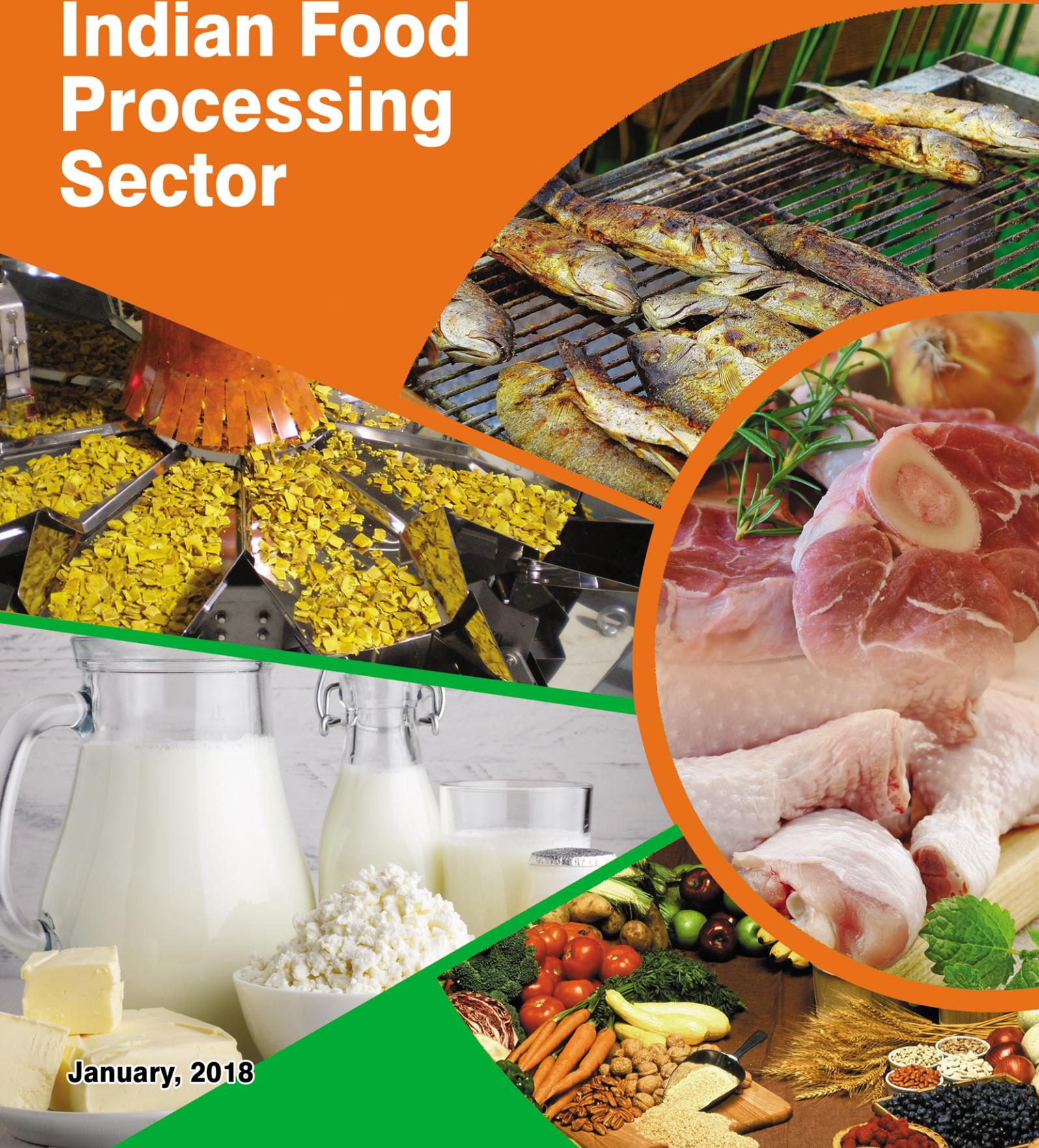


# Indo - UK Partnership: Leveraging Investment Opportunities in the Indian Food Processing Sector



January, 2018



<b>TITLE</b>	<b>Indo - UK Partnership: Leveraging Investment Opportunities in the Indian Food Processing Sector</b>	
<b>YEAR</b>	January, 2018	
<b>AUTHORS</b>	YES BANK and Santander	
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<b>CONTACTS</b>	<p><b>YES BANK Ltd.</b>  <b>Registered and Head Office</b>  9<sup>th</sup> Floor, Nehru Centre,  Dr. Annie Besant Road,  Worli, Mumbai - 400 018  <b>Tel</b> : +91 22 6669 9000  <b>Fax</b> : +91 22 2497 4088</p> <p><b>Northern Regional Office</b>  48, Nyaya Marg, Chanakyapuri  New Delhi – 110 021  <b>Tel</b> : +91 11 6656 9000/0124-4619008  <b>Email</b> : fasarybl@yesbank.in  <b>Website</b> : www.yesbank.in</p>	<p><b>Santander Corporate &amp; Commercial</b>  2 Triton Square,  Regent's Place,  London NW1 3AN  <b>Tel</b> : +44 800 389 7000  <b>Email</b> : andrew.williams1@santander.co.uk</p>



# FOREWORD

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India is at the cusp of a revolution in the food processing industry. A country with 1.3 billion consumers with increasing discretionary incomes and diversifying food patterns offers an excellent opportunity for businesses to engage with the vibrant £305 billion Indian food and food services market with the market expected to reach £500 billion by 2020, it is no surprise that India has emerged as a leading investment destination for both global and Indian food processing companies seeking to enter and expand their footprint in the country.

The Indian food processing industry serves as a vital link between agriculture and manufacturing and is therefore critical to India's socio-economic development. The industry accounts for 9% of India's manufacturing GDP and is the largest employer in the country providing livelihood for nearly 1.5 million persons. The last decade saw India move from a position of scarcity to surplus in food. India will indeed emerge as a global food processing hub over the next decade. The country has the potential to not just feed its billion plus population but to also transform itself into the world's food factory.

The country's strategic location and its diverse raw material base serve as a great impetus for the food processing industry. Its dynamic food market presents a plethora of trade and investment opportunities across the value chain ranging from introduction of novel consumer food products and technology upgradation to establishing cold chain infrastructure.

The Government of India has accorded the food processing industry priority status with a three prong objective of boosting production, reducing wastage and creating the necessary enabling infrastructure. It is increasingly being recognised that a potential boost to food processing would lead to significant savings in wastage reduction while having a cascading impact on farm income. The industry has witnessed significant policy reforms over the past few years including allowance of 100% FDI, access to credit, tax incentives and duty exemptions. The recently launched Pradhan Mantri Kisan SAMPADA Yojana will create £700 million worth of food related infrastructure in the next three years. This alone is expected to leverage more than £3.5 billion worth of private investment in the food processing domain.

The United Kingdom and India share deep historic ties reinforced by strong democratic values and trade relations. Bilateral trade has stabilized at around £16 billion in recent years with food and food processing items contributing about 6% to the basket. This report recognises the respective inherent strengths of British and Indian food processing and provides an overview of trade and investment opportunities in India's food processing industry. It describes key challenges and highlights the enormous potential for growth in key subsectors of the food processing industry. This report will be beneficial to all stakeholders in the trade, industry and policy landscape of both nations.

We would like to take this opportunity to thank Santander Bank for sharing their insights incorporated in this report and applaud their commitment to further strengthen India and United Kingdom's longstanding partnership, particularly in the food processing domain. We remain confident that Indo-UK bilateral trade and investment will grow manifold in the coming decade with a larger share of food industry in the basket.

Sincerely,

**Nitin Puri**

Senior President

Food and Agribusiness Strategic Advisory & Research (FASAR)

YES BANK Ltd.



## FOREWORD

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The Indian Food and Drink sector is in an extremely dynamic position currently. This can be attributed to the demands of feeding a large population, changing demographics, consumer demand, regeneration, heightened awareness on food safety and the growth of internal and foreign investment.

At the core of this sector is the processing and manufacturing of goods that allows the industry to thrive. You may well have heard the impressive statistics on levels of GDP, barriers to entry being removed and levels of investment being put directly into the sector, yet levels of food processed are still low and food wastage remain very high. The commitment being made in India to tackle this should not only bring comfort to those researching the market but also help underline the country's future ambitions and strategic goals.

India's ambition on food processing covers the entire supply chain. Care and consideration is not only being applied to the manufacturing sites producing goods but also to key areas such as; agriculture and horticulture, warehousing and logistics, cold chain infrastructure, food standards, education and training etc. India has taken a holistic view on how to best position itself to create a long term, mutually beneficial relationship for the consumer and investors.

From UK's perspective, the manufacturing sector makes up 10% of our GVA, 45% of overall exports and currently employs 2.7m people. The Food and Drink sector is the top performing export subsector of UK manufacturing, with exports reaching £20.2 Bn in 2016 and projected to grow again this year.

With a significant consumer market, 100% foreign investment allowance, various tax and duty exemptions, the allocation of land for the creation of foodparks and states being increasingly competitive with one another, it's clear there is a fantastic opportunity in to help UK companies better understand the Indian market.

As you will see in our report, we have taken the time to detail examples of local investment opportunities currently available in this sector and provide insights to help UK companies better understand the Indian market.

Santander recently concluded a partnership arrangement with YES BANK. One of the key reasons for this was the alignment of sectoral expertise, with Food, Drink & Agribusiness being top of the list. YES BANK has, we believe, one of the strongest Food & Agribusiness teams in India. This, combined with other market partners that we have identified, provides Santander's clients with a unique support infrastructure to achieve their international ambitions in India.

I would like to thank YES BANK for their continued support in building a strong alliance between our two countries and making opportunities like this available to the UK. We hope you enjoy the content of this report and we look forward to assisting you as you look to trade with and / or invest in India.

Yours Sincerely

**Andrew Williams**

UK Business Development Director – Food & Drink  
Santander Corporate and Commercial Banking.



