FOOD PROCESSING

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EXECUTIVE SUMMARY

2nd largest arable land in the world
• India has the tenth-largest arable land resources in the world with 161 million tonnes. With 20 agri-climatic regions, all 15 major climates in the world exist in India. The country also possesses 46 of the 60 soil types in the world.

Largest producer of milk
• India is the largest producer of milk and second – largest producer of fruits and vegetables.

Largest livestock population
• India has the largest livestock population of around 512 million, globally. This comprises 119 million milch (in-milk and dry) animals, 80.06 million goats and 44.56 million sheep, as of FY15. The segment contributes about 25 per cent to the country’s farm GDP.

Rising consumption expenditure
• Consumer spending in 2015 was USD1 trillion; it is likely to reach USD3.6 trillion by 2020.

Favourable location for exports
• Strategic geographic location and proximity to food importing nations favour India in terms of exporting processed foods.

Note: GDP - Gross Domestic Product
FOOD PROCESSING

ADVANTAGE INDIA
**Strong demand growth**
- Demand for processed food rising with growing disposable income, urbanisation, young population and nuclear families
- Household consumption set to double by 2020
- Changing lifestyle and increasing expenditure on health and nutritional foods

**Food processing hub**
- India benefits from a large agriculture sector, abundant livestock, and cost competitiveness
- Investment opportunities to arise in agriculture, food infrastructure, and contract farming
- Diverse agro-climatic conditions encourage cultivation of different crops

**Increasing investments**
- Government expects USD21.9 billion of investments in food processing infrastructure by 2015
- Investments, including FDI, would rise with strengthening demand and supply fundamentals
- Launch of infrastructure development schemes to increase investments in food processing infrastructure

**Policy support**
- Sops to private sector participation; 100 per cent FDI under automatic route. Investment in April 2000-March 2016 stood at USD6.82 billion
- Promoting rationalisation of tariff and duties relating to food processing sector.
- Setting up of National Mission on Food Processing
- Foreign Trade Policy 2015-2020

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**Source:** DIPP, Ministry of External Affairs, ASA and Associates, TechSci Research

Notes: 2015E – Estimate for 2015; Estimates are from UBM India Pvt Ltd press release, FDI – Foreign Direct Investment
FOOD PROCESSING

MARKET OVERVIEW AND TRENDS
THE FOOD PROCESSING SECTOR COMPRISSES SIX MAJOR SEGMENTS

<table>
<thead>
<tr>
<th>Sector</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fruits and vegetables</td>
<td>India is the world’s 2nd largest producer of fruits and vegetables. The government expects the processing in this sector to grow by 25 per cent of the total produce by 2025. In 2015-2016, the total production in horticulture sector (fruits and vegetables) is estimated at 282.5 million tonnes.</td>
</tr>
<tr>
<td>Milk</td>
<td>India is the largest producer of milk in the world, with the production estimated at 146.3 million tonnes in FY15.</td>
</tr>
<tr>
<td>Meat and poultry</td>
<td>India is the largest producer of buffalo meat (1.4 MT in 2015) and the second largest producer of goat meat (0.91 MT in 2015). India is also the second largest egg producer (78.4 billion) and third largest producer of broiler meat (4.2 million tonnes in 2016), globally.</td>
</tr>
<tr>
<td>Marine products</td>
<td>Total fish production in India is estimated at 13.0 MT during 2015-16. Andhra Pradesh stood as the largest producer of fish with production of 741.3 Thousand Tonnes during 2015-2016 (upto June 2015).</td>
</tr>
<tr>
<td>Grain processing</td>
<td>India produces more than 200 million tonnes of different food grains every year. Total food grains production reached 270.10 MT in FY16 (As per Ministry of Agriculture).</td>
</tr>
<tr>
<td>Consumer food</td>
<td>Among the fastest growing segments in India; it includes –</td>
</tr>
</tbody>
</table>

**Source:** Indiabusiness.nic.in, Ministry of Agriculture, Directorate of Statistics, APEDA, Indiastat, Meat & Poultry Processing Board, FAOSTAT, Assocham, Department of Animal Husbandry, Dairying & Fisheries, Economic Times (US Department of Agriculture)

Notes: FY – Indian Financial Year (April – March), E- Estimate, (1) - 3rd Estimate, MT - Million Tonnes
The food processing industry is one of the largest industries in India and ranks fifth in terms of production, consumption and exports. As per the latest data available, food processing sector is expected to reach USD258 billion in FY15.

In FY15, food processing industry constituted 14 percent to India’s GDP through manufacturing.

Contribution of food processing industry to India’s GDP through manufacturing (FY16(1))

Source: Ministry of Food Processing Industries (MOFPI), TechSci Research
Note: (1) – Till December 2015, As per latest data available
FOOD PROCESSING

VALUE CHAIN IN FOOD PROCESSING SECTOR AND KEY PLAYERS

<table>
<thead>
<tr>
<th>Inputs</th>
<th>Production</th>
<th>Procurement and storage</th>
<th>Processing</th>
<th>Retailing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seeds, Fertilizers and Farm equipment</td>
<td>Farmers, cooperatives and private companies</td>
<td>Warehouses, cold storage and silos</td>
<td>Grading, sorting, milling and packing</td>
<td>Retail shops, malls, cash and carry</td>
</tr>
</tbody>
</table>

Key activities:
- Inputs: Seeds, Fertilizers and Farm equipment
- Production: Farmers, cooperatives and private companies
- Procurement and storage: Warehouses, cold storage and silos
- Processing: Grading, sorting, milling and packing
- Retailing: Retail shops, malls, cash and carry

Major players:
- National Seeds Corporation Limited, Cargill and Advanta India Ltd
- Farmers, Amul, ITC, Pepsi, Hindustan Unilever Ltd
- Food Corporation of India, NCMSL, Arshiya International
- ITC Ltd, Cargill, Adani Enterprises, Olam International
- General Merchant Stores, Bharti-Walmart, Future Retail, Aditya Birla Retail Limited

