Indian Frozen Food Industry
Focus Maharashtra
Indian Frozen Food Industry - Focus Maharashtra

2019

YES BANK and The Confederation of Indian Industry (CII)

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The globalisation of consumers' behaviour and changing market drivers such as increasing disposable income, more women entering the work force, society moving towards more nuclear families, changing lifestyles & food habits, increasing modern retail formats, e-commerce platforms, improved delivery mechanism and above all increased TV programmes on food and cuisines & YouTube platforms is growing the frozen foods space.

The globally frozen food industry will be at USD 300+ Billion by 2022-23 with a CAGR growth of 5 to 6%. India’s frozen food industry being at a nascent state is expected to grow faster than the global growth rate. We can expect double-digit CAGR growth to continue for the years to come.

Frozen Food categories such as frozen vegetables & fruits, meat, fish & marine produce, ready meals, soups and appetizers provide opportunity for domestic consumption and export.

Freezing extends the shelf life of fruits & vegetable, fish & marine produce etc while keeping its wholesomeness and nutrition intact. It provides an opportunity to stabilise the prices in the market, to create value for money for the consumer and better returns for the farmers and producers.

The frozen food industry needs economy of scale. With the advent of solar energy-based refrigeration technologies and an increasing number of Farmer Producer Organisations, rural-based primary processing and freezing & chilling facilities can be a way forward to create more value for the farmers.

To increase consumption of frozen foods, the awareness of consumers at all levels regarding the better hygienic standards, as well as the wholesomeness of these foods is a key challenge.

Most frozen foods do not have any preservatives or shelf-life extenders and can be part of a healthy diet for every Indian. Awareness campaigns need consideration at the national level. Many market side cold chain infrastructure challenges have been addressed over the last two decades. However, inadequate cold chain distribution infrastructure needs to be addressed in supply clusters and semi-urban & rural markets.

The Ministry of Food Processing (MOFPI) has taken various steps over the last two decades to improve the cold chain manufacturing & infrastructure facilities and are continuing to do so through various schemes and incentives. This provides an impetus to the growth of this industry.

The knowledge paper titled “Indian Frozen Food Industry” prepared by YES Bank Ltd and CII provides various facets of the industry. At CII it is our privilege to release this paper at Conclave on Refrigerated and Frozen Foods™ on 26th August 2019 at The Lalit, Mumbai. We appreciate the effort of Mr Nitin Puri, Group President & Global Head (FASAR), Yes Bank and his team. We are sure the outcome of the conclave and this knowledge paper will serve as a valuable reference.

Arabind Das
Convenor
CII Maharashtra Panel on Rural – Urban Connect
Food commands the largest share of the Indian consumers’ wallet (around 40%). The USD 200 billion Indian processed food market is witnessing significant changes in the food plate composition, changes in consumer preferences, higher need for convenience as well as rising consumer demand for food safety, health and nutrition.

Freezing technology can deliver high quality, good value and safe food with an extended storage life and superior nutritional profile. Convenience, demographic shifts, growth in organized retailing and QSR segment, availability of increased frozen storage space with the consumer and changing preferences towards novel, high quality, longer shelf life and healthier processed foods are some of the key driving factors fostering the expansion of frozen foods market in India- currently valued at approximately USD 1 billion and growing at a CAGR of 17 %.

Price sensitivity of Indian consumers, preference for consumption of fresh over frozen foods, volume build-up and low capacity utilization in certain geographies for some products and last-mile cold chain connectivity are some of the critical challenges that need to be tackled in order to improve the penetration of the segment in India. Frozen food manufacturers have been addressing the above challenges through product and process innovations, cold chain infrastructure investments and better availability for consumers through new channels, innovative packaging, modern format retail/ QSR and new age delivery models. Frozen products are also increasingly gaining consumer acceptance versus fresh options.

On the occasion of the Conclave on Refrigerated and Frozen Foods - Challenges and Opportunities, I am pleased to present the collaborative YES BANK- CII Knowledge Paper on ‘Indian Frozen Food Industry’, which provides an overview of the Indian Frozen Food Market, key growth drivers, critical success factors, challenges faced by the industry, recent trends and the way forward to promote the growth of the frozen food industry. I am confident that this paper will serve as an effective and useful reference for all stakeholders involved in the frozen food segment.

Thank you.

Sincerely,

Nitin Puri
Group President and Global Head
Food and Agri Strategic Advisory and Research (FASAR)
YES BANK Ltd.
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Abbreviations
Indian Frozen Food Industry - Focus Maharashtra
1.1 Introduction

An integrated cold chain is essential in ensuring the safety, organoleptic quality, nutritional content and market value of perishable foodstuffs from harvest to the consumer. Most food products require various types of refrigeration in order to maintain quality and to extend shelf life throughout the cold chain.