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# 1. Indian Food Processing Industry: An Overview





## 1. Indian Food Processing Industry: An Overview

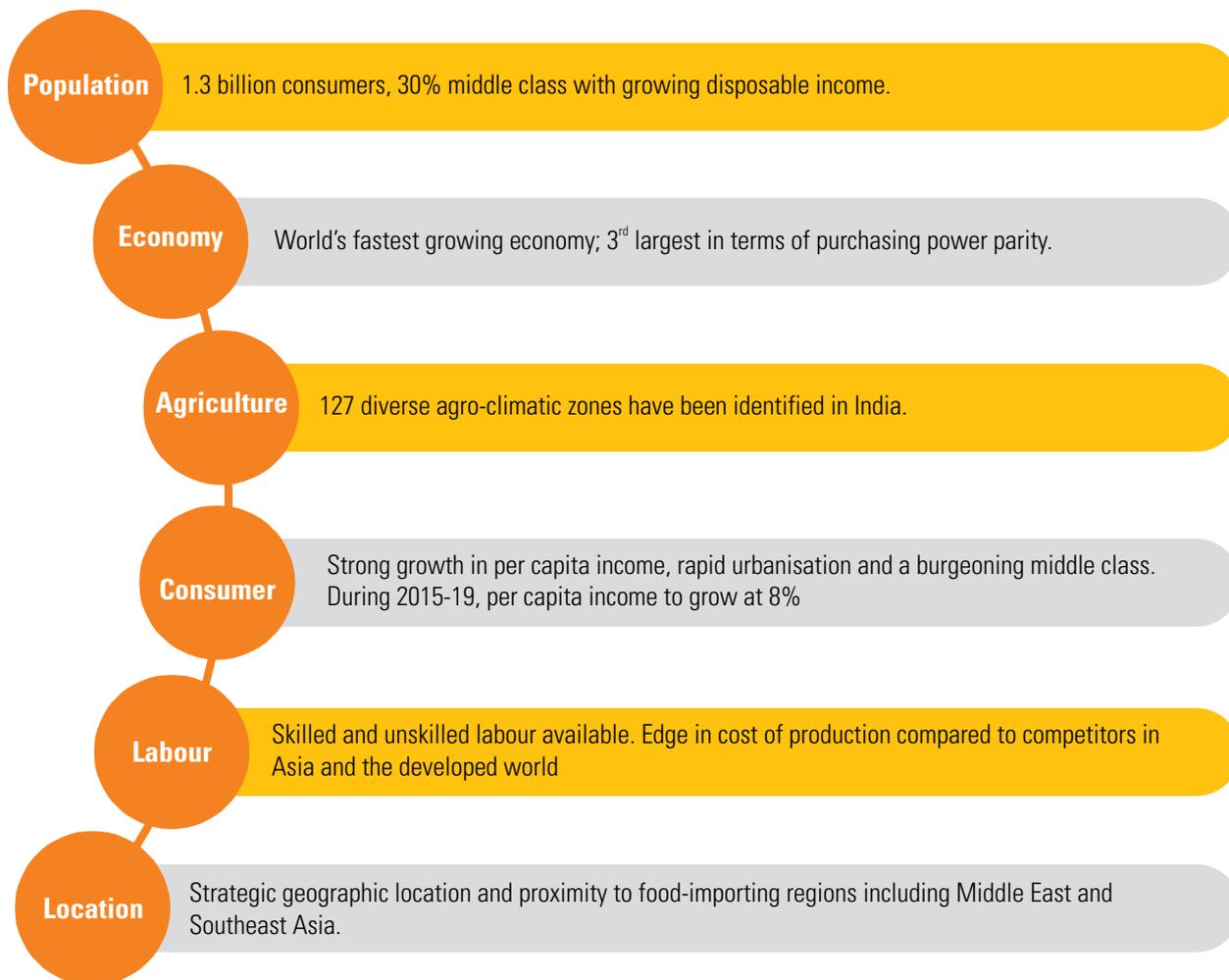
A dynamic nation of 1.3 Billion consumers with rising discretionary incomes, changing food patterns, and an encouraging policy regime offers a £228 Billion food market to explore opportunities for value creation. The Indian food processing industry accounts for 9% of India's manufacturing GDP and is the largest employer in the country providing livelihood for nearly 1.5 million persons. A stable policy and encouraging tax & investment reforms, such as the recent introduction of the "One Nation One Tax" Goods and Services Tax (GST), along with the Make in India campaign, make this an opportune time for new entrepreneurs and food companies seeking to establish and widen their footprint in a fast moving economy.

The Indian food processing sector is typically classified into six categories: dairy, marine, meat & poultry, fruits & vegetables, grains and consumer food.

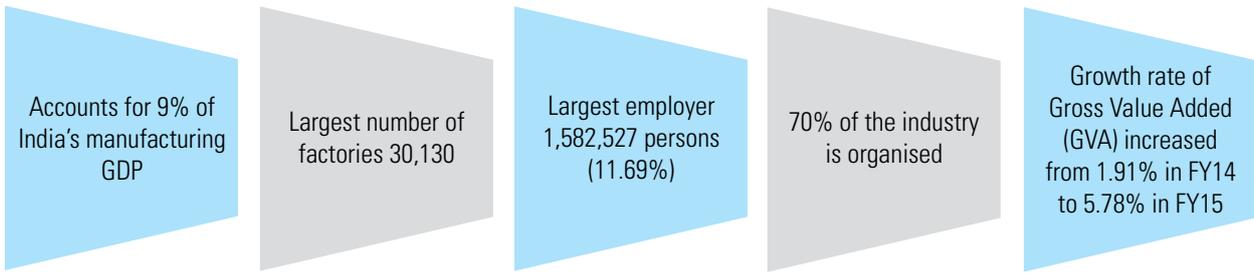
- India is a global leader in milk production, producing over 155.5 Million Tonnes of milk in FY16 and is projected to grow at 13-15% CAGR in the coming years.
- India is 2<sup>nd</sup> in global fish production, producing 10.8 million tonnes in FY16 exhibiting 12.5% and 13% fishery production and export value growth respectively.
- India has the world's largest population of livestock, while it is 3<sup>rd</sup> in egg and 5<sup>th</sup> in meat production, having produced 83 billion eggs in 2015 and 7 million MT of meat in FY16
- India is the second largest cereal producer with 270 million tonnes production in FY16 and is the global leader in cereal exports, led by rice.
- India has a nascent yet booming health, organic, fortified and ready to eat packaged food sector. The increase in consumption of convenience foods is primarily driving the food packaging market
- India is the second largest producer of the Fruits and Vegetables in the world with a total production of 269 million MT

The unorganised sector in India forms a major part of the food processing industry (42%) followed by small scale industries (33%) and the organised sector (25%). The recent GST reform is expected to be a major facilitator for increasing the share of organised sector and bring in more players into the organised trade ambit.

## Advantage India



## Trends in Food Processing Industry



Diet shift from carbohydrates to milk, meat and pulse proteins

Diet shift to convenience, organic, ready-to-eat and healthy food

High wastage levels due to lack of storage and transport infrastructure:

- Fruits & vegetables 4.6-15.9%
- Marine produce 15.7%
- Poultry 6.7%
- Meat 2.7%

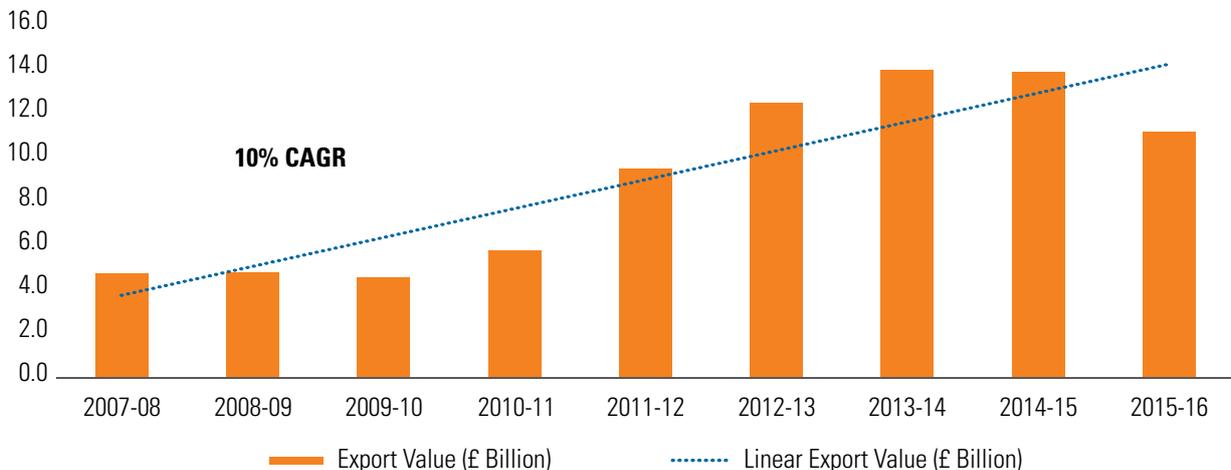
Low Processing levels in India at 10% vs. 80% in US & Malaysia:

- Fruits & vegetables 2%
- Marine produce ~ 23%
- Poultry ~ 6%
- Meat ~ 21%

## Trade Scenario

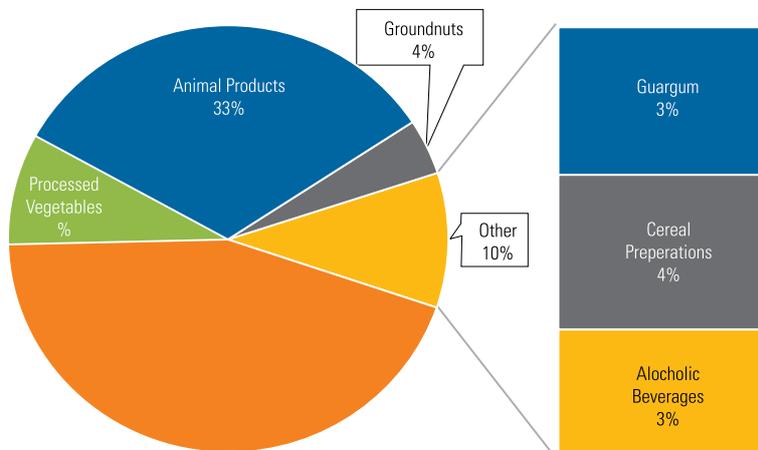
India has emerged as a leading exporter of food products given the abundance of raw material, its cost competitiveness and enviable strategic location. Total processed food exports were worth £11.24 Billion in FY16 led by onions, grapes, cucumber, buffalo meat, groundnuts, guar gum and rice. During 2008-2016, exports grew at 11% with major destinations including USA, Middle East and Southeast Asia. The exhibit below provides a snapshot of India's food exports.