Note: NCMSL - National Collateral Management Services Limited
LARGE PRESENCE OF THE UNORGANISED SECTOR

- The unorganised sector accounts for 42 per cent of India’s food processing industry
- The sizeable presence of small-scale industries points to the sector’s role in employment generation
- Though the market falls under the unorganised sector in the country, the organised sector has a larger share in the secondary processing segment than the primary one
- Rice mills account for the largest share of processing units in the organised sector
- In FY15, the organised sector is estimated to account for 30 per cent of India’s food processing industry

Unorganised sector has the largest share in the sector\(^{(1)}\) (FY16)

- Unorganized Sector & Small Scale Industries (70%)
- Organized Sector (30%)

Source: Ministry of Food Processing Industries (MOFPI), Annual Report MOFPI (2015-2016), TechSci Research
Note: \(^{(1)}\) - As per latest data available
FOOD PROCESSING IS A KEY CONTRIBUTOR TO EMPLOYMENT GENERATION IN INDIA\(^{(1)}\)

- Policymakers have identified food processing as a key sector in encouraging labour movement from agriculture to manufacturing.
- By 2024, the food processing sector is expected to employ 9 million people in India.
- This project is expected to generate 8,000 direct and 80,000 indirect jobs in the state.

Healthy contribution to employment generation

\[\text{CAGR: 11.8\%}\]

Source: Ministry of Food Processing Industries
Annual Report 2013-14, TechSci Research
Notes: FY – Indian Financial Year (April – March)
E: Estimated
\(^{(1)}\) As per latest data available.
NOTABLE TRENDS IN THE INDIAN FOOD PROCESSING SECTOR

Changing consumer tastes

- Wide array of products, coupled with increasing global connectivity, has led to a change in the tastes and preference of domestic consumers
- This trend has been bolstered by rising incomes, increasing urbanisation, a young population, and the emergence of nuclear families. Consumer preference is moving towards healthier snacks

Entry of international companies

- Liberalisation and growth of organised retail have made the Indian market more attractive for global players
- With a large agriculture sector, abundant livestock, and cost competitiveness, India is fast emerging as a sourcing hub of processed food. Danone, Nestle, Kraft Foods, Mondelez International, Heinz are the international players in food processing market in India

Rising demand on Indian products in international market

- Strategic geographic location and continuous increase in raw material production help India to supply cheaper products to other countries
- India’s exports of processed food and related items rose at a CAGR of 21.5 per cent during FY11–16(1), accounting for USD19,337.4 million in FY16(1)
- Companies like Haldiram’s and Bikarnerval have a presence in over 70 countries, whereby they provide Indian snacks.

Note: FY – Indian Financial Year (April – March), (1) Data upto December 2015
### NOTABLE TRENDS IN THE INDIAN FOOD PROCESSING SECTOR

#### Higher consumption of Horticulture Crops
- There is a surge in demand for fruits & vegetables as a result of a shift in consumption.
- Accordingly, Indian farmers are also shifting production towards horticulture crops to cash in on the growing demand.

#### Emphasis on Healthier Ingredients
- Food processing companies are serving health and wellness as a new ingredient in processed food, given that health conscious consumers prefer food products with lower carbohydrate content and with low cholesterol edible oils. e.g. zero-per cent transfat snacks and biscuits, slim milk, whole wheat products, etc. ITC is planning to launch multigrain Bingo to increase its share in healthy snacks market

#### Packaging as a Purchase Influencer and Communicator
- Food packaging has enabled today’s consumers to look for various options, and compare the value offerings thereof, before making a purchase.
- Packaging has also helped enhance ‘carry ability’ of products and increase their shelf life.

#### A Shift from Usefulness in Processing to Usefulness to Consumers
- Product innovation is always needed as consumers not only prefer safe ingredients and additives but also useful ones
- This creates opportunities mainly in product innovation, specialised products, and product extensions for the various existing food processors as well as new entrants
- Consumers have become aggressive in demanding better, safer, and convenient food products and are willing to pay a higher price for health and convenience.

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Note: FY – Indian Financial Year (April – March)

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**Frozen and Processed Goodness**

- Frozen processed foods offer both convenience and nutrition.
- The increase in spending capacities and the concurrent time-paucity has led to the continuous development of such frozen processed food products as frozen vegetables (e.g. peas, potato, corn, etc.) and such non-vegetarian products as chicken, fish, and meat products. Food processing market accounts for 32 per cent of the total food market in India.

**Sensible Snacking**

- Domestic consumers are now tuned in to the greater variety of foods available, thanks to both wider variety in offerings as well as their own international exposure. ITC and PepsiCo are shifting their focus on healthier snacks as the market for healthy snacks is growing with double speed.

**Product Innovation as the Key to Expansion**

- It is now the norm for food processing companies to offer value-addition; those who hitherto offered solely milk have now added other dairy products to their repertoire.
- This helps the processors to not only reduce wastage, but also expand uses and realise higher returns. In 2015, Bonhomia has announced to launch ‘Boho’ coffee machines, the company is the first one to manufacture coffee and tea capsule in India.
- In FY16, Ministry of Food Processing Industries has granted fund of USD18.81 million for the ongoing Mega Food Park projects. As on September 2016, a Mega Food Park has been setup by the government in Ludhiana.

**Strengthening Procurement via Direct Farmer-Firm Linkages**

- Contract farming has been operational in India for a long time now; however, the experience of the private sector players involved therein has been a mixed bag of successes and failures.
- Largely, it has helped both the processing companies, via increasing sales and therefore augmenting their incomes, as well as providing access to better technology and fetching better prices by securing an assured market for Indian farmers. examples include Nestlé, PepsiCo, Venky’s, Milkfed, and Mahagrapes, among others.