Freezing is a method of packaging food in a way that it lasts longer, before it is actually consumed. It slows down the decomposition process of the food products as the sub-zero temperatures turn the residual moisture into ice, thus preventing growth of parasites or other harmful bacteria. The global frozen food market uses two processes for preserving food, namely, cryogenic or flash freezing and mechanical freezing. Freezing can deliver high quality, good value, safe foods with an extended storage life. It also offers a nutritional profile comparable to fresh foods and helps to provide dietary portion control. It can also offer emerging environmental benefits including a contribution to reducing food waste and the ability to preserve and use seasonal foods all year round.

As per estimates, the size of global frozen food market is estimated at about USD 219.9 billion in 2018 and is projected to reach a value of nearly USD 282.5 billion by 2023, growing at a CAGR of 5.1% from 2018. The boom in large food chains form an important growing outlet for frozen food products, owing to the latest trend of impulse purchase. The frozen food market has recently seen an exponential rise as consumers are shifting their dietary preferences to ready-to-eat food items. Hectic schedules, demanding careers and subsequent lack of time, leaves little room for making elaborate meals. This worldwide trend has become one of the primary drivers for the global frozen food market.

The leading global players in the frozen food market include General Mills Inc. (US), Nestle SA (Switzerland), Conagra Brands Inc. (US), Kellogg Company (US), Ajinomoto (Japan), Grupo Bimbo S.A.B. DE C.V. (Mexico), The Kraft Heinz Company (US), Lantmannen Unibake International (Denmark), and McCain Foods Limited (Canada). These players adopted various strategies such as mergers & acquisitions, contract manufacturing, new product developments and branding for expansion of their market base.

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As per report on “Frozen Food Market by Product (Fruits & Vegetables, Dairy, Meat & Seafood), Type (Raw Material, Half Cooked), Consumption, Distribution Channel, and Region (North America, Europe, Asia Pacific, South America, and MEA) - Global Forecast to 2023” by Markets and Markets
Global trade of frozen products has gained significant momentum, fueled by increased consumption of frozen food products in the emerging markets of Asia Pacific and South America.

Other trends, such as packaging and shelf-life improvement present further growth opportunities for the frozen food market. As a result, companies in the food market are investing in technologies to store refrigerated or retorted dough, frozen vegetables and meat, partially-cooked and fully-cooked food for longer durations. While factors such as developments in the retail landscape and technological advancements in cold chain are driving the frozen food market, globally, the preference for fresh and natural food products and the need for maintaining a constant temperature for the sustainability of frozen foods act as key factors restraining market growth.

As per estimates by IMARC, the Indian frozen foods market reached a value of INR 63,140 million in 2017, growing at a CAGR of 18.5% during 2010-2017. The Indian frozen foods market constitutes of frozen vegetable snacks; frozen fruits and vegetables; and frozen meat. These products have been gaining immense traction in India owing to their convenience as they require minimal preparation and culinary expertise to cook.

In 2017, frozen vegetable snacks captured the highest market share in the Indian frozen foods market, accounting for 39% of the total sales. Frozen vegetable snacks were followed by frozen meat products (36%), and frozen fruits and vegetables (25%).

In terms of sales value, North India dominated the Indian frozen foods market in 2017, accounting for 40 % of the total sales. North India was followed by West and Central India (35%), South India (20%) and East India (5%)

<table>
<thead>
<tr>
<th>Sr No</th>
<th>Frozen Food Category</th>
<th>Market Size as on 2017 (INR million)</th>
<th>Key Products</th>
<th>Ranking in terms of market share</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Frozen Vegetable Snacks</td>
<td>24,625</td>
<td>French fries, Bites, Wedges, Aloo tikki, Nuggets, Smileys</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>Frozen Meat</td>
<td>22,730</td>
<td>Chicken, Fish, Pork, Mutton</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>Frozen Vegetables</td>
<td>14,996</td>
<td>Green Peas, Corn, Mixed Vegetables, Carrot, Cauliflower</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>Frozen Fruits</td>
<td>789</td>
<td>Strawberries, Berries, Cherries</td>
<td>4</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>63,140</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: IMARC

As per APEDA, the major export markets for frozen foods from India are USA, Australia, Europe, New Zealand, UAE, Canada, Russia, South Africa, Malaysia, Singapore and Europe. The volume and value of exports of frozen food categories from India has been tabulated below. It can be inferred that frozen meat tops the charts followed by frozen vegetables, frozen RTC products, frozen poultry, frozen potatoes and frozen RTE products in volume terms as on 2018-19 and 2017-18.