### India's Processed Food Export Growth (£Billion)



Source: Ministry of Food Processing Industries

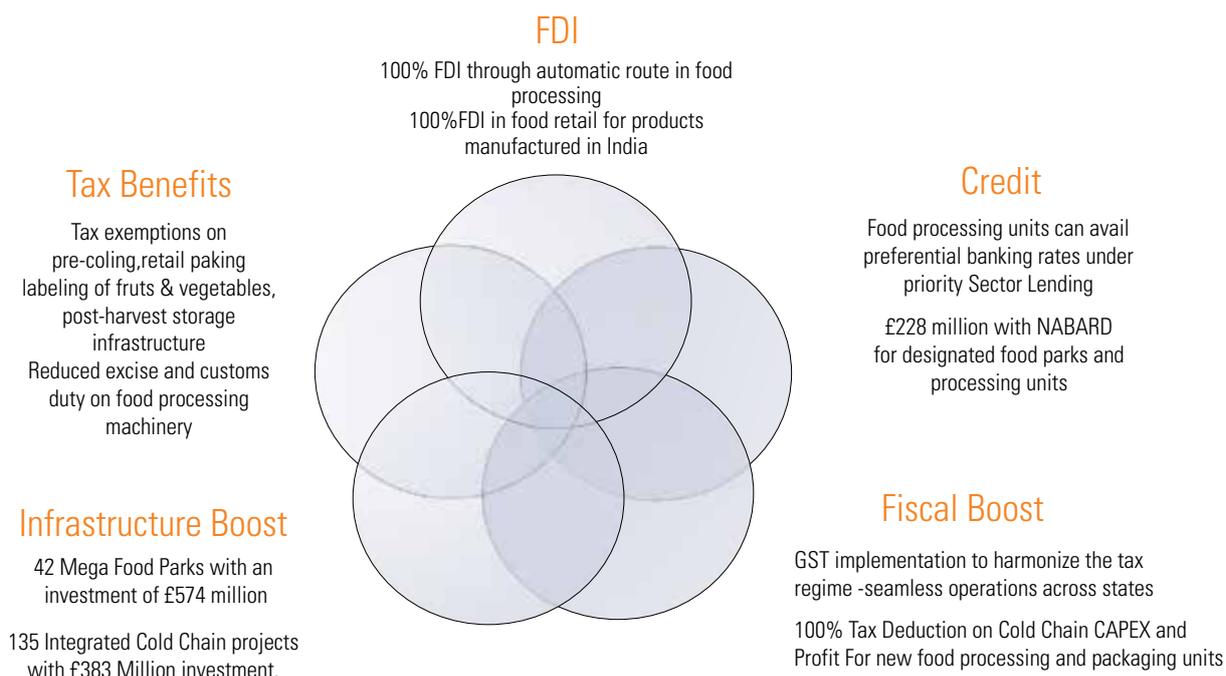
### India's Processed Food Exports 2015-16



Source: Agricultural and Processed Food Products Export Development Authority (APEDA)

### Policy and Fiscal Incentives

The Indian Government has implemented various policy measures recognising the importance of Food Processing to its GDP, employment, farm production and food security. The two major authorities governing the policy and regulatory environment for the sector are Ministry of Food Processing Industries (MoFPI) and The Food Safety and Standards Authority of India (FSSAI). Ministry of Food Processing Industries (MoFPI) is the nodal ministry of the Government of India for formulating and implementing policies to promote food processing. Changing domestic consumption patterns due to urbanisation and increasing disposable incomes, along with rising export opportunities prompted the MoFPI to release a Draft National Food Processing Policy in March 2017. Once notified, the current draft will become a Model Act providing states an enabling framework to boost growth in the food processing sector. The exhibit below captures key incentives and policy measures taken by the state to promote food processing in the country.



## Opportunities

The Indian food processing sector presents excellent investment opportunities across the value chain. Increasing awareness and demand for quality provides a strong opportunity for value addition in fortified food, organic food, health food and convenience food categories. Favourable government policies to boost private investment in infrastructure offers tremendous scope for venturing into food parks, refrigerated trucks, cold storage, warehousing and abattoirs. On the technology front, there is potential to enter the processing equipment and food testing domains as well as to develop innovative packaging solutions to increase shelf life and appeal. The exhibit below provides a snapshot of opportunities across key subsectors.

### Fisheries

- Value addition and product development especially Ready To Eat/Ready to Cook products
- Indian flavored products such as shrimp pickle, pre-marinated spiced fish
- Infrastructure development such as fishing harbors

### Fruits and Vegetables

- Value addition and product development especially Ready To Eat/Ready to Cook products
- Indian flavored products such as shrimp pickle, pre-marinated spiced fish
- Infrastructure development such as fishing harbors

### Cold Chain

- Multipurpose cold storage
- Temperature controlled refrigerated vans

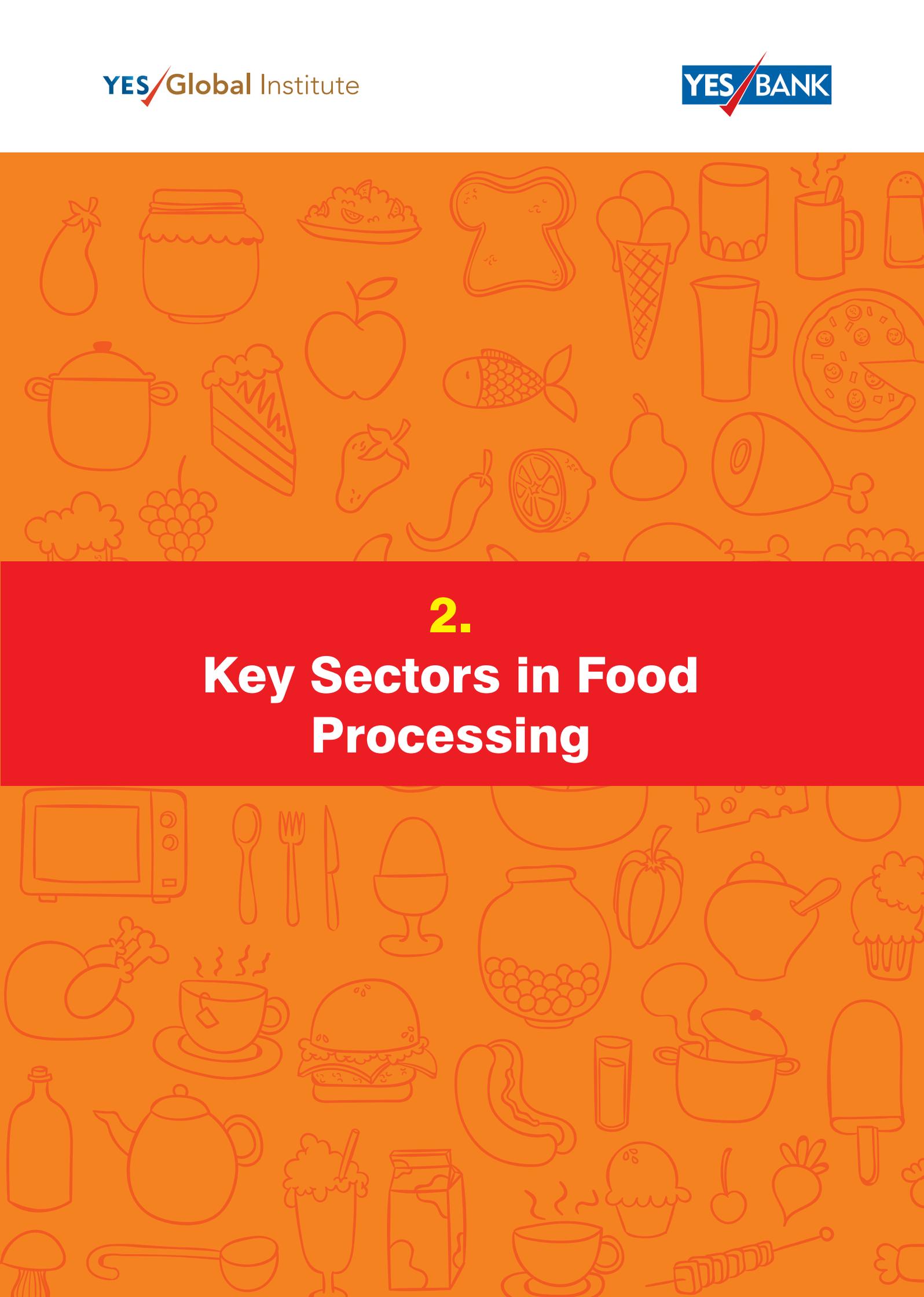
### Dairy

- New product development in value added products - cheese, flavored milk, yogurt and other ethnic Indian products
- Cattle Feed, Veterinary care technology
- New technology in value added dairy processing
- Cold chain - storage & transportation

### Meat and Poultry

- New products-value added products like frozen/chilled products, RTC/RTE, Indian ethnic products/snacks
- Egg powder plants
- New poultry feed formulations
- Modern abattoirs and hatcheries

The subsequent chapters will address each of the aforementioned sectors in greater detail.