**Note:** FY – Indian Financial Year (April – March)

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COOPERATIVES DOMINATE DAIRY SECTOR; PRIVATE PLAYERS LEAD OTHERS

- Fruits, vegetables, processed grain
- Milk and milk products
- Meat, poultry and marine products
- Alcoholic beverages
- Aerated soft drinks and packaged drinking water
- Packaged food

Source: Company website, TechSci Research

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AGRI EXPORT ZONES IN INDIA

- Jammu & Kashmir: Apples, walnuts
- Himachal Pradesh: Apples
- Punjab: Basmati Rice, vegetables, potatoes
- Rajasthan: Coriander, Cumin
- Gujarat: Mangoes, vegetables, sesame seeds, onions
- Orissa: Ginger and Turmeric
- Jharkhand: Vegetables
- Kerala: Horticulture products, Medicinal Plants
- Uttar Pradesh: Basmati rice, potatoes, mangoes, vegetables
- Assam: Ginger
- Sikkim: Flowers (Orchids) & Cherry Pepper, Ginger
- West Bengal: Pineapple, lychee, Darjeeling tea, vegetables, mango, potatoes
- Madhya Pradesh: Onions, garlic, seed spices, lentils, wheat, oranges, grams, potatoes
- Maharashtra: Grapes, grape wine, mangoes, flowers, Kesar Mango, onion, pomegranate, banana, oranges
- Andhra Pradesh: Vegetables, mango pulp, grapes, gherkins, chili, mangoes
- Karnataka: Gherkins, rose onions, flowers, vanilla
- Tamil Nadu: Flowers, mangoes, cashew nuts, cut flowers

Source: APEDA, TechSci Research

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## FOOD PROCESSING

### PORTER FIVE FORCES ANALYSIS

<table>
<thead>
<tr>
<th>Competitive Rivalry</th>
<th>Threat of New Entrants</th>
<th>Substitute Products</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Due to a large influence of unorganised sector in the industry, the competition is intense</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Existence of brand loyalty in certain products towards existing firms such as Amul in case of butter limits competition in these products</td>
<td>• Capital Intensive - High investments are required to set up processing units; this acts as an entry barrier for new players</td>
<td>• No close substitutes of products such as milk, fresh fruits and vegetables are available in the market</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Bargaining Power of Suppliers</th>
<th>Bargaining Power of Customers</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Low bargaining power of suppliers as the population largely relies on unorganised sector for products such as milk and vegetables</td>
<td>• Tastes and preferences of consumers in certain products change and hence brand loyalty is low in these products</td>
</tr>
<tr>
<td></td>
<td>• Low switching cost makes consumers switch from one supplier to another</td>
</tr>
</tbody>
</table>
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STRATEGIES ADOPTED
Rising business and product innovation

- Companies have been moving up the value chain; for example, cooperatives are transitioning from being pure producers of milk to offering a wide range of dairy products. In 2015, Amul announced to launch first branded lactose free milk in India.
- Both domestic and global firms have been focusing on product innovation to cater to domestic tastes, while also introducing international flavours; for example Ruchi Soya is innovating by entering into the ready-to-cook segment to meet the needs of people with significant time constraint to provide a rich source of protein in the breakfast category.
- In 2016, Pepsi would begin selling new Diet Pepsi Classic Sweetener Blend containing aspartame and will also continue to sell the aspartame-free versions of Diet Pepsi.

Low-cost price strategy

- Low-cost price strategy is adopted so as to make the product affordable to the consumers by guaranteeing them value for money. The main aim is to provide quality products to the consumers at minimum cost, e.g., Amul Milk.
- Parle and Sunfeast works on their pricing and costs so as to make the products available at economical prices.

Joint Ventures and Tie ups

- In 2015, Zespri International New Zealand based company tied up with Mumbai Dabbawalas to sell new variants of fruits in India.
- Many global and Indian companies are getting into joint ventures to make global products available in India. Starbucks and TATA Alliance is one of the largest joint ventures.
- Bharti Enterprises and Delmonte Pacific Ltd is the largest fresh baby corn exporter in India.
- In 2016, Future Consumers and LT foods entered into a joint venture to enhance manufacturing and distribution of rice and related products across the country.

Source: TechSci Research
STRONG FUNDAMENTALS AND POLICY SUPPORT AIDING GROWTH

**Strong domestic demand**
- Rising disposable incomes
- Growing middle class, urbanisation, a young population
- Changing lifestyles and food habits

**Rising export opportunities**
- India’s greater integration with the global economy
- Increasing exports with advantage of proximity to key export destinations
- Expected spike in global demand as emerging markets grow at a fast pace

**Supply-side advantages**
- Favourable climate for agriculture; wide variety of crops
- Large livestock base aids dairy and meat processing sector
- Inland water bodies, long coastline help marine products

**Policy support**
- Vision 2015 plan targets trebling of food processing sector
- Mega food parks, Agri Export Zones to attract FDI and aid infrastructure
- Approval of National Mission on Food Processing

*Source: Ministry of Agriculture, TechSci Research*
RISING INCOME AND GROWING MIDDLE CLASS TO DRIVE DEMAND FOR PROCESSED FOOD

Rising disposable incomes

• Strong growth in per-capita income has resulted in greater demand for food items
• Incomes have increased at a brisk pace in India and would continue rising considering the country’s strong economic growth prospects. According to IMF, nominal per capita income is projected to grow at CAGR of 4.94 per cent over 2010-19E
• During 2015-19, per capita income is expected to expand at a CAGR of 8.09 per cent
• There has also been a shift in demand:
  • From carbohydrates to meat products (in line with the various phases of economic growth); and
  • To convenience foods, and organic and diet foods
• Strong economic growth since the 1990s has led to:
  • Rapid urbanisation and a growing middle class; and
  • Nuclear families and dual income households
• Coupled with a young population and increasing media penetration, this has led to a surge in demand for packaged food, alcoholic and non-alcoholic beverages, snacks, savouries, etc.