<table>
<thead>
<tr>
<th>Sr No</th>
<th>Product</th>
<th>2018-19 Qty (kgs ‘000)</th>
<th>2018-19 Value (INR lacs)</th>
<th>2017-18 Qty (‘000 kgs)</th>
<th>2017-18 Value (INR lacs)</th>
<th>2016-17 Qty (‘000 kgs)</th>
<th>2016-17 Value (INR lacs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Frozen Meat</td>
<td>12,26,600</td>
<td>24,88,412</td>
<td>13,41,382</td>
<td>25,80,057</td>
<td>13,13,954</td>
<td>25,95,992</td>
</tr>
<tr>
<td>2</td>
<td>Frozen Vegetables</td>
<td>35,425</td>
<td>25,665</td>
<td>18,181</td>
<td>13,458</td>
<td>7,227</td>
<td>639</td>
</tr>
<tr>
<td>3</td>
<td>Frozen Ready to Cook (RTC) Products</td>
<td>18,181</td>
<td>13,458</td>
<td>14,707</td>
<td>11,113</td>
<td>32,142</td>
<td>430</td>
</tr>
<tr>
<td>4</td>
<td>Frozen Ready to Eat (RTE) Products</td>
<td>7,227</td>
<td>6,088</td>
<td>4,690</td>
<td>3,590</td>
<td>2,184</td>
<td>2,184</td>
</tr>
<tr>
<td>5</td>
<td>Frozen Poultry</td>
<td>3,679</td>
<td>1,117</td>
<td>1,117</td>
<td>314</td>
<td>1,026</td>
<td>561</td>
</tr>
<tr>
<td>6</td>
<td>Frozen Ready to Eat (RTE) Products</td>
<td>1,897</td>
<td>2,184</td>
<td>430</td>
<td>583</td>
<td>2,383</td>
<td>2,383</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>12,93,009</strong></td>
<td><strong>25,36,446</strong></td>
<td><strong>13,96,752</strong></td>
<td><strong>26,17,664</strong></td>
<td><strong>13,58,641</strong></td>
<td><strong>26,28,091</strong></td>
</tr>
</tbody>
</table>

1.2 Major Growth Drivers

**Demand Drivers for Frozen Foods in India**

- **Convenience** - Consumers are looking for variety of food options that require minimum time for preparation.
- **Changes in lifestyle** - With busy lifestyle and increasing disposable income, Ready-to-cook and Ready to Eat products (RTC/RTE) are fast becoming a homemaker’s daily repertoire.
- **Emergence of the Organized Retail** - Enhanced visibility of frozen food with adequate shelf space, impulse purchase
- **Consumer Behavior** - Price-sensitive, lack brand loyalty, explore novelty and new flavors and respond to in-store product promotions, consistency, hygiene, quality and variety advantages.
- **Packaging Innovations** - Advancement in packaging technology for increasing shelf life, hygiene, and attractiveness.
- **Increased Frozen Storage Space at Consumer’s level** - Frozen space in refrigerators.
- **Growth in QSR segment** - Growth at an annual average rate of 27%
1.3 Key Issues and Challenges in Frozen Food Space

CRITICAL SUCCESS FACTORS

- **Variety** - Huge diversity in food consumption in India results in consumers demanding wide variety in each product.

- **Affordable SKUs** – Preference for products which offer more value for the corresponding price points.

- **Customer education and awareness** - Raising awareness about the quality, value and usage of the product is essential to attract new consumers towards the product.

- **Adequate cold chain, infrastructure & transport facilities** - Cold chain is the backbone of frozen food industry, and it needs to be maintained throughout the transit and storage time.

- **Sufficient space at the distributors’ end** - To showcase frozen food

- **Robust traceability and quality processes** - Meant for export purpose.

- **Working Capital** – Timely access by the manufacturers.

- **Mapping consumer needs to offer the product rather than launching me-too products as available globally.**

CRITICAL CHALLENGES

- **Price sensitivity** among Indian consumers

- **Preference for consumption of fresh food over frozen foods**

- Limited awareness about the **quality, value and usage** of the product.

- Only a few large and specialized companies provide **refrigerated transport and cold storage facilities** at various locations.

- Independent grocers with small neighborhoods stores lack refrigeration facilities - Major roadblock for increasing penetration of frozen food through general trade, which comprises over 90% of overall food and grocery retail - **Last mile connectivity** is found to be highly crucial for successful large scale access to consumer base.