## 2. Key Sectors in Food Processing



## 2. Key Sectors in Food Processing

### FISHERIES

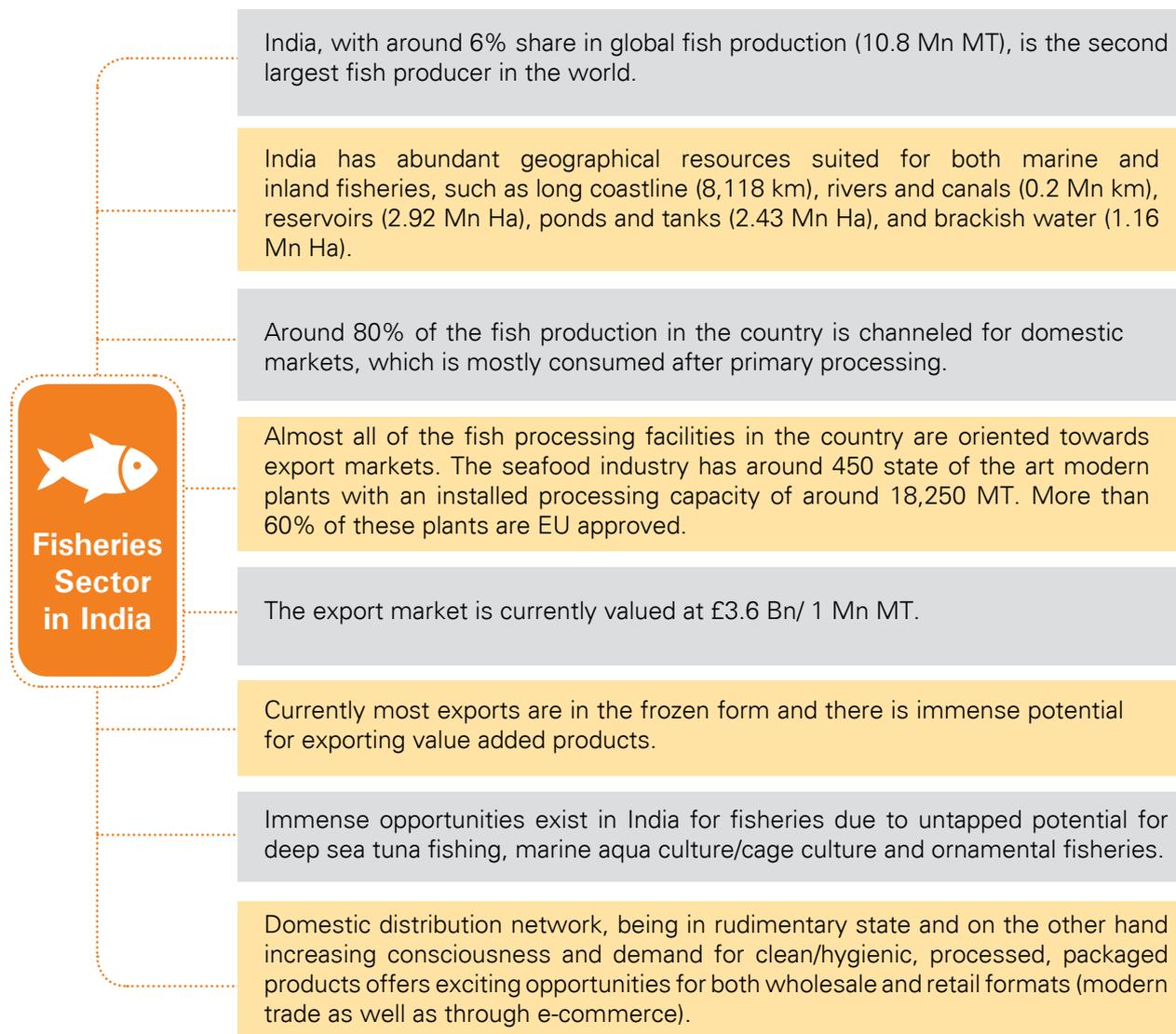
India is the second largest producer of fish in the world (after China) and contributes around 6% to the total global fish production. The sector is a source of livelihood for over 14 Million Indians and contributes to about 0.9% to the National Gross Value Added (GVA) and 5.3% of agriculture GDP (in the year 2015-16). Starting from a purely traditional activity in the early fifties, fisheries and aquaculture have now transformed into a significant commercial enterprise in India. Apart from meeting the domestic demand, the Indian seafood industry is also a major player in the global seafood trade, exporting wide range of products and hence a source of major foreign exchange earner.

Indian fisheries sector is valued at £13 Bn with a total production of 10.8 Mn MT in the year 2015-16. The production has been growing at a CAGR of ~5% (2011- 12 to 2015-16). Domestic consumption contributes to about 72% of the total market value while exports contribute to the remaining 28%.

Over 65% of the total production in the country is contributed by inland fish production (aquaculture) and the remaining by marine (captured fish). The share of production from aquaculture vis-a-vis capture rose to 65-70% in year 2015-16 as compared to 37% in the year 2002. Similarly, aquaculture products contributed 70-75% to the country's overall exports in 2015-16.

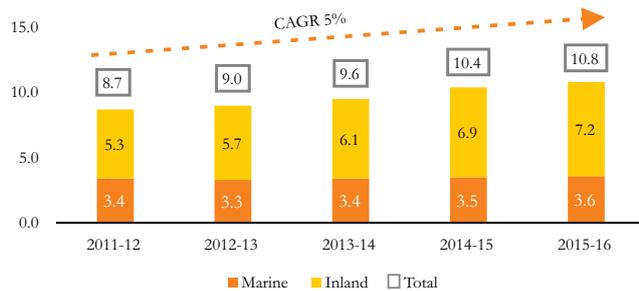
India's domestic market of fish is primarily unorganised and confined to the wet market. The size of domestic market in the year 2015-16 was estimated to be about £9.26 Bn. Domestic market is primarily dominated by capture fisheries (both marine and inland) accounting for around 80-85% of the total domestic sales. However, realisations are impacted by the availability of fish, which are seasonal in nature. The lower share of aquaculture in domestic consumption is because of traditional preference for marine fish such as pomfret, mackerel, hilsa, rohu, seer fish and catla.

Domestic fish production increased by 1 Mn MT while its value increased by £3.6 Bn in the last five years. Between 2010-11 and 2015-16, the domestic market grew at 12.8% CAGR in value terms and 3% in volume terms.



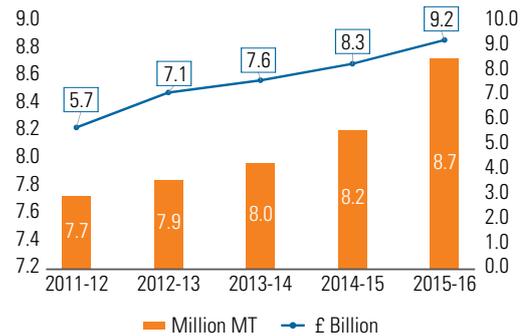
India exported ~950,000 MT of fish and aqua products valued at £3.6 Bn in the year 2015-16. India's export market is primarily dominated by frozen shrimps, cuttle fish, frozen squids and dried fish. The top 5 products in India's export basket accounted for 85% in volume and 90% in value terms. Frozen shrimps dominate the export basket of fishes and aqua products contributing around 40% of the total export volume and 66% of the value (£2.3 Bn) in the year 2015-16.

**Production of Marine and Inland fish in Mn MT**



Source: Department of Animal Husbandry Dairying and Fisheries

**Domestic Market Size of Fish in Last Five Years (in '000 MT)**



Source: Food and Agriculture Organization, CRISIL Research



## Growth Drivers, Challenges and Opportunities

### Growth Drivers in the Fisheries Value Chain

- Global demand for seafood is increasing from the Asian market due to large aquaculture base and capacity to fulfill the upsurge in demand
- Rising demand from major seafood importers- USA, EU, Japan, China and Middle Eastern countries
- Increase in income level and health awareness; the preference for seafood over other lower-cost dietary sources for protein (white and red meat) is expected to increase
- Increasing export potential in both capture and culture fisheries
- Induction of new technologies, modernisation of processing facilities and development of infrastructure

### Challenges

- Production of quality broods and genetic improvement of existing species
- Diversification of aquaculture species
- Inadequate fish feed production facilities and lack of species specific feed products
- Lack of advanced fish and shrimp farming techniques
- Lack of modern infrastructure for fishing crafts and / nets making for capturing fish
- Poor cold chain facilities
- Processing & value addition
- Distribution and marketing
- Inadequate small scale fish handling and processing equipment

### Opportunities

#### Establishment of fish & shrimp feed manufacturing units

- Current fish feed production is 1 Mn MT in India and offers a potential of 7 Mn MT

#### Setting up of processing infrastructure

- Processing plants
- Value added fish production centre

#### Establishment of cold chain facilities

- Ice plants
- Cold Storages
- Refrigerated vans

#### Installation of packaging units

- Increasing demand of hygienic packaged fish products, crabs, ornamental fishes may attract investors in setting up of integrated packaging units

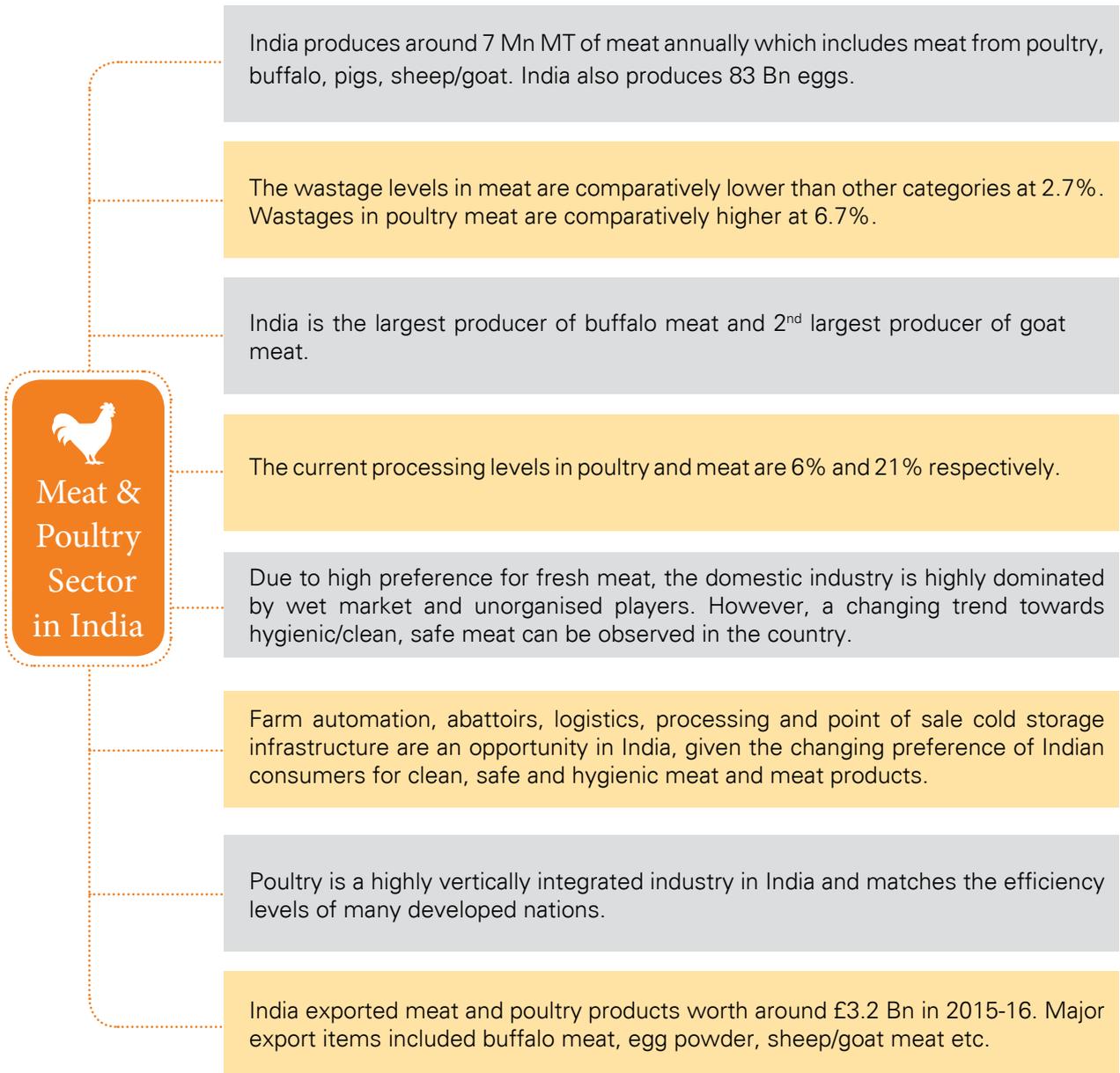
#### Fish/ aqua care and feed supplements