Source: IMF, World Bank, TechSci Research
Notes: E - Estimate, F - Forecast
During FY11–16, India’s exports of processed food and related products (inclusive of animal products) grew at a CAGR of 11.74 per cent, reaching USD16.2 billion.

Main export destinations for food products have been the Middle East and Southeast Asia.

In FY17⁽¹⁾, India’s exports stood at USD1.3 billion.

Exports in USD billion

<table>
<thead>
<tr>
<th>Year</th>
<th>Exports (USD billion)</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY11</td>
<td>9.3</td>
</tr>
<tr>
<td>FY12</td>
<td>17.3</td>
</tr>
<tr>
<td>FY13</td>
<td>21.7</td>
</tr>
<tr>
<td>FY14</td>
<td>22</td>
</tr>
<tr>
<td>FY15</td>
<td>21.5</td>
</tr>
<tr>
<td>FY16</td>
<td>16.2</td>
</tr>
<tr>
<td>FY17⁽¹⁾</td>
<td>1.3</td>
</tr>
</tbody>
</table>

Source: Agricultural & Processed Food Products Export Development Authority (APEDA), DGCIS, TechSci Research

Note: FY – Indian Financial Year (April –March),⁽¹⁾ – Data for April 2016
Rising demand from rest of the world

- Accounting for 28.4 per cent of the overall export value of key processed products, animal and related products accounted for the largest value share in FY16.
- In FY16, share of exports of cereals stood at 38.21 per cent.
- Growth has primarily resulted from:
  - Greater exports to advanced economies; and
  - More demand from emerging/developing economies as they experience strong growth.

Exports of key processed products (USD million, FY15 and FY16)

Shares in APEDA exports (FY16)

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Supply-side advantages

- Growth in food product exports has been aided by:
  - Significant improvements in product and packaging quality; and
  - Greater private sector participation
- India has a location advantage – it is geographically close to key export destinations (Middle East, South East Asia)
- USA is the top destination for processed products from India
- Vietnam, Saudi Arabia, Iran, and UAE are the other major destinations for Indian exports

Major destinations of processed food and agricultural related product exports in FY16 (USD million)

Source: Ministry of Food Processing Industries, APEDA, Ministry of Commerce & Industry, TechSci Research
India’s comparative advantage lies in its favourable climate, large agriculture sector and livestock base, long coastline, and inland water resources.

India also has an edge in cost of production compared to its competitors in Asia and the developed world.

In FY15, milk production is estimated around 146.3 million tonnes.

In August 2015, rice production is estimated around 104.8 million tonnes.

India has a distinct competitive advantage over peers

<table>
<thead>
<tr>
<th>Units</th>
<th>Global rank(1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arable land (million hectares)</td>
<td>2</td>
</tr>
<tr>
<td>Area under irrigation (million hectares)</td>
<td>1</td>
</tr>
<tr>
<td>Coast line (’000 kilometers)</td>
<td>7</td>
</tr>
<tr>
<td>Cattle (million)</td>
<td>1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Food Processing Units</th>
<th>Production (million tonnes) FY15</th>
<th>Global Share(1) (%)</th>
<th>Global rank(1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Milk (Cow &amp; Buffalo)</td>
<td>141.1</td>
<td>17%</td>
<td>1</td>
</tr>
<tr>
<td>Pulses(1)</td>
<td>17.2</td>
<td>21%</td>
<td>1</td>
</tr>
<tr>
<td>Buffalo meat</td>
<td>1.4</td>
<td>42.8%</td>
<td>1</td>
</tr>
<tr>
<td>Bananas</td>
<td>28.1</td>
<td>27.8%</td>
<td>1</td>
</tr>
<tr>
<td>Mangoes and Guavas</td>
<td>22.7</td>
<td>39.0%</td>
<td>1</td>
</tr>
<tr>
<td>Tea</td>
<td>1.1</td>
<td>28%</td>
<td>2</td>
</tr>
<tr>
<td>Rice (Paddy) (1)</td>
<td>104.8</td>
<td>22%</td>
<td>2</td>
</tr>
<tr>
<td>Sugarcane(1)</td>
<td>359.3</td>
<td>21%</td>
<td>2</td>
</tr>
<tr>
<td>Wheat(1)</td>
<td>88.94</td>
<td>15%</td>
<td>1</td>
</tr>
</tbody>
</table>


Note: (1) represents 4th advance estimates
**FOOD PROCESSING**

**STRONG POLICY SUPPORT GIVES FOOD PROCESSING SECTOR A BOOST … (1/2)**

| Encouragement to private sector | • 100 per cent export-oriented units allowed to sell up to 50 per cent of their produce in the domestic market  
• Export earnings exempt from corporate taxes |
| Tax incentives and other sops | • Services like pre-conditioning, ripening, waxing, retail packing, precooling, labelling of fruits and vegetables have been exempted from service tax  
• Excise duty of 2 per cent without CENVAT credit or 6 per cent excise duty with CENVAT credit is imposed on peanut butter condensed milk  
• Import duty scrapped on capital goods and raw materials for 100% export-oriented units  
• Full excise duty exemption for goods that are used in installation of cold storage facilities |
| Relaxed FDI norms | • 100 per cent FDI permitted under automatic route (except for alcohol, beer, and sectors reserved for small scale industries)  
• Repatriation of capital and profits permitted  
• With the recent clearance of Foreign Direct Investment (FDI) in multi-brand food retail, the government is looking to double food processing levels to 20 per cent |
| Mega Food Parks | • The scheme based on “Cluster” approach, which creates a well-defined agri/horticultural processing zone with better support of infrastructure and well-established supply chain  
• Aims at providing mechanisms to link agricultural production to the market by bringing farmers, processors and retailers together  
• Under Union Budget 2015-16, USD19.65 million has been allotted for Mega Foodpark Scheme  
• Final approval has been received for 21 mega food parks, out of which, only 4 food parks are operational  
• As per Union Budget 2016-2017, government allocated USD89.62 million under National Mission to food processing sector |

