferences have shifted towards processed foods. The government is therefore focused on employing the appropriate techniques to keep up with the rising demand for processed foods. Only 10% of Indian food is currently processed, with Uttar Pradesh accounting for 6% of it. Compared to other nations, this amount is significantly lower.

The government has launched a number of initiatives under the "U.P. Food Processing Policy, 2017" to create an ecosystem for the growth of the food processing industries in the state. Various reports highlight the need for capital investment, so to reach a level of at least 20% in the next five years. The 2017 Food Processing Policy covers processing of fruits and vegetables, agricultural products, and fish. The focus of the government is on capital investment subsidies, grants for infrastructure development, and interest subsidies for the acquisition of reefer vehicles and mobile pre-cooling vans. Emphasis is also laid on developing infrastructure based on post-harvest management and agro-processing clusters.<sup>30</sup>

1. **Development of infrastructure facilities-** A total of 112 food processing projects were completed/ operationalized in the country<sup>31</sup> out of which 10 cold chain projects have been completed in U.P. starting from FY 2017 and 3 Agro Processing clusters have been identified in Uttar Pradesh.<sup>32</sup> Limited works on Mega Food Park and food testing laboratories have been done, underlining the need for robust infrastructure facilities for an all-round development of state as a food processing hub.
2. **Identification of Food Processing Zones-** Based on the accessibility and suitability of the local raw materials, the food processing zones were determined. These zones will see the establishment of suitable food processing enterprises based on priority. The state leads the nation in the production of milk (17%), livestock (apart from cows) (11%), and potatoes (34%). Along with producing food grains (20%), wheat (34%), fruits (19%), and vegetables (30%), it also has a huge supply of raw materials. At Barabanki, Varanasi, and Ayodhya, three agro-food parks have been established. With a focus on One District, One Product, cluster-based approaches are being employed to demarcate food processing zones in the states.<sup>33</sup>
3. **Providing Conducive environment for setting up Food Processing Industry-** Industrial friendly policies related to Labour, Energy, Environment, Commercial Tax, Department of Agriculture Marketing & Agriculture Foreign Trade and other concerning departments have to be framed. State's focus on e-governance, under which computerization of the offices of food processing department will be strengthened so that a single window is build up for exchange of information among the entrepreneurs is laudable. It can act as bridge to strengthen the forward and backward linkages.

<sup>30</sup> U.P. Food Processing Policy, 2017

<sup>31</sup> PIB, 2022

<sup>32</sup> MoFPI, Consolidated list of state-wise Cold chain Projects, 2022

<sup>33</sup> UP NRI, 2022



The development of a supportive environment depends on physical components, but human capital is as important. Although there is no scarcity of manpower in the state, there is a demand for qualified or skilled workforce that may serve as human capital. By concentrating on delivering programmes for skill and entrepreneurship development through centres run by the Central and State government, small and medium food processing units and startups can be promoted to give a revived thrust to the sector.

**4. Capital Investment Promotion-** In order to set up a food processing industries in the state, investment is attracted through a package of grant-in-aid and concessions available under various schemes of the Central and State Government and under this policy. Uttar Pradesh is organizing a Global Investors Summit, 2023 to attract investment in all sectors with major being on Food Processing Sector.

Uttar Pradesh has a lot of promise for the food processing business, which is why the state government has outlined a plan to support it. However, the strategy should be to enhance the entire food supply chain combining infrastructure development, investment promotion, and policy measures. The government has taken steps to provide a supportive environment for the expansion of the food processing industry, including the building of food parks, the launching of cold chain infrastructure, and the establishment of a Food Safety and Quality Control Authority, but more could be offered in technology adoption and export promotion to further augment the potential that the industry players have to offer.



# Challenges, Opportunities and Way Forward

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## Challenges, Opportunities and Way Forward

On the farm level, skills are required to grow a variety of crops. Programs for developing farm-level skills must be put in place so that farmers may learn more about the most recent technologies, which will motivate them to produce more. Depending on the demand, the final products must be delivered for various markets throughout the world. As a result, every targeted location needs more adequate infrastructure and high-quality storage facilities. High-quality inputs need to be delivered to the processing sector swiftly and without any loss or damage, which will boost the output of the food products with added value.