- **Volume Build Up and hence capacity utilization** to attain the financial viability of the plants
Government Support
### 2.1 Key Central Level Schemes

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Name of Scheme</th>
<th>Particulars</th>
</tr>
</thead>
</table>
| 1      | Pradhan Mantri Kisan Sampada Yojana: Cold Chain Scheme – Ministry of Food Processing Industries | • Financial assistance (grant-in-aid) under the scheme is limited to a maximum of INR 10 crore per project in relation to technical civil works and eligible plant & machinery subject to the following:  
  • For storage infrastructure including Pack House and Pre cooling unit, ripening chamber and transport infrastructure, grant-in-aid @ 35% for General Areas and @ 50% for North East States, Himalayan States, ITDP Areas & Islands, of the total cost of plant & machinery and technical civil works will be provided.  
  • For value addition and processing infrastructure including frozen storage/ deep freezers associated and integral to the processing, grant-in-aid @ 50% for General Areas and @ 75% for North East States, Himalayan States, ITDP Areas & Islands, will be provided. |
<p>| 2      | National Horticulture Board                                                  | • Setting up of cold storage (of capacity above 5,000 MT and up to 10,000 MT) and their modernization are eligible for assistance under the NHB Scheme of Capital Investment subsidy for construction/ expansion/ modernization of cold storage for Horticulture Products (a sub scheme under MIDH). Credit linked back-ended subsidy @ 35% of the cost of project (50% in NE, Hilly Areas and scheduled areas) for capacity above 5000 MT. |</p>
<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Name of Scheme</th>
<th>Particulars</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>National Horticulture Mission</td>
<td>• Cold storage (long term storage and distribution hubs) up to 5,000 MT capacity are eligible for assistance under the open ended scheme of NHM/ HMNEH (a sub scheme of MIDH). The assistance is extended as subsidies to credit linked projects @ 35% of capital cost of project in general area and 50% in case of Hilly &amp; Scheduled area.</td>
</tr>
<tr>
<td>4</td>
<td>Small Farmer Agri-Business Consortium (SFAC) assistance to cold storage</td>
<td>• Setting up of cold storage as a part of an integrated value chain project are eligible for subsidy provided the cold storage component is not more than 75% of TFO (Total Financial Outlay). The scale of assistance as subsidy to projects is @ 25% of capital cost and maximum ceiling to INR 2.25 crores in general area and 33.33% and maximum ceiling up to INR 4 crores in case of NE, Hilly &amp; Scheduled area. Integrated Scheme for Agricultural Marketing (ISAM)-Operational Guidelines.</td>
</tr>
<tr>
<td>5</td>
<td>Agricultural and Processed Food Products Export Development Authority (APEDA) assistance for cold chain</td>
<td>• Setting up of cold chain is assisted by APEDA as a part of strategy to develop the industries relating to the scheduled products for export. The Scale of assistance as 40% subsidy subject to a limit of INR 75 lakhs for cold chain projects with mechanized handling system.</td>
</tr>
<tr>
<td>6</td>
<td>Venture Capital by Small Farmer Agri-Business Consortium (SFAC)</td>
<td>• SFAC extends venture capital assistance in form of equity to agribusiness projects. The quantum of SFAC support is 26% of promoter's equity or amount of INR 50 lakhs whichever is lower in general area and 40% of the promoter equity or amount of INR 50 lakhs whichever is lower in Hilly and NE regions. This venture capital is repayable to SFAC after the repayment of term loan.</td>
</tr>
<tr>
<td>7</td>
<td>MIDH Food Processing Unit</td>
<td>• Under Horticulture Mission For North Eastern Region and Himalayan States (HMNEH) a sub scheme of MIDH Food processing units for horticulture products are extended credit linked back ended capital investment assistance of 50% of project cost (ceiling amount of project cost is INR 8 crores) in the States of J&amp;K, Himachal and Uttarakhand.</td>
</tr>
<tr>
<td>8</td>
<td>NABARD Warehousing Scheme</td>
<td>• Loans will be provided for projects involving creation of storage infrastructure, with a minimum capacity of 5,000 MT, for agricultural and allied produce including construction of Warehouses, Silos, Cold storage, Controlled Atmosphere (CA) stores, other cold chain activities like reefer vans, bulk coolers, Individually Quick Frozen units (IQF), chilling/ freezing infrastructure, etc. Modernization/improvement of the existing storage infrastructure projects will be considered on merit of each proposal provided it leads to scientific/additional storage capacity.</td>
</tr>
<tr>
<td>Sr. No.</td>
<td>Name of Scheme</td>
<td>Particulars</td>
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</table>
| 9      | Cold Storage and Fruits & Vegetables Development Program under National Cooperative Development Corporation | • NCDC provides financial assistance to the extent of 90% of the block cost to the State Governments for setting up/ modernization/ expansion/ rehabilitation of cold storages and Ice plants by cooperatives. In case of direct funding, assistance to the extent of 75% is provided.  
• NCDC has also dovetailed its cold storage programme with National Horticulture Board (NHB). In such cases quantum of assistance provided by NCDC is reduced by the subsidy available under the Capital Investment Scheme (CIS) of NHB. The scheme provides enhanced back-ended subsidy @ 40% of the project cost for general and 55% in case of hilly and scheduled areas for maximum storage capacity upto 5,000 ton per project at normative cost @ INR 6,000 / 7,000 / 8,000 per ton as per prescribed standards under the scheme. |  |