Source: Ministry of Food Processing Industries, APEDA, TechSci Research  
Note: FDI – Foreign Direct Investment

**JANUARY 2017**

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STRONG POLICY SUPPORT GIVES FOOD PROCESSING SECTOR A BOOST … (2/2)

Focus on infrastructure

- The sector has been assigned priority status for bank credit.
- 60 Agri Export Zones (AEZ) have been set up across the country
- In Union Budget 2015-16, government has announced to make a provision of USD53.8 million to develop infrastructure

Incentives for development of storage facilities

- Investment-linked tax incentive of 100 per cent deduction of capital expenditure for setting up and operating cold chain facilities (for specified products), and for setting up and operating warehousing facilities (for storage of agricultural produce). Till 2015, 112 storage infrastructure projects have been approved, out of which 50 have been completed and 62 are in progress towards completion

Focus on R&D and modernisation

- The government launched initiatives such as for the Setting Up/Upgradation of Quality Control/Food Testing Laboratory, R&D and Promotional Activity scheme and the Technology Upgradation/Setting Up/Modernisation/Expansion of Food Processing Industries Scheme. During 2014-15, 8 food testing laboratories were set up, 20 R&D projects were completed and government allocated USD4.9 million for mentioned initiatives.
- In November 2016, Food Safety and Standards Authority of India (FSSAI) launched a major scheme worth USD 72 million, to address the urgent needs to upgrade food testing laboratories in India.

National Mission on Food Processing

- MOFPI launched a new Centrally Sponsored Scheme (CSS) National Mission on Food Processing to promote facilities for post-harvest operations, including setting up of food processing industries in India. In Union Budget 2016-17, government has announced to spend USD1.1 million in Union territories only

Source: Ministry of Food Processing Industries (MOFPI), APEDA, TechSci Research
Between April 2000 and September 2016, FDI in food processing industry agriculture machinery and in India stood at USD7.316 billion and USD0.440 billion, respectively.

Demand growth, supply advantages, and policy support have been instrumental in attracting FDI.

The government’s main focus is on supply-chain related infrastructure, such as cold storage, abattoirs and food parks.

Cumulative FDI inflows (April 2000 to March 2016) in food and agriculture sector (USD million)

12th Five Year Plan (2012-17) outlay shares:

- National Mission on Food Processing: 44%
- Infrastructure development: 11%
- Strengthening of institutions: 33%
- Food Safety, R&D and Promotional Activities: 3%
- Venture Capital Fund: 3%
- 11th plan projects to be implemented under NMFP: 5%
- Innovation Fund Scheme: 1%

Plan allocation to the Food Processing sector: USD2.9 billion

Source: Department of Industrial Policy & Promotion, TechSci Research
Note: FDI – Foreign Direct Investment
## Major PE investments in food and agriculture

<table>
<thead>
<tr>
<th>Date</th>
<th>Company</th>
<th>Investor</th>
<th>Type of business</th>
<th>Deal value (USD million)</th>
</tr>
</thead>
<tbody>
<tr>
<td>September, 2016</td>
<td>Swiggy</td>
<td>SAIF Partners, Accel Partners, Norwest Venture Partners</td>
<td>Food Delivery</td>
<td>33.80</td>
</tr>
<tr>
<td>September, 2015</td>
<td>Sahayog Dairy</td>
<td>Acumen</td>
<td>Milk producer</td>
<td>1.7</td>
</tr>
<tr>
<td>August, 2015</td>
<td>Cremica</td>
<td>CX-Partners</td>
<td>Manufacturer of Snacks</td>
<td>24.56</td>
</tr>
<tr>
<td>April, 2014</td>
<td>Bikaji Foods International Ltd</td>
<td>Lighthouse Funds LLC</td>
<td>Manufacturer and wholesale snacks</td>
<td>14.9</td>
</tr>
<tr>
<td>July, 2013</td>
<td>VKL Seasonings</td>
<td>India Value Fund</td>
<td>Seasonings</td>
<td>44.19</td>
</tr>
<tr>
<td>July, 2013</td>
<td>Kohinoor Foods</td>
<td>Al Dahra Hordings</td>
<td>Rice</td>
<td>21.17</td>
</tr>
<tr>
<td>June, 2013</td>
<td>Milltec Group</td>
<td>Multiples Private Equity</td>
<td>Technology and machinery developer for agro mills and plants</td>
<td>43.2</td>
</tr>
<tr>
<td>April, 2013</td>
<td>Bush Foods Overseas</td>
<td>Hassad Food</td>
<td>Rice</td>
<td>147.3</td>
</tr>
</tbody>
</table>

Source: Thompson ONE Banker, Assorted news articles, TechSci Research
## FOOD PROCESSING