- Semi intensive and intensive aquaculture requires various medicines, probiotics and feed supplements

#### Integrated unit for farming and processing of fish/ shrimp

- Species for culture - Carps, Tilapia, Pangasius, Cobia, Sea bass, Vannamei, Tiger prawn
- Hatcheries & nurseries
- Commercial feed mills
- Culture system- Cage Recirculatory Aquaculture
- Processing value addition and Packaging
- Branding and Marketing

## MEAT AND POULTRY



### Key Statistics

Commodity Production  
7 Mn MT (Meat)  
83 Bn Eggs

Output value  
£13 Bn for poultry and  
£10.6 Bn for meat (buffalo, pork and mutton)

Global Production Position  
4<sup>th</sup> - Meat  
6<sup>th</sup> - Poultry

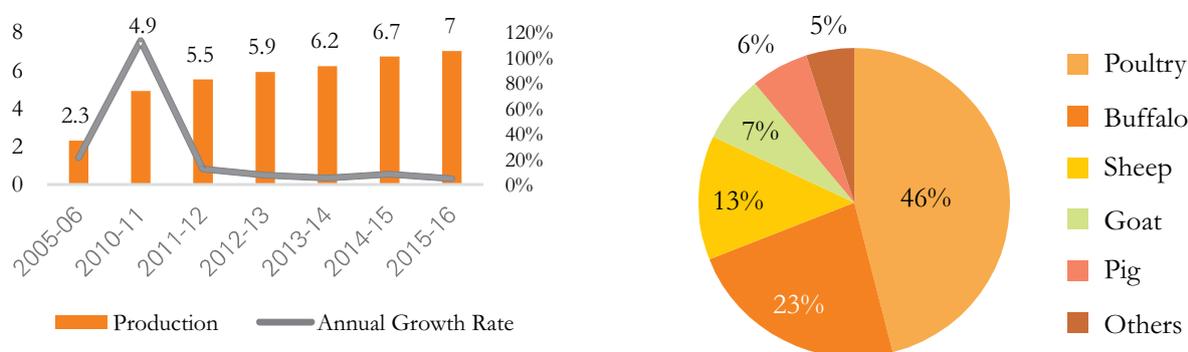
% of Commodity Processed  
6% Poultry  
21% Meat

Export Value  
£3.2 Bn

India has the world’s largest population of livestock and a large part of it is contributed by small and marginal farmers who own one to two animals. Livestock plays a vital role in the agricultural economy and is a key contributor to the socioeconomic well-being of rural masses. According to the 19th livestock census, there are about 300 Mn bovines (cattle, buffalo, yaks, and mithun), 65 Mn sheep, 135 Mn goats and about 10 Mn pigs in India.

The total meat production in India currently stands at about 7 Mn MT (2015-16) and has witnessed a growth of 6.2% in the last five years (2011-12 to 2015-16). The meat industry in India can be broadly classified into two segments: poultry (46%) and meat from other animals including buffalo (23%), pig (6%), lamb and sheep (20%). This chapter provides an overview of India’s meat sector including its trade scenario, and further delves into the pork meat segment.

**Meat Production (in Mn MT), Annual Growth (%) and Contribution of Various Species in Meat Production**



Source: Department of Animal Husbandry Dairying and Fisheries Annual Report, 2015-16

**Poultry Meat**

The £10 Bn poultry meat industry in India is highly integrated with organised players capturing 70% of the market. Organised players consist of integrators present across the value chain from poultry feed and farming to processing and packaging of chicken. However, the largely credit-driven market remains volatile and replete with disease outbreaks and overuse of antibiotics. The major players in the industry are Suguna Foods, Venkateshwara Hatcheries, Godrej Tyson Foods, Gold Chick Hatcheries, Srinivasa hatcheries and Simran farms. Suguna Foods is the market leader with around 20% market share followed by Venkateshwara hatcheries. Indian consumers continue to prefer fresh meat which explains the dominance of live or wet trade in the poultry market.

**Sheep and Goat Meat**

The £6.8 Bn mutton industry largely consists of sheep and goat meat. The market is highly fragmented and dominated by small farmers who sell their animals in the live market to local traders and butchers.

**Buffalo Meat**

The £3 Bn beef industry mainly consists of buffalo meat exports. Buffaloes contribute around 23% to the country’s total meat production. The major meat production centres in the country for exports are Aurangabad; Nanded; Mumbai and Satara in Maharashtra; Goa; Zaheerabad and Medak in Telangana; Derabassi in Punjab; Barabanki, Unnao, Aligarh, Meerut, Saharanpur, Noida and Ghaziabad in Uttar Pradesh; Mourigram in West Bengal; and Gurgaon in Haryana. The major organised players are typically large exporters including Allansons Ltd, Al Kabeer and Hind Agro Industries.

## Pork

The Indian pork market comprises of two main segments –wet and processed. Around 95% of pork is available in fresh form in the wet market while processed and packaged pork constitutes less than 5% of the total market. The current market size is estimated at about £0.68 Bn. The processed sector mainly caters to institutional demand from the HORECA segment (60%) comprising of high end hotels and restaurants in India which serve pork products such as ham, bacon, chops and sausages to their customers.

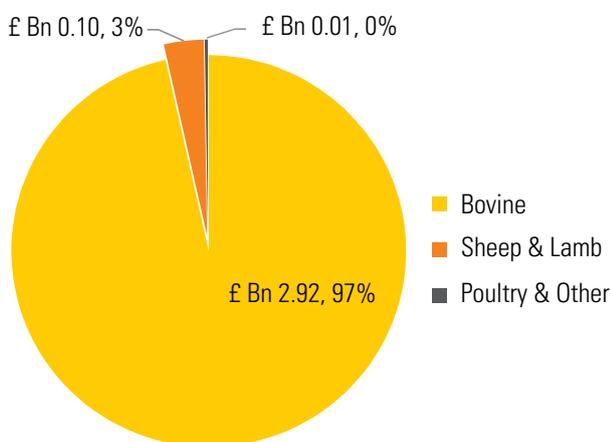
Pig rearing remains largely unorganised under free range conditions carried out by the poorer sections of the society. The per capita consumption of pork meat in India is negligible at about 0.1 kg/annum owing to socio-cultural and religious predispositions of the population. However, the North Eastern region of the country stands as an exception where pork consumption has been historically high and continues to grow steadily. The Eastern and North Eastern states together account for 67% of India’s pig livestock (2012) and around 66% of the total pigs slaughtered in the country (2015-2016). The average meat yield in India is around 40 Kg per pig.

## Trade

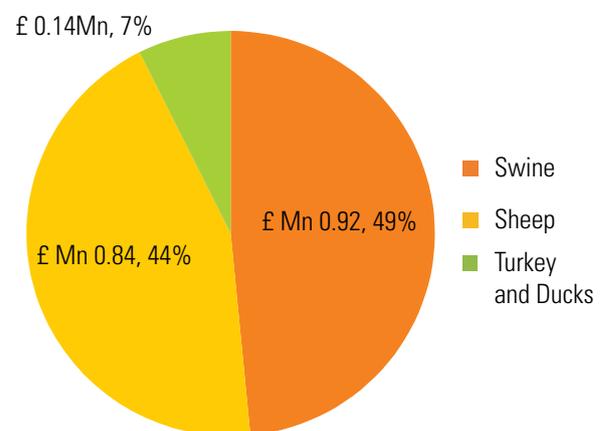
India’s meat trade policy remains focused on protecting its domestic industry by discouraging imports while promoting exports. It utilizes various tariff and non-tariff barriers to affect trade which is reflected in decadal trade figures, dominated by exports worth nearly £3 Bn and relatively negligible imports worth £1.9 Mn (2016). Rising demand for low-cost meat from developing nations over the last decade has propelled India’s growth in the meat segment. It exported meat worth £3 Bn in 2016, led by Bovine exports worth £2.9 Bn followed by Sheep carcasses worth £79.5 Mn. India is currently the leading exporter of water-buffalo beef and sheep carcass, capturing more than 20% and 40% of the world export market respectively.

India imports limited quantities of meat which typically consists of pork (swine) and lamb (sheep) meat, each worth around £0.9 Mn (2016). The demand for imported meat has been steadily increasing from the high-end hospitality and retail segment. This is reflected in the 19% annual growth witnessed in frozen pork imports from 2012 to 2016. Major imported products include pork chops, tenderloin, bacon, sausages and lamb chops. The Department of Animal Husbandry, Dairying, and Fisheries (DADF) and India’s food regulatory agency (FSSAI) together regulate the import of livestock products.