### 2.2 Key State Level Schemes

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Name of State</th>
<th>Name of the Scheme</th>
<th>Particulars</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Gujarat</td>
<td>Scheme of assistance of Capital Subsidy for Cold Chain, Food Irradiation Processing Plants and Pack House under Comprehensive Agro Business Policy 2016-2021 and Chief Minister’s Mission on Food Processing</td>
<td>Grant-in-aid @ 25% of cost of the Plant &amp; machinery and technical civil works of bank appraised project cost, subject to a maximum of INR 5 Crores per project.</td>
<td></td>
</tr>
</tbody>
</table>
| 2       | Maharashtra          | Cm’s Food Processing Scheme Package Scheme of Incentives                           | Capital subsidy of 30% of project cost up to INR 50 Lakhs  
Bouquet of Benefits such as Interest subventions, power tariff, tax, stamp duty exemption etc.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |  |
| 3       | Madhya Pradesh       | Setting up of Cold Chain, Value addition and Preservation infrastructure            | Similar to Integrated Cold Chain, Value Addition and Preservation Infrastructure of MoFPI. Subsidy at the rate 50% subject to a ceiling to INR 10 Crores. As this assistance is available in existing scheme of Government of India, the same shall be made available through scheme of Government of India and in case, sanction is not available from Government of India, the assistance shall be provided by the State Government.                                                                                                                                                                                                                                                                                                                                 |  |

Source, MoFPI, NHB, NABARD, NHM, APEDA
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<tr>
<th>Sr. No.</th>
<th>Name of State</th>
<th>Name of the Scheme</th>
<th>Particulars</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Chattisgarh</td>
<td>Development of Integrated Cold chain, value addition and preservation infrastructure for horticulture and non-horticulture produce under Chhattisgarh State Food Processing Mission</td>
<td>Grant-in-aid @ 35% of cost of the Plant &amp; machinery and technical civil works of bank appraised project cost, subject to a maximum of INR 5 Crores per project.</td>
</tr>
<tr>
<td>5</td>
<td>Andhra Pradesh</td>
<td>Cold Chain Project Scheme</td>
<td>@35% of the bank appraised cost up to INR 5 Crores. Interest subvention up to INR 2 Crores over a period of 5 years.</td>
</tr>
<tr>
<td>6</td>
<td>Odisha</td>
<td>Setting up Cold Chain, Value addition and Preservation Infrastructure for non-horticultural produce</td>
<td>35% of the investment made in plant and machinery up to INR 5 Crores.</td>
</tr>
<tr>
<td>7</td>
<td>Haryana</td>
<td>Integrated Cold Chain and Value Addition Infrastructure</td>
<td>35% Capital Investment Subsidy on project cost limited to INR 5 Crores. For reefer vehicles and any other movable infrastructure, assistance of 50% of capital investment subsidy will be limited up to INR 50 lacs per project and up to 4 reefer vehicles/movable infrastructure per project. The support for integrated cold chain and value addition infrastructure shall be applicable only to “B”, “C” and “D” category blocks.</td>
</tr>
<tr>
<td>8</td>
<td>Jharkhand</td>
<td>Setting up of Cold Chain, Value addition and Preservation infrastructure</td>
<td>Grant in Aid- 35% &amp; 50% of the Bank appraised project cost including interest during construction, sub to max of INR 7 Crores per project in General areas &amp; Integrated Tribal Development Project (ITDP) areas respectively.</td>
</tr>
</tbody>
</table>

**FDI IN COLD CHAIN**

Foreign Direct Investment (FDI) is allowed under automatic route in cold storage. External Commercial Borrowing (ECB) can be raised for creation of cold storages, cold room including farm level pre-cooling for preservation or storage of agriculture/horticulture produce. For facilitating the growth of cold chain infrastructure in the sector, following additional support components are considered.

- Reduced excise duty on refrigerated containers, from 12.5% to 6%.

- Reduction of customs duty from 10% to basic 5%, on imports for cold storage, cold chamber and cold chains including pre-cooling unit, pack house, sorting and grading lines and ripening chambers.

- Service tax exemption on the operations like pre-conditioning, pre-cooling, packaging, and transportation of milk.