### RISING PRIVATE EQUITY (PE) FUNDING; M&A ACTIVITY STABLE … (2/2)

<table>
<thead>
<tr>
<th>Date</th>
<th>Target company</th>
<th>Acquiring company/Investor</th>
<th>Type of business</th>
<th>Deal value (USD million)</th>
</tr>
</thead>
<tbody>
<tr>
<td>December, 2016</td>
<td>OFD Holding BV</td>
<td>Mahindra Agri Solutions Ltd</td>
<td>Agri Business</td>
<td>5.49</td>
</tr>
<tr>
<td>March, 2016</td>
<td>Sampo Roselnew Oy</td>
<td>Mahindra and Mahindra Ltd</td>
<td>Combine harvester</td>
<td>20.46</td>
</tr>
<tr>
<td>October, 2015</td>
<td>Diageo</td>
<td>Hieneken</td>
<td>Liquor</td>
<td>781</td>
</tr>
<tr>
<td>July, 2015</td>
<td>Kraft Foods Group Inc</td>
<td>H.J. Heinz Co</td>
<td>Food</td>
<td>46000</td>
</tr>
<tr>
<td>November, 2014</td>
<td>Parry Sugar Industries Ltd</td>
<td>Grandhi Enterprises Pvt Ltd</td>
<td>Sugar</td>
<td>1.5</td>
</tr>
<tr>
<td>November, 2014</td>
<td>Westernland Dairy Pvt Ltd</td>
<td>Milk Mantra Dairy Pvt Ltd</td>
<td>Dairy</td>
<td>1.6</td>
</tr>
<tr>
<td>July, 2014</td>
<td>Siddhi Vinayak Agro Inds Pvt</td>
<td>Anil Life Sciences Ltd</td>
<td>Food</td>
<td>7.7</td>
</tr>
<tr>
<td>July, 2014</td>
<td>United Spirits Ltd</td>
<td>Relay BV</td>
<td>Liquor</td>
<td>1,900.9</td>
</tr>
<tr>
<td>May, 2014</td>
<td>Nashik Vintners Pvt Ltd</td>
<td>Investor Group</td>
<td>Wines and brandy</td>
<td>39.27</td>
</tr>
<tr>
<td>March, 2014</td>
<td>Maroosh</td>
<td>Unilazer Ventures Pvt Ltd</td>
<td>Owns and operates restaurants</td>
<td>2.94</td>
</tr>
<tr>
<td>March, 2014</td>
<td>Shanghvi Brands Promoter Pvt Ltd</td>
<td>Tano Capital LLC</td>
<td>Floor and grain Mill products</td>
<td>9.86</td>
</tr>
</tbody>
</table>
Players such as McCormick had identified India as a strategic market way back in the 1990s

Global players such as Hershey are now keen on entering the increasingly attractive Indian market

Established players such as Nestle and Coke are extending their global JVs to India

<table>
<thead>
<tr>
<th>Foreign players</th>
<th>Indian partner</th>
<th>Type of business</th>
<th>Stake ratio</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>R&amp;R Ice Cream</td>
<td>Nestle</td>
<td>Ice Cream</td>
<td>50:50</td>
<td>2016</td>
</tr>
<tr>
<td>Pepsi-Cola Products Philippines Inc. (PCPPI)</td>
<td>PepsiCo, Inc.</td>
<td>Snacks and beverages</td>
<td>NA</td>
<td>2015</td>
</tr>
<tr>
<td>American Pistachio Growers</td>
<td>VKC nuts</td>
<td>Dry Fruits</td>
<td>NA</td>
<td>2015</td>
</tr>
<tr>
<td>Select Ready Foods</td>
<td>OSI Group LLC</td>
<td>Animal Products</td>
<td>NA</td>
<td>2014</td>
</tr>
<tr>
<td>Kagome and Mitsui</td>
<td>Ruchi Soya Industries</td>
<td>Tomato products</td>
<td>60:40</td>
<td>2013</td>
</tr>
<tr>
<td>Starbucks Corporation</td>
<td>Tata Global Beverages</td>
<td>Beverage</td>
<td>50:50</td>
<td>2012</td>
</tr>
<tr>
<td>Molson Coors</td>
<td>Cobra India</td>
<td>Brewing</td>
<td>NA</td>
<td>2011</td>
</tr>
<tr>
<td>Dan Cake</td>
<td>Phadnis Group</td>
<td>Cake and biscuits</td>
<td>66:34</td>
<td>2011</td>
</tr>
<tr>
<td>McCormick</td>
<td>Kohinoor Foods Ltd</td>
<td>Basmati and food products</td>
<td>85:15</td>
<td>2011</td>
</tr>
<tr>
<td>McCormick</td>
<td>Eastern Condiments</td>
<td>Seasonings</td>
<td>26:74</td>
<td>2010</td>
</tr>
<tr>
<td>Hershey</td>
<td>Godrej</td>
<td>Chocolates</td>
<td>51:49</td>
<td>2007</td>
</tr>
</tbody>
</table>

Source: Thompson ONE Banker, TechSci Research
Note: JV – Joint Venture

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FOOD PROCESSING

OPPORTUNITIES
Untapped market with strong growth potential

- Fragmented market leads to lower processing levels and value addition
- The government plans to raise value addition to 35 per cent by 2015 from 20 per cent in 2005
- PPP modules ideal for the private sector
- Strong demand growth; household consumption set to double by 2020

Potential global outsourcing hub

- Global supermarket majors looking at India as a major outsourcing hub
- India enjoys favourable supply-side fundamentals (abundant raw materials supply, cost advantages)
- The government has helped by investing in AEZs, mega food parks, easier credit
- The establishment of food parks – a unique opportunity for entrepreneurs, including foreign investors to enter in the Indian food processing sector.
- With an investment of USD1.6 billion, process of setting up 42 mega food parks in PPP is underway, as of 2015

Supply chain infrastructure and contract farming

- Both firms and the government are eager to boost efficiency and access to markets
- Investment potential of USD22 billion in food processing infrastructure; 100 per cent FDI in this area
- Firms increasingly taking recourse to contract farming in order to secure supply
- Supply chain infrastructure – this niche has investment potential in food processing infrastructure, the government’s main focus is on supply chain related infrastructure like cold storage, abattoirs and food parks.
The government’s focus and launch of various schemes to provide excellent infrastructure facility in food processing sector open up various opportunity for private investors.