**India’s Meat Export By Value (£Billion)**



**India’s Meat Import By Value in £Mn**



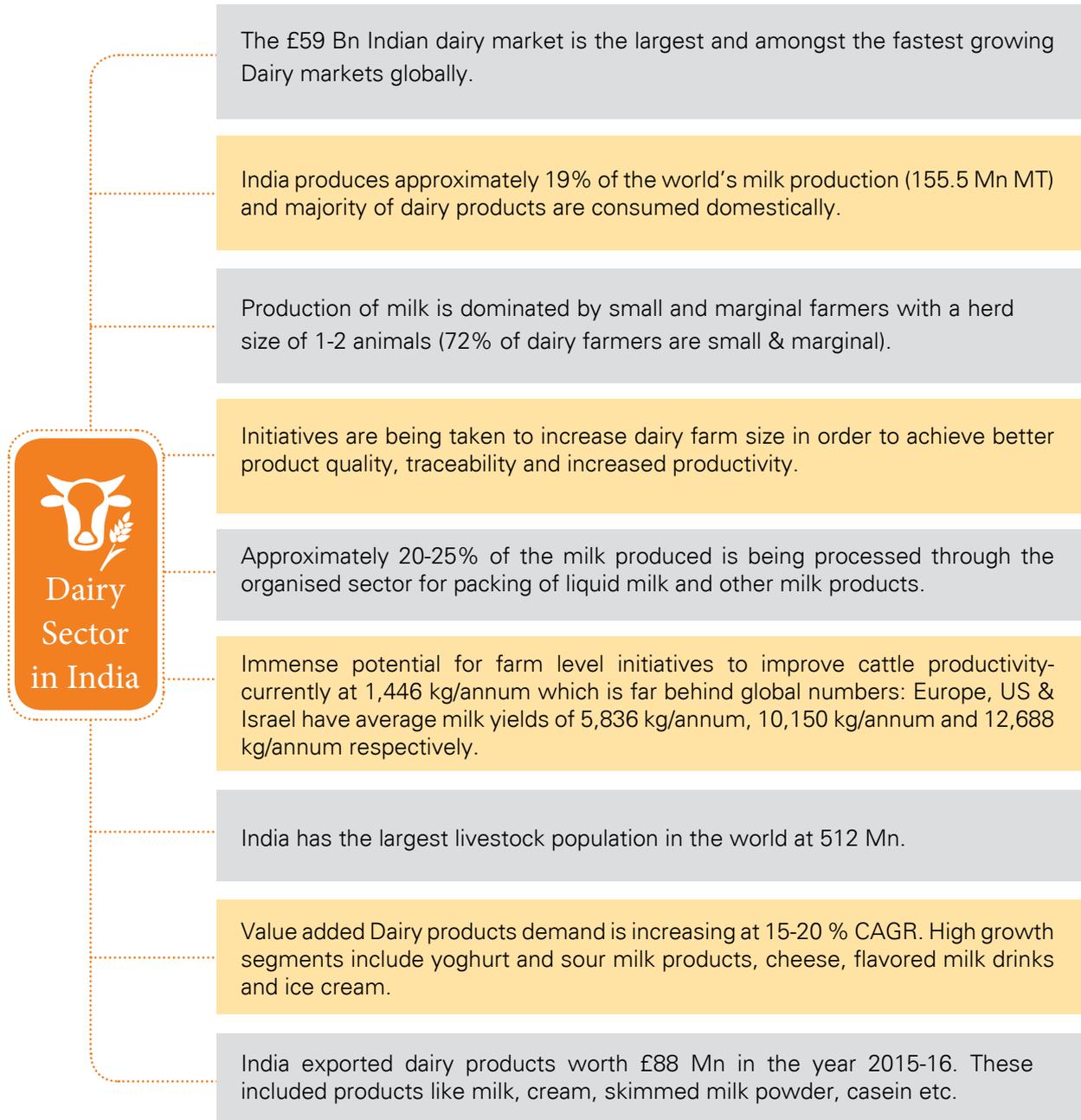
### Challenges

- Lack of organised slaughter houses, poor poultry farm management
- Lack of scientific breeding, improper hygiene and vaccination for the animals
- Lack of good quality and nutritious fodder result in low quality meat
- Lack of abattoirs, standardisation, packaging and processing
- Lack of supply chain infrastructure, cold storage, forward backward linkages hinder the growth of this sector.
- Frequent epidemics such as bird flu, overuse of antibiotics, poor veterinary services and a less than rigorous disease reporting system.
- Low domestic consumption due to religious and health factors
- Lack of strong policy which provides adequate credit for food processing and export oriented models
- Ad hoc political and policy environment with states placing slaughter or transport bans.

### Opportunities

- Setting up modern, integrated abattoir cum meat processing units
- Complete automation of culling lines and processing plants
- Cold storage infrastructure
- Rising demand for quality poultry and aqua feed
- Consultancy in farm management, rearing practices
- Farm, processing and sales resource training
- Integrated pig farming given the current value chain is fragmented with separate breeding and fattening farms

## DAIRY



### Key Statistics

Commodity Production  
155.5 Mn MT

Industry Size  
£59 Bn

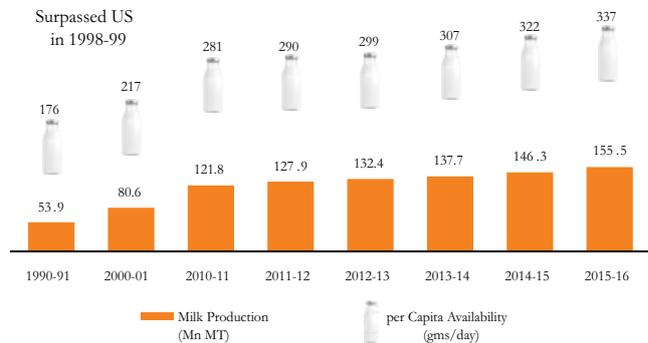
Global Production Position  
1<sup>st</sup>

% of Commodity Processed  
35%

Export Value  
£88 Mn

India is the largest producer of milk globally and one of the fastest growing dairy markets as well. India also has the largest livestock population (512.1 Mn with cattle & buffalo population contributing close to 60%). Majority of milk in India is being produced by buffaloes. During the year 2015-16, Indian dairy industry was estimated to be valued at £59 Bn. The market is expected to grow at a CAGR of 12-13% in the near future. The growth story in India is closely intertwined with small farmers. Around 85% of Indian cattle belong to farmers having herd size of 1 to 2 animals, producing on an average less than 4 Kg milk per day. In the year 2015-16, India produced around 155.5 Mn MT of milk accounting for 19% of the world’s milk production. Milk production has increased by a CAGR of 4% over a 5 year period between 2010-11 and 2015-16.

### Milk Production and Per Capita Milk Availability in India

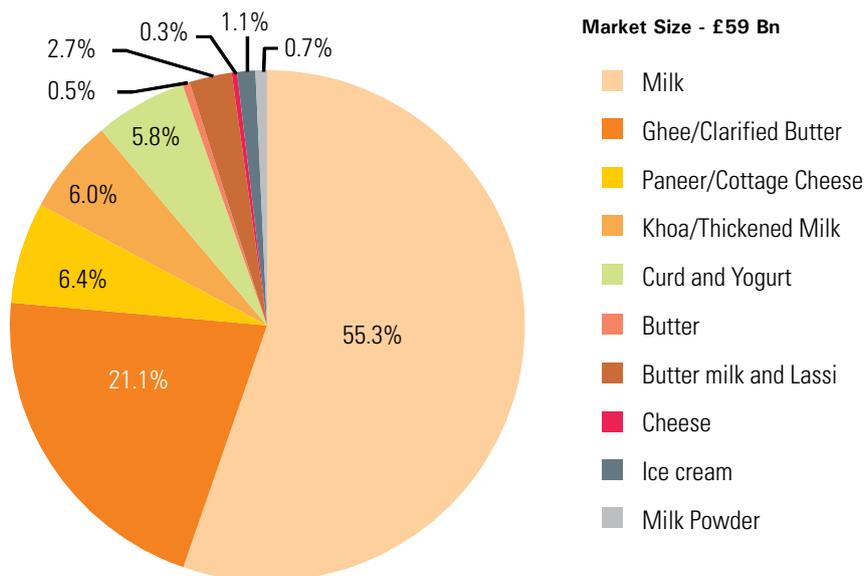


Source: Department of Animal Husbandry, Dairying and Fisheries

### Market

Milk and milk products form the most important source of protein for Indian vegetarians. While liquid milk dominates the market, demand for value added dairy products is increasing, especially in the urban areas. Industry players are diversifying into value added dairy products like ice cream, cheese, curd and flavored milk owing to higher margins as compared to liquid milk. Segments like 'ghee' (clarified butter), 'paneer' (cottage cheese) and butter milk have lower presence of branded players as compared to cheese, ice cream and butter.

### Market Size of Milk and Dairy Products (2015-16)



Source: CRISIL Research

## Growth Drivers, Challenges and Opportunities

### Growth Drivers in the Dairy Value Chain

- Given the rise in urbanisation, affordability and demand for healthy food, the share of value added dairy products has increased to nearly 40% of the total milk procured in India
- Government Incentives such as framing the National Dairy Plan and granting priority lending status to the dairy industry
- Increase in quality consciousness amongst consumers has led to increase in demand of better quality, longer shelf life packaged products
- Improvement in supply chain infrastructure including cold chain facilities