- Service tax exemption on construction, erection, commissioning or installation of post-harvest storage infrastructure/cold storages.
OTHER TAX INCENTIVES:

• Section 80-IB of the Income Tax Act provides deductions in respect of profits from Industrial undertakings related to Cold Chain. For the first 5 years, the deductions are at 100% and then at 25% for next 5 years.

• Under Section 35-AD of the Income-tax Act 1961, deduction @ 150% is permitted for expenditure incurred on capital investment in setting up a cold chain facility.

• Under Section 35-AD of the Income-tax Act 1961, deduction for expenditure incurred on investment is allowed, if this investment is wholly and exclusively for the purpose of any specified

• Concessional rate of customs duty @ 5% on imported equipment for cold chain facility under the project import benefits.
Recent Trends in Indian Frozen Food Segment
Recent Trends in Indian Frozen Food Segment

3.1 Redefining the role of frozen to convenient meal solutions by product innovations

Demographic and lifestyle changes, combined with improved understanding of individual food needs infer that diets are becoming more diverse. The competing demands of work and home leave people with less time to cook with demand for simple and convenient solutions without compromising quality. The consumers are demanding more innovation in frozen food categories in terms of convenience of streamlining meal preparation, reduced efforts in preparations and greater flexibility during cooking. Products like desserts, Pizza, Biryani, Pre-cut herbs and vegetables etc in frozen form are gaining acceptance. Similarly, the number of allergies and intolerances is on the rise, driving the need for greater product innovations in the frozen category.

3.2 Investments in Perishables Cold Chain to drive the frozen food market

Cold chain infrastructure has played an important role in driving the frozen food market, as it helps to transport products at both the domestic and international level. The domestic demand for fresh and processed fruits & vegetables is increasing, as the consumption habits of the urban population change. This demand is fulfilled using cold chain logistics to maintain the temperature and quality of food products. The rise in the export and import of frozen food is possible due to the strong global cold chain services available in developed economies.

As per 2018 GCCA Global Cold Storage Capacity Report, in 2018, India was the single-largest country-level market in cold storage capacity, at 150 million cubic metres, followed by the US at 131 million cubic metres, and China at 105 million cubic metres. Due to this progression in cold storage capacity, handling frozen food products is becoming more convenient for frozen food manufacturers. Ministry of Food Processing Industries (MoFPI) has sanctioned 286 projects till 31st December 2018 under its Scheme of Cold Chain, Value Addition and Preservation Infrastructure to provide integrated cold chain and preservation infrastructure facilities, without any break, from the farm gate to the consumer. Under the scheme, fruits and vegetables category has witnessed close to 52 % of investments followed by 26 % in dairy (chilled and frozen) and 13 % in Marine and Fishery. Gujarat and Maharashtra together contributed to 29 % of cold chain
investments under the scheme as per MoFPI. Apart from Central level, various states are offering capital grants and fiscal incentives for cold chain investments including frozen food processing as given in section 2.2 on key state level scheme.

3.3 Growth in Organized Retail and Food Services sector to boost frozen food market

National Restaurant Association of India (NRAI) India Food Services Report (IFSR) 2019 estimates the overall Indian food service industry’s market size at INR 4,23,865 crore in 2018-19 which is expected to grow at a CAGR of nine per cent to reach INR 5,99,782 crore by 2022-23. With the emergence of many online food aggregators, a substantial part of the unorganized market has come under the purview of the organised segment and availability of restaurants options for consumers has increased considerably thereby driving the demand.

One of the latest trends driving the frozen food market is online grocery shopping and the introduction of new apps, which makes it convenient for consumers to pick their preferred products. Consumers are inclined towards online shopping due to factors such as convenience and variety. With the growing penetration of the internet and smartphone usage, retail grocery shopping is emerging as one of the platforms for companies to showcase and sell their food products.

Moreover, the number of stores accepting online payments is rising globally. Factors such as increasing smartphone usage, dedicated apps, and emerging payment methods fuel the overall online grocery market, thus contributing to the growth of the frozen food market.
Promoting Investments in Frozen Food Sector in Maharashtra
Promoting Investments in Frozen Food Sector in Maharashtra

Maharashtra being one of the most developed and investment-friendly states shall be the obvious choice for investment into the innovative food processing sector by industry players. Below are some of the key factors which make Maharashtra the most conducive state for investment into frozen food sector.