Various schemes launched by the government provide capital grant, subsidy, duty free export of products and tax incentives to investors. These includes schemes such as Mega Food Parks Scheme, Scheme for integrated Cold Chain and Scheme for Modernisation of Abattoirs.

The government’s focus on infrastructure is likely to lead to a sharp rise in the number of cold storage units.

To reduce post-harvest losses of fruits and vegetables, government plans to set up 500 cold chain projects in the country. Moreover, 42 sanctioned mega food parks in the country are likely to become operational by 2018.

Fund allocated for infrastructure development in food processing industry (USD million)

<table>
<thead>
<tr>
<th>Plan</th>
<th>Fund (USD million)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10th Five Year Plan</td>
<td>37.5</td>
</tr>
<tr>
<td>11th Five Year Plan</td>
<td>544.4</td>
</tr>
<tr>
<td>12th Five Year Plan</td>
<td>1,088.5</td>
</tr>
</tbody>
</table>

Project-wise fund allocated in 12th Five-Year Plan (USD million)

- Mega Food Parks Scheme: 677.0
- Scheme for Integrated Cold Chain: 349.0
- Scheme for Modernisation of Abattoirs: 58.1

Notes: PPP – Public Private Partnership, AEZ – Agri Export Zones, FDI – Foreign Direct Investment.
OPERATION FLOOD: INDIA GAINS SELF SUFFICIENCY IN MILK PRODUCTION

• ‘Operation Flood’ was the ‘billion litre idea’ of Dr Varghese Kurien, also known as the Father of the White Revolution. His efforts made India self-sufficient in edible oils as well
• Operation Flood was initiated in 1970 by the National Dairy Development Board (NDDB) to achieve national self-sufficiency in milk production by creating nationwide milk grids
• India became the world’s largest milk producer in FY2000, with the output of 78 MT. It has retained its position since then, with the country’s estimated milk production standing at 146.3 MT in FY15
• As per Government of India, Ministry of Finance, India ranks first in milk production accounting for 18.5 per cent of the world’s production in FY15, recording a growth of 6.26 per cent over FY14
• Dairy cooperatives offer employment opportunities to about 12 million agricultural families

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Dairy cooperative societies (‘000)</td>
<td>13.3</td>
<td>34.5</td>
<td>72.5</td>
</tr>
<tr>
<td>Members (million)</td>
<td>1.8</td>
<td>3.6</td>
<td>9.3</td>
</tr>
<tr>
<td>Milk procurement (million kg/day)</td>
<td>2.6</td>
<td>5.8</td>
<td>11.0</td>
</tr>
<tr>
<td>Liquid milk marketing (million litres/day)</td>
<td>2.9</td>
<td>5.0</td>
<td>10.0</td>
</tr>
<tr>
<td>Milk drying capacity (million tonnes/day)</td>
<td>261</td>
<td>507.5</td>
<td>842</td>
</tr>
</tbody>
</table>

Gujarat Cooperative Milk Marketing Federation (GCMMF) is the largest food products marketing organisation in India.

Set up in 1967, it is India’s largest exporter of dairy products and has been accorded ‘trading house’ status.

During FY16, the Federation recorded the highest growth of 187 per cent in turnover over the last six years, to reach a value of USD3.5 billion by FY16.

Amul is the fastest growing dairy organisation in the world. It has risen to 15th position in the list of dairy companies in the world in September 2014, from 20th position in 2012.

Amul is planning to invest USD24.5 million in Punjab for expansion.

Amul is expected to procure 21.7 thousand tonnes milk per day by January 2016.

As on December 02, 2016, under its brand AMUL, GCMMF announced its plans to sell camel milk, in the country in the next three months.

Source: GCMMF (www.amul.com), thehindubusinessline.com, TechSci Research
Notes: CAGR – Compound Annual Growth Rate, FY – Indian Financial Year (April – March)
FOOD PROCESSING

THE AMUL SAGA: A COOPERATIVE MOVEMENT LEADS THE WAY … (2/2)

* Main brand: Amul

* Products: milk (including flavoured), butter, margarine, cheese, curd, desserts, infant food

<table>
<thead>
<tr>
<th>Facts and features (FY16)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Producer members (million)</td>
<td>3.6</td>
</tr>
<tr>
<td>Village societies</td>
<td>18,600</td>
</tr>
<tr>
<td>Milk processing capacity (million litres/day)</td>
<td>38.0</td>
</tr>
<tr>
<td>Total milk collection (FY15, billion litres)</td>
<td>5.4</td>
</tr>
<tr>
<td>Daily milk collection (FY15, million litres)</td>
<td>14.9</td>
</tr>
<tr>
<td>Milk drying capacity (million tonnes/ day)</td>
<td>860</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Notable awards</th>
<th>Authority</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excellent performance in dairy product exports for 11 consecutive years</td>
<td>APEDA</td>
</tr>
<tr>
<td>CIO International IT Excellence Award (2003) for positive business performance through resourceful IT management and best practices</td>
<td>IDG’s CIO Magazine (USA)</td>
</tr>
<tr>
<td>International Dairy Federation Marketing Award (2007) for Amul’s pro-biotic ice cream launch</td>
<td>International Dairy Federation</td>
</tr>
</tbody>
</table>

Source: GCMMF (www.amul.com), TechSci Research
RUCHI SOYA: ONE OF THE WORLD’S FASTEST GROWING FMCG COMPANY

**Primary focus on crushing and trading activities**
- 2001–04

**Expansion of extraction and refining capacity; focus on branded products**
- 2005–08

**Focus on developing upstream business; secured access to 185,000 hectares of palm plantation; major expansion of refining capacity**
- 2008–15