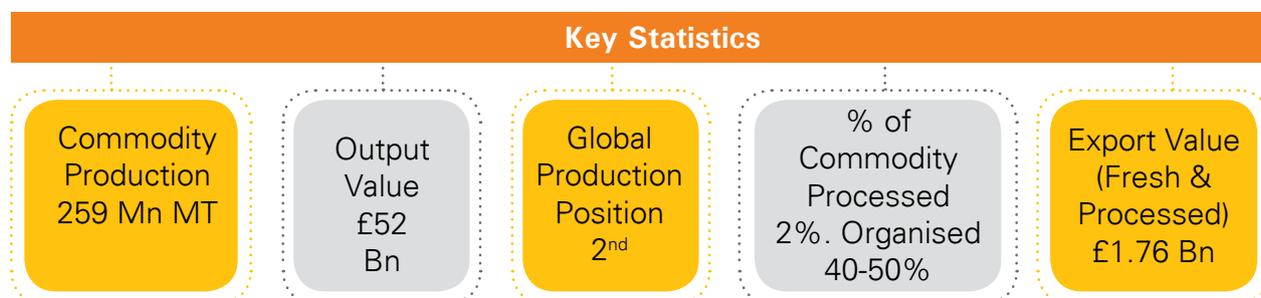
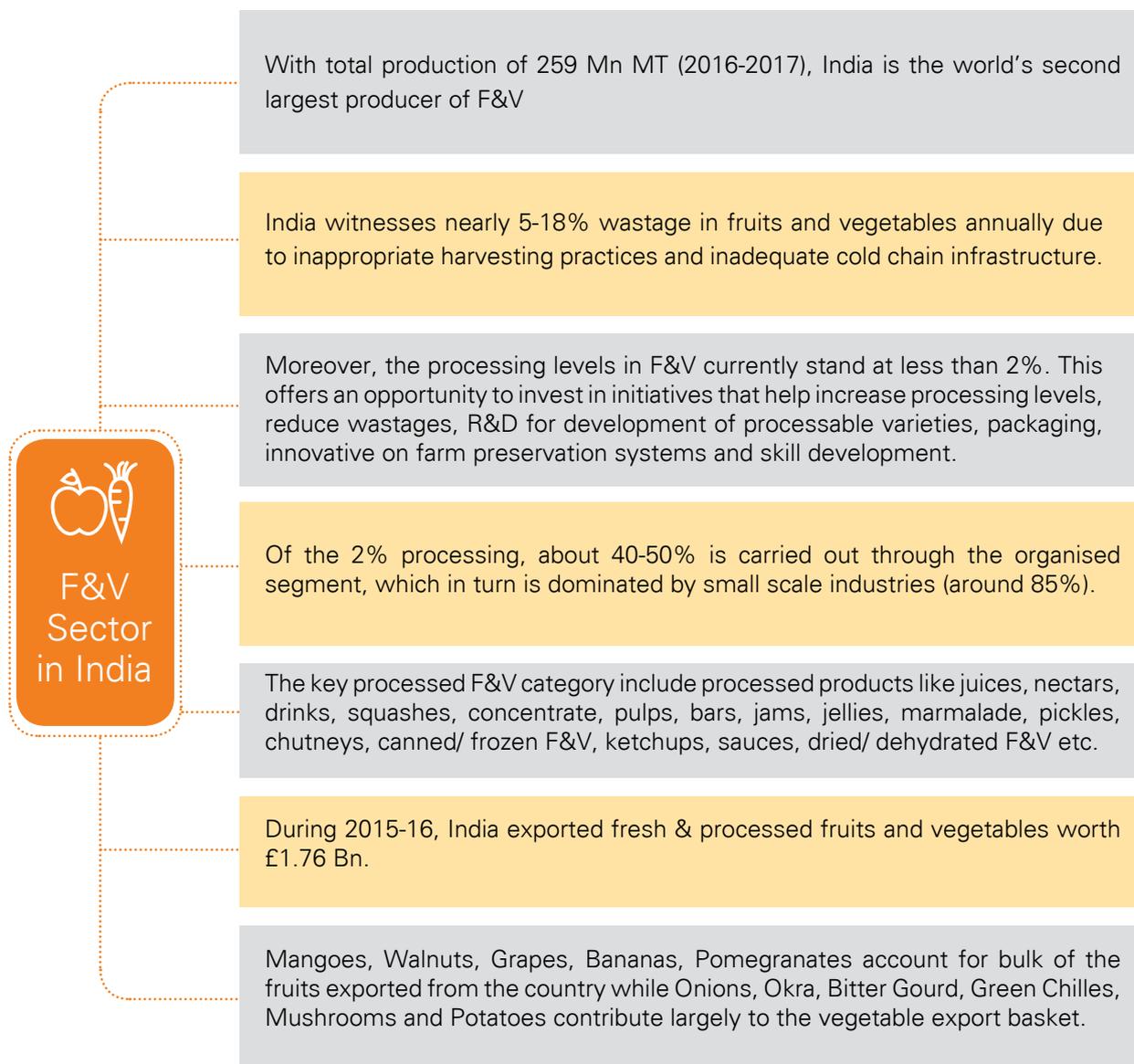
### Challenges

- Lack of basic breeding activities like livestock identification and inadequate availability of breeding bulls in India
- Low availability and high cost of feed and fodder
- Inadequate quality testing infrastructure at milk collection centres
- High cost of dairy farm machinery which makes dairy farming on a small scale unviable
- Small livestock holding makes it a challenge to use farm machinery for automation of processes
- Aggregation and collection of milk remains a challenge due to large presence of small and marginal dairy farmers
- Many chilling plants suffer due to shortage of electricity and do not run optimally leading to poor quality of milk

### Opportunities

- Improvement of cross breeding technologies
- Vaccinations for disease control
- Silage making units and forage production from Non-forest wasteland
- Real time quality monitoring of collected milk
- Storage and chilling technologies for electricity deficient areas
- Quality assessment of procured milk/ quality testing kits
- Packaging technologies for new formats, shelf life enhancement and to retain nutrition level
- Packaging innovations for milk and milk products for sale in rural/far flung areas without cold chain

## Fruits and Vegetables



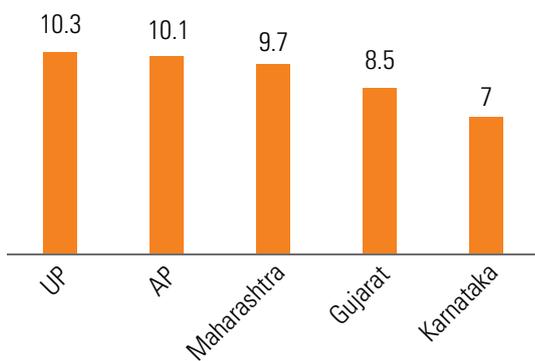
India's diverse agro-climatic zones ensure availability of various fruits and vegetables round the year. India is the second largest producer of Fruits and Vegetables in the world with a production of 269 million MT. According to the 3<sup>rd</sup> advance estimates 2016-17 of National Horticulture Board, India produced ~93.7 million MT of fruits (with an area of ~6.4 million Ha) and ~176.1 million MT

of vegetables (with an area of ~10.2 million Ha). Despite being a leading producer, the processing levels for fruits & vegetables in India are at a meager 2% with a 5-16% wastage loss across different crops. Such high level of wastage is primarily due to inefficient storage, inadequate logistics and poor post-harvest management.

### Top states in fruits and vegetables production in India

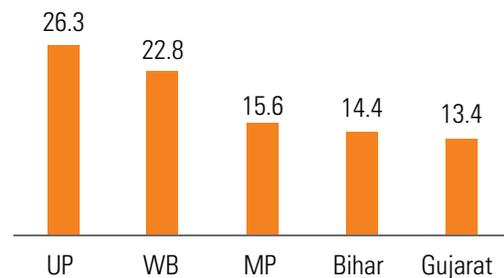
The top 5 leading producers in terms of fruit production are Uttar Pradesh, Andhra Pradesh, Maharashtra, Gujarat and Karnataka aggregating to around 51% of the total fruit production. The top 5 leading states in terms of vegetable production are Uttar Pradesh, West Bengal, Madhya Pradesh, Bihar, and Gujarat contributing around 55% of the total country's production.

**Top 5 fruit producing states (Mn MT)**



Source: National Horticulture Board

**Top 5 vegetable producing states (Mn MT)**



Source: National Horticulture Board

India is the world's largest producer of bananas, papaya, mangoes and guavas; second largest producer of potatoes, green peas, tomatoes, cabbage and cauliflower. The production volume of some major fruits and vegetables in the country are tabulated below:

Fruits	Production Volume (Mn MT)	Vegetables	Production Volume (Mn MT)
Banana	29.1	Potato	43.4
Mango	18.6	Onion	20.9
Citrus	11.6	Tomato	18.7
Papaya	5.7	Brinjal	12.5
Guava	4.0	Cabbage	8.8

### Export Scenario

India exported fresh Fruits and Vegetables worth £1.18 billion during the year 2016-17. The vegetables contributed around 57% of the total F&V export basket while the remaining 43% consisted of fruits. Mangoes, Grapes, Bananas and Pomegranates account for bulk of the fruits exported from the country while Onions, Leguminous vegetables, Potato, Tomato and Garlic contribute to the vegetable export basket. The major destinations for Indian fruits and vegetables are UAE, Bangladesh, Malaysia, Netherland, Sri Lanka, Nepal, UK, Saudi Arabia, Pakistan and Qatar.

India's exports of processed Fruits and Vegetables was around £1.15 Billion in 2016-17, which mainly included Dried and Preserved Vegetables and Mango Pulp.

## Challenges

Low availability of the right quality of produce in the required quantities for processing

Lack of packhouses and cold chain infrastructure

Old and obsolete processing technology and equipment

High domestic preference for fresh produce

## Opportunities in Fruits and Vegetables Processing at a Glance

### Equipment and Technology Suppliers

- New technology in F&V processing
- Cold chain & packhouses- Farm level, logistics, end product storage and at point of retail
- Packaging technology
- Food testing labs with latest equipment and technology

### F&V Processors

- New product development- Health food, traditional food, nutraceuticals and dehydrated F&V
- Convenience foods
- Beverages-Indian traditional beverages like nimbu paani, coconut water etc.
- Processed ingredients for ice creams, yogurt, beverages etc.

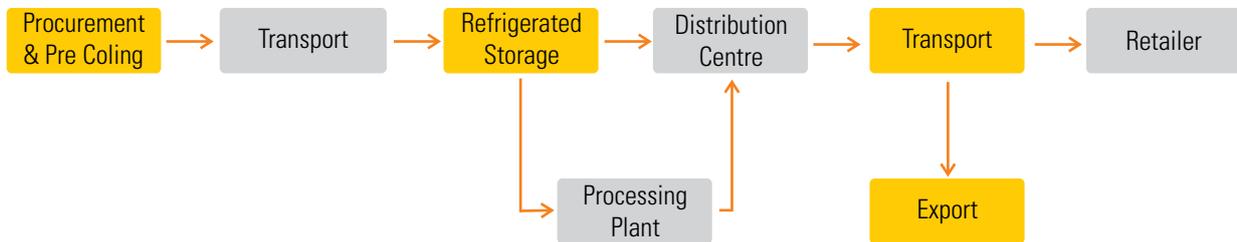


## Cold Chain and Logistics

India produces more than 400 million MT of perishables every year (including horticultural produce, dairy, meat, poultry and fish). Yet, wastage levels in perishables in India are significantly high ranging from 4.6-15.9% in fruits, 5.2% in inland fish, 10.5% in marine fish to 2.7% in meat and 6.7% in poultry. Adequate and efficient cold chain infrastructure from farm gate to consumers is required to arrest the high losses across the supply chain of perishables.

A cold chain is a temperature-controlled supply chain network, with storage and distribution activities to maintain the temperature in a specified range to increase its shelf life for consumption.