A high-quality processed food can readily take its place on the global market. It motivates the nation to increase its foreign exchange earnings by profitably selling processed food in both domestic and international markets. The most important obstacles, such as a lack of knowledge about the nutritious content of processed food, need to be addressed even if the sector is seeing strong expansion on the global market.



- Plethora of Government schemes and overlap
- Non availability of successful working PPP Models
- High risks associated with agricultural projects
- Perception about the Public sector
- Exceptionally stringent eligibility conditions of schemes
- Unfavorable Regulatory and Environmental Policies
- Demand of infrastructure created
- Unfavorable/Insufficient State government incentives
- Poor technical guidance from public organization
- Problems associated with land acquisition
- Lack of credit and working capital support by FIs
- Lack of state-of-the-art technology/equipment
- Long gestation period of agricultural projects
- Inefficient utilization of infrastructure due to seasonality aspect of agriculture

Due to the industry's high capital requirements, there is very little industry development and innovation. India can gain significantly by addressing the issues of marketing channels and quality improvements. A well-developed food processing industry would encourage crop diversity, improve value addition, lower wastage, provide better returns for farmers, create jobs, and boost the export revenues. Perhaps, the answer lies somewhere in the good old PPP model.

### PPP model

PPP model in Agriculture is often touted as having the potential to help modernize and deliver multiple benefits towards sustainable agricultural development that is inclusive of smallholder farmers.

As defined by ADB, PPP is-

“a framework – that while engaging the private sector – acknowledge and structure the role for government in ensuring that social obligations are met and successful sector reforms and public sector investment achieved.”

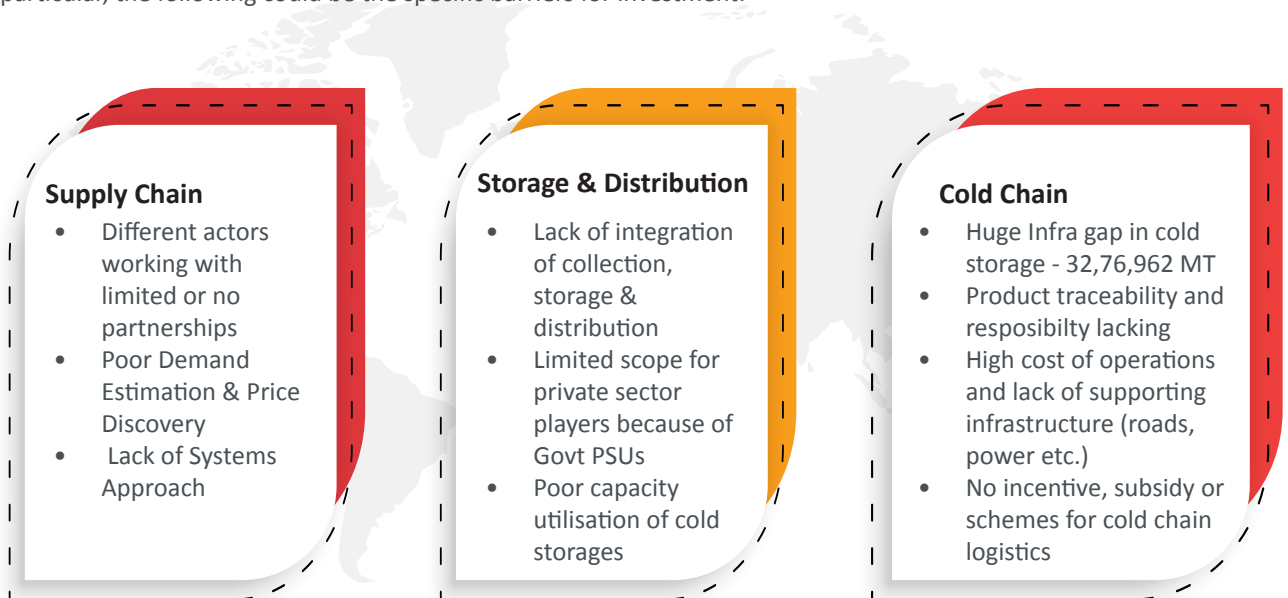
The success of this model hinges on the support from the prerequisites and enabling environment for sustainability, whereas, largely the policy in this regard only focusses on transparent bidding, selection and design of this model with high regulation thus making it hard to evolve the partnership beyond the boundaries and timelines of the project.