**Revenues for FY16 are USD4.25 billion**

**Net profit generated in FY16 is USD134.23 million**

**Sales growth at a CAGR of 14.1% over FY11-15**

**Strong presence in Edible oil and meal market**

**Top edible oil producer in India with market share of 18.2%**

**Focus on R&D**

**Acquisitions of companies and plants facilities**

**India’s No 1 cooking oil and soya food maker**

**Launched dal analogue and butter margarine**

**Organic growth phase**

**Strong brands such as Nutrela, Vanaspati and Sunrich**

**Aggressive acquisitions of lands for soya and palm plantations**

**2016: Received approval from Government of Karnataka to set up manufacturing units at Dakshina Kannada as on 10 June 2016**

**2016: Company got ranked among “Top 5 Packaged Food Companies in India”**

**The company is planning to enter in ready to eat food market**

**Source:** News release Ruchi Soya website, TechSci Research

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FOOD PROCESSING

KRBL: LEADER IN GLOBAL RICE MARKET

Salient characteristics

- KRBL is world’s largest rice miller and basmati rice exporter
- It has strong brand presence through global retail giants like Carrefour, Bharti - Walmart, Spencer and Future Group
- It is the largest producer of contract farming basmati rice in the world
- The company accounts for 25 per cent of India’s total exports of branded basmati rice
- KRBL is well-integrated in terms of farming, rice processing, oil production and power generation

<table>
<thead>
<tr>
<th>Year</th>
<th>Sales (USD million)</th>
<th>Exports (USD million)</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY10</td>
<td>337.5</td>
<td>141</td>
</tr>
<tr>
<td>FY11</td>
<td>340.3</td>
<td>182.8</td>
</tr>
<tr>
<td>FY12</td>
<td>349.8</td>
<td>172.8</td>
</tr>
<tr>
<td>FY13</td>
<td>385</td>
<td>211.8</td>
</tr>
<tr>
<td>FY14</td>
<td>485.2</td>
<td>210.8</td>
</tr>
<tr>
<td>FY15</td>
<td>531.4</td>
<td></td>
</tr>
<tr>
<td>FY16</td>
<td>524.9</td>
<td></td>
</tr>
</tbody>
</table>

Source: Company Annual Report, TechSci Research
Note: KRBL - Khushi Ram and Behari Lal

JANUARY 2017

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Agricultural and Processed Food Products Export Development Authority (APEDA)
NCUI Building 3, Siri Institutional Area,
August Kranti Marg, New Delhi – 110 016
Phone: 91 11 26513204, 26514572, 26534186
Fax: 91 11 26526187
E-mail: headq@apeda.com

Marine Products Export Development Authority (MPEDA)
MPEDA House, Panampilly Avenue
PB No 4272, Cochin-682 036
Phone: 91 484 2311979/2311803
Fax: 91 484 2313361
e-mail: mpeda@vsnl.com, mpeda@mpeda.nic.in
GLOSSARY … (1/2)

* AEZ: Agri Exports Zones
* MFP: Mega Food Parks
* CAGR: Compound Annual Growth Rate
* FDI: Foreign Direct Investment
* MT: Million Tonnes
* IIP: Index of Industrial Production
* FY: Indian Financial Year (April to March)
  * So FY12 implies April 2011 to March 2012
* GOI: Government of India
* INR: Indian Rupee
* PPP: It could denote two things (mentioned in the presentation accordingly) –
  * Purchasing Power Parity (used in calculating per-capita GDP)
  * Public Private Partnership (a type of joint venture between the public and private sectors)
GLOSSARY (2/2)

- **PE**: Private Equity
- **APEDA**: Agriculture & Processed food products Export Development Authority
- **GCMMF**: Gujarat Cooperative Milk Marketing Federation
- **USD**: US Dollar
- Wherever applicable, numbers have been rounded off to the nearest whole number
### Exchange rates (Fiscal Year)

<table>
<thead>
<tr>
<th>Year</th>
<th>INR equivalent of one USD</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004–05</td>
<td>44.81</td>
</tr>
<tr>
<td>2005–06</td>
<td>44.14</td>
</tr>
<tr>
<td>2006–07</td>
<td>45.14</td>
</tr>
<tr>
<td>2007–08</td>
<td>40.27</td>
</tr>
<tr>
<td>2008–09</td>
<td>46.14</td>
</tr>
<tr>
<td>2009–10</td>
<td>47.42</td>
</tr>
<tr>
<td>2010–11</td>
<td>45.62</td>
</tr>
<tr>
<td>2011–12</td>
<td>46.88</td>
</tr>
<tr>
<td>2012–13</td>
<td>54.31</td>
</tr>
<tr>
<td>2013–14</td>
<td>60.28</td>
</tr>
<tr>
<td>2014–15</td>
<td>61.06</td>
</tr>
<tr>
<td>2015–16</td>
<td>65.46</td>
</tr>
<tr>
<td>2016-2017E</td>
<td>66.95</td>
</tr>
</tbody>
</table>

### Exchange rates (Calendar Year)

<table>
<thead>
<tr>
<th>Year</th>
<th>INR equivalent of one USD</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>43.98</td>
</tr>
<tr>
<td>2006</td>
<td>45.18</td>
</tr>
<tr>
<td>2007</td>
<td>41.34</td>
</tr>
<tr>
<td>2008</td>
<td>43.62</td>
</tr>
<tr>
<td>2009</td>
<td>48.42</td>
</tr>
<tr>
<td>2010</td>
<td>45.72</td>
</tr>
<tr>
<td>2011</td>
<td>46.85</td>
</tr>
<tr>
<td>2012</td>
<td>53.46</td>
</tr>
<tr>
<td>2013</td>
<td>58.44</td>
</tr>
<tr>
<td>2014</td>
<td>61.03</td>
</tr>
<tr>
<td>2015</td>
<td>64.15</td>
</tr>
<tr>
<td>2016 (Expected)</td>
<td>67.22</td>
</tr>
</tbody>
</table>

Source: Reserve bank of India, Average for the year

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