4.1 Maharashtra: Bowl of Perishable Commodities

Maharashtra state is rich belt of various perishable commodities such as fruits and vegetables, milk, meat and poultry and fish. As per publication "Horticulture at Glance 2016-17" by NHB, in 2016-17, Maharashtra ranked 2nd in fruit production with 103.7 lakh MT production which contributed up to 11% of national fruit production. State ranked 1st in production of Pomegranate and Grapes while it was in top five for Banana, Strawberry, Papaya production. Maharashtra ranked 6th in Vegetable production with 103.6 lakh MT production which contributed up to 6% of national vegetable production. Vegetables such as Onion, Tomato, Capsicum and Chillies are produced in abundant quantities in Maharashtra. In terms of milk production, Maharashtra ranked 7th with total production of 116 Lakh MT accounting for 6% of national milk production.

As per Indiastat, Maharashtra has produced 5.17 Lakh MT of poultry meat in 2018-19 which accounts for 4.5% of national production. State’s production of other meat products such as goat and buffalo meat is about 2.82 Lakh MT. Maharashtra state also has highest production of fish in country with total production of 5.83 Lakh MT in 2018 with 9th rank in country.

Considering the ample production and shorter shelf life of perishable commodities, frozen food processing exhibits great potential to reduce the losses and provide customer with almost fresh, innovative food options round the year.

4.2 Demographic Profile: State of Cosmopolitan Population

Today, Indian customer has started accepting “Frozen is New Fresh” mantra owing to increased working population, improved quality of frozen food and packaging and increased awareness. The acceptance level for refrigerated and frozen food is higher in metropolitan cities than rural areas. Among all the states, Maharashtra cities have cosmopolitan population with varying dietary habits. The cities like Mumbai and Pune attracts people from all over India and globe for employment opportunities as well as tourism.
purpose. This cosmopolitan population is more open to new food products, inclined to eating out and ready to experiment which provides ever increasing potential for frozen processed food.

The categories of frozen food which provides convenience and feel of fresh products are easily accepted by consumer. The frozen/IQF cut vegetables are finding their way into every household’s kitchen due to the convenience and time saving offered by such products. Another category which has seen tremendous growth is RTE/RTE products such as frozen curries, parathas, snacks etc.

4.3 Supporting Infrastructure in Maharashtra

According to a study conducted by NITI Aayog in 2016, Maharashtra is the most progressive state of India, in terms of ease of doing business, considering the Agricultural reforms undertaken by State. The state attracts highest Foreign Direct Investment and private investment amongst the Indian states. Maharashtra state has one of the best road, rail and air network with other Indian cities and other countries across the globe. State has superior trade logistics infrastructure including nine Inland containers (3 under CCI and 6 private), state of the art JNPT port and air cargos. With such state of the art infrastructure, it becomes easier to cater to the demand for frozen food from other states as well as International markets.

4.4 Increased interest from Industry players

As per MoFPI, the state has seen rapid development of cold chain infrastructure for perishables in recent years with almost more than 50 cold chain projects sanctioned under SAMPADA scheme of MoFPI. Additionally, there are food processors such as Jain farm fresh, ADF foods, Godrej Tyson, Tasty Bite, Zorabian Chicken, Nutririte Foods who are manufacturing and supplying/exporting frozen foods from Maharashtra. Being a potential production hub for perishable produce, increasing number of food processors from Maharashtra are entering refrigerated and frozen food processing with advanced technologies like IQF, blast Freezing etc.
Way Forward

Indian Frozen Food Industry - Focus Maharashtra
Way Forward

5.1 Consumer perceptions about Frozen Foods need to be changed

Frozen foods are perceived to be high in additives, preservatives and low on nutrition. However, freezing techniques including Individual Quick Freezing (IQF) ensures minimal processing, better retention of nutrients, texture and freshness of the finished products. Simple freezing leads to the formation of large ice crystals in the cells of the product/produce, thereby leading to loss of nutrients, texture and taste. But IQF prevents that.

The Indian fresh produce ails from a lack of quality standards with a high wastage share. The modern retailers offer fruits and vegetables not only in a raw form but also in cut and packaged form which is again limited to modern retail formats. Huge chunk of products in raw fresh form is sold in unorganized segment. Significant wastage and value loss has been recorded for fresh produce across the supply chain. Frozen is the way to prevent this wastage and providing nutritious processed and long shelf life foods in convenient formats to the consumers. Retailers and consumers need to be educated through off-line and on-line platforms on breaking myths surrounding frozen foods regarding health and nutrition aspects.

5.2 Cold Chain Incentives from Government would boost frozen food processing capacities

FMCG companies are experimenting with newer ready-to-eat products. They are expanding the range of frozen food products in an attempt to diversify. For example, ITC entered the frozen foods and snacks segment by selling frozen prawns under the MasterChef brand. Amul entered this market with its Happy Treats brand. This brand provides six varieties in the frozen potato snacks category, which includes Aloo tikki, French fries, Potato wedges and Veggie stix. Spanish firm Congelados De Navarra along with fertilizer major IFFCO is setting up a quick freezing plant for vegetables in the Ludhiana district, Punjab. Sumeru foods is planning to double their distribution along with launch of innovative products and expansion of their export geographies. Godrej Tyson has already commenced commercial production of their vegetarian Frozen RTE/RTC plant in Ludhiana.