PPP framework should be so designed so as to incentivise the private sector participation and to combine complementary capabilities of public and private.



PPP, envisaged as an innovative model for greater efficiency and synergy, but there are a lot of gaps in terms of goals, approach and decision-making between public and private sector. Majorly, the approach, response time, technology, linkages with farmers and actors in the supply chain, multi stakeholder consultations (NGOs, Associations etc.), and incentives for efficient practices are lacking in the existing PPP models, thereby attracting less investments from the private players.

In particular, the following could be the specific barriers for investment:





The market intermediaries/mandi brokers not just facilitate buying and selling, but also, aid in logistics like transportation, packing and labour services, financial needs, as well as tapping retail markets in some cases. Presence of such large-scale unorganised players makes unorganized supply chain even more inefficient and isolated, thus obstructing flow of market information crucial for an efficient, modern and sustainable agri-logistics.

Other areas which requires attention are lack of skilled and trained human resources for matching the industry needs and incentivising growth of the sector, and specific studies and research on integrated value chains and sustainable farm livelihood models; and most importantly innovation and adoption of technologies.

A national level policy or guideline would go a long way in ensuring trust, transparency, legal protection/frameworks and fixing accountability of public sector. New and innovative models and mechanisms need to be developed based on need based assessment of agriculture sector in particular. A positive environment and learning from PPP best practices worldwide could further help in formulating policies and guidelines in favour of the PPP model.

Systematic efforts are required by private players in developing the back-end and front-end of the supply chain. Educational and research institutions on the other need to buck up the R&D activities to attract the private players.



## About Assocham

### The Knowledge Architect of Corporate India

The Associated Chambers of Commerce & Industry of India (ASSOCHAM) is the country's oldest apex chamber. It brings in actionable insights to strengthen the Indian ecosystem, leveraging its network of more than 4,50,000 members, of which MSMEs represent a large segment. With a strong presence in states, and key cities globally, ASSOCHAM also has more than 400 associations, federations, and regional chambers in its fold.

Aligned with the vision of creating a New India, ASSOCHAM works as a conduit between the industry and the Government. The Chamber is an agile and forward-looking institution, leading various initiatives to enhance the global competitiveness of the Indian industry, while strengthening the domestic ecosystem.

With more than 100 national and regional sector councils, ASSOCHAM is an impactful representative of the Indian industry. These Councils are led by well-known industry leaders, academicians, economists and independent professionals. The Chamber focuses on aligning critical needs and interests of the industry with the growth aspirations of the nation.

ASSOCHAM is driving four strategic priorities – Sustainability, Empowerment, Entrepreneurship and Digitisation. The Chamber believes that affirmative action in these areas would help drive an inclusive and sustainable socio-economic growth for the country.

ASSOCHAM is working hand in hand with the government, regulators, and national and international think tanks to contribute to the policy making process and share vital feedback on implementation of decisions of far-reaching consequences. In line with its focus on being future-ready, the Chamber is building a strong network of knowledge architects. Thus, ASSOCHAM is all set to redefine the dynamics of growth and development in the technology driven 'Knowledge-Based Economy. The Chamber aims to empower stakeholders in the Indian economy by inculcating knowledge that will be the catalyst of growth in the dynamic global environment.

The Chamber also supports civil society through citizenship programmes, to drive inclusive development. ASSOCHAM's member network leads initiatives in various segments such as empowerment, healthcare, education and skilling, hygiene, affirmative action, road safety, livelihood, life skills, sustainability, to name a few.



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