The Government of India has been developing the cold chain industry and supporting private sector participation through various incentive schemes and grants. With Central and State level capex grants and fiscal incentives available for Integrated Cold Chain projects aimed at value addition and preservation, there is scope for companies to avail...
these benefits to improve the viability of their projects in Cold Chain infrastructure space including frozen foods investments.

5.3 Shift of Focus from Export Markets to Domestic Markets and from Frozen Vegetables to Frozen Snack Meals

Frozen foods were largely dependent on export market to earn the revenues. However, due to growing importance of frozen food in domestic market, the domestic sector is set to grow. Indian frozen food industry was only limited to frozen vegetables and French fries. According to an article on Frozen Food in Progressive Grocer 2018, though the frozen vegetables category is expected to grow at CAGR of 18-20 % over next five years, frozen RTEs and RTCs are going to gain strong momentum on account of growth in retail and QSR industry. The increasing availability of frozen products that are high in protein, low in calorie, low fat as well those that address specific dietary requirements such as dairy free, vegan, sugar free, gluten free, plant-based products will make the segment attractive to customers.

5.4 New channels of distribution and food delivery

India is witnessing an explosion of options to the consumer in terms of choice and food delivery models. India is no longer a country that consumes only home cooked food or food ‘at-home’. Millennials are now demanding a plethora of choices driven by the need to keep up with the Joneses and with social media network they are connected globally to the food trends.

The Food delivery companies like Zomato, Swiggy are growing rapidly riding on this new generation demands.

As per Zomato Annual Report FY 19, a synopsis of a survey on food trends reveals the following insights

1. **Chicken Biryani Is Most Ordered Dish**: The delectable slow-cooked meat and rice dish—chicken Biryani—was the most ordered food by Indians on Zomato in 2018.

2. **North Indian Cuisine Most Popular**: Zomato revealed that North Indian dishes were the most preferred by customers all over the country, both while ordering in and eating out.

3. **Most Number of Orders Came from Delhi, Ahmedabad**: Among tier-1 cities, Zomato received the highest number of orders from Delhi NCR, while Ahmedabad came out on top among tier-2 and tier-3 cities.

4. **Indore Had More Midnight Binges Than Mumbai**: In a surprising trend, people in Indore ordered food around midnight from Zomato, more than even people of Mumbai! Guess we now know of another Indian city that never sleeps!

5. **Users Ordered More From Home Than Office**: Yet another surprising online ordering trend showed that people ordered food in at home, much more than they ordered in at their offices. The number of orders received for home deliveries was five times that of office food deliveries! Guess more and more urban Indians like being couch potatoes?

6. **Cash Is Not King?** Cashless transactions were the preferred mode of payment by Zomato users in 2018. Their figures show that only 28 per cent of Zomato users paid by cash for their orders.

These insights indicate that frozen food segment will see an explosive growth driven by the next generation consuming more ‘out-of-home’ food and throughout the day and night; meaning food that now needs to be cooked periodically to have the ‘fresh’ feel and also to be delivered within minutes of being demanded. No wonder that ‘cloud kitchens’ like Rebel Foods; Inner Chef, Burgundy Box, Freshmenu, Box8 and host of other brands are seeing rapid growth especially in metros and Tier II cities.
06 Abbreviations

QSR – Quick Service Restaurant
CAGR – Compounded Annual Growth Rate
APEDA – Agricultural and Processed Food Products Export Development Authority
RTC – Ready to Cook
RTE – Ready to Eat
ITDP – Integrated Tribal Development Projects
NHB – National Horticulture Board
MIDH – Mission for Integrated Development of Horticulture
IQF – Individual Quick Freezing
NRAI – National Restaurant Association of India
MoFPI – Ministry of Food Processing Industries
FDI – Foreign Direct Investment
GCCA – Global Cold Chain Alliance
IFSR – India Food Services Report
SFAC – Small Farmers’ Agribusiness Consortium
SKU – Stock Keeping Unit
CCI – Container Corporation of India
NHM – National Horticulture Mission
NCDC – National Cooperative Development Corporation
CIS – Capital Investment Scheme
ISAM – Integrated Scheme for Agricultural Marketing
HMNEH – Horticulture Mission for North East and Himalayan States
CA – Controlled Atmosphere
NABARD – National Bank for Agriculture and Rural Development