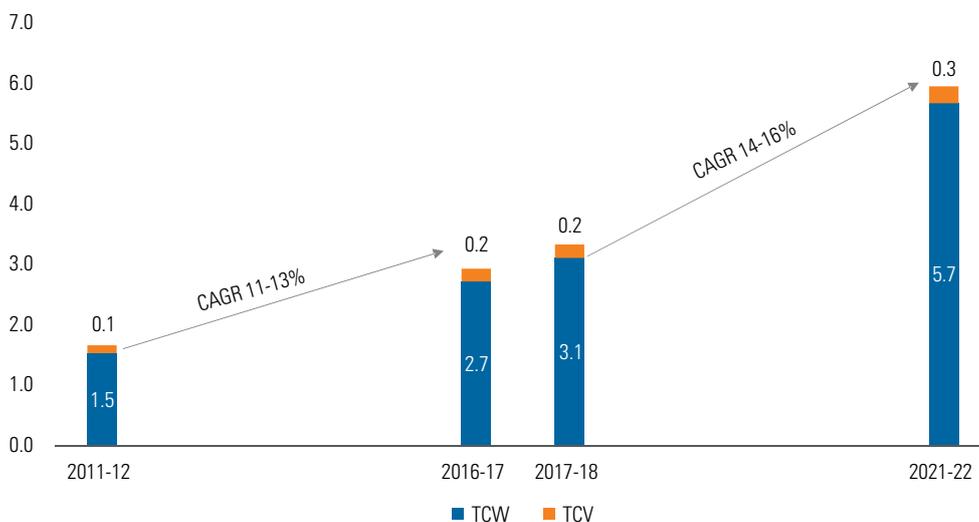
A typical cold chain network comprises of the following stages.



### Industry Classification and Outlook

The cold chain industry in India comprises of two major segments i.e. Temperature Controlled Warehouses (TCW) and Temperature Controlled Vehicles (TCV). The total industry size in 2016-17 was estimated at £2.94 billion with Temperature Controlled Warehouse (£2.73 billion) and Temperature Controlled Vehicles (£0.21 billion) comprising of 90% and 10% of market share respectively.<sup>1</sup> The segment grew at a CAGR of 11-13% in the last five years (2011-12 to 2016-17), and is expected to reach £5.9 billion by the year 2021-22 with a CAGR of 14-16% during the period 2017-18 to 2021-22.

### Market Size of Cold Chain Segment (£Billion)



Source: Crisil Research

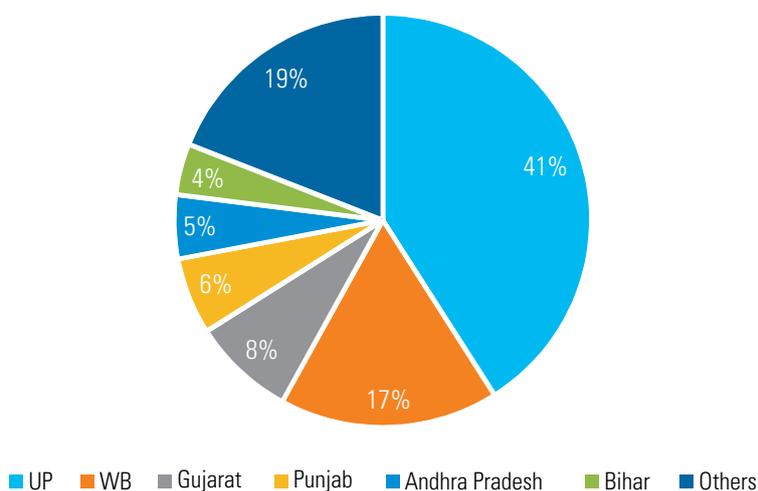
<sup>1</sup> Crisil Research

### Temperature Controlled Warehouse

The key components of Temperature Controlled Warehouse (TCW) infrastructure are as follows:



### Statewise % share of cold storage capacity



Source: Crisil Research

Potatoes accounted for 70-75% of total volumes handled, followed by multipurpose storage which accounted for 25-30%. However, in value terms multipurpose and potato stores account for 77% and 17% of the total revenues respectively. This is mainly due to substantially low storage rentals for potatoes, which are also seasonal in nature (limited to 8-9 months in a year). The share of single purpose or potato cold storages is expected to gradually decrease on account of lower payback period, low rentals and stretched profitability.

### Temperature Controlled Vehicles (TCV)

Cold chain distribution or refrigerated transport is at a nascent stage in India as compared to ~ 80-85% in USA and 30-40% in Thailand. At present, the refrigerated transport segment is fragmented with a large number of small and non integrated private players.

The total revenue of the temperature-controlled vehicle (TCV) segment in India was estimated to be at £0.21 billion in the year 2016-17. Volumes of TCV are expected to grow at a CAGR of 6-7% from 2016-17 to 2021-22 driven primarily by pharmaceuticals, seafood and meat (largely exported) as well as domestic QSRs. In value terms, meat contributes around 50-55% of the total value generated by TCVs followed by Dairy products (20-25%) and Pharma (20-25%).

### Status of Cold Chain Infrastructure in India

According to an NCCD report titled “All India Cold-chain Infrastructure Capacity (Assessment of Status and Gaps)” and a baseline survey conducted by National Horticulture Board (in Dec 2014), around 31.8 million MT of cold storage capacity (both bulk and hub) was created in the country with a gap of around 3 million MT. The key findings of the report are outlined below:

#### Status of Cold Chain Infrastructure in India, 2016

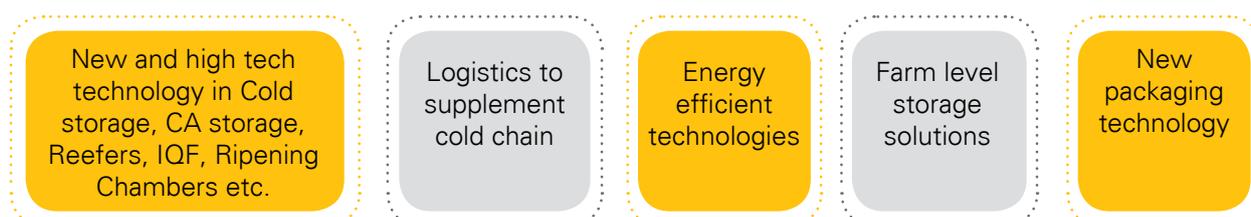
Type of Infrastructure	Infrastructure Requirement (A)	Infrastructure created (B)	All India Gap (A-B)	% share of Gap to Required
Pack-house	70,080 nos.	249 nos.	69,831nos.	99.6%
Reefer Vehicles	61,826 nos.	9,000 nos	52,826 nos.	85%
Cold Storage (Bulk)	34,164,411 MT	31,823,700 MT	3,276,962 MT	10%
Cold Storage (Hub)	936,251 MT			
Ripening Chamber	9,131 nos.	812 nos.	8,319 nos	91%

-AICIC-2015-NCCD-

### Emerging Trends in the cold chain sector

- Focus shifting to end-to-end cold chain and not just storage
- Better and more sophisticated machinery and equipments
- Setting up of multipurpose cold storages Modern packhouses and ripening facility
- Energy efficient and new storage technology
- Integrated cargo complexes are being planned at major airports to handle all kinds of commodities including perishables.

### Indicative Opportunities in the cold chain sector







### 3. Advantage UK - What the UK can offer

#### The UK Food and Drink Industry

The food and drink industry is the UK's largest manufacturing sector, contributing £28.2bn to the economy annually and employing 400,000 people. It is a key part of the nation's £110bn 'farm to fork' food chain.

It is also a growing sector. In terms of economic contribution (measured by GVA), between 1997 and 2015 the sector grew by 27%, making it the fourth fastest growing UK manufacturing sector.



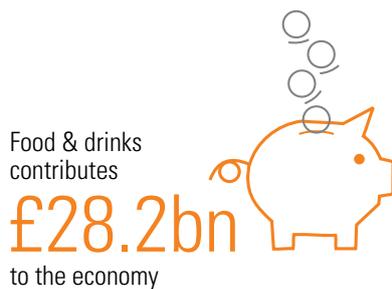
**The food & drink industry is the biggest manufacturing sector in the country...**



**...larger than automotive & aerospace combined**

Source: Food and Drink Federation

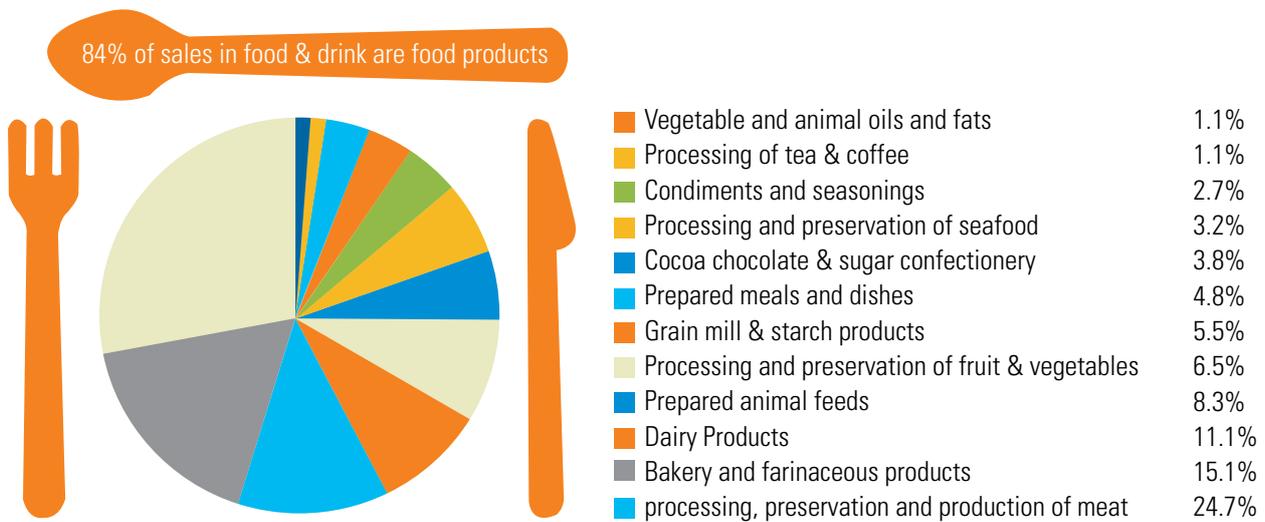
The mix of both dynamic small businesses (146 of whom can be defined as scale ups) as well as large, globally recognised, organisations is a unique feature of the sector.



Source: Food and Drink Federation



Sales as a % of food industry



Source: Food and Drink Federation

Quality Products and Reformulation

The UK food and drink industry has a well-earned global reputation for provenance, quality and innovation. It is a high-technology industry with a strong record of innovation. The UK pioneered frozen food, ready meals and instant coffee and is now at the forefront of developing “functional food” – products that provide health benefits.

With the support of industry, the UK Government has **set up the most ambitious sugars reduction programme anywhere in the world** to help lower sugar in the national diet



Soft drink companies have **reduced sugars & calories** from their products by **18%** since 2012



The dynamic nature of the sector underlines its importance to the economy as it is continually investing and evolving and is further evidence that the sector is insulating itself against changing consumer trends or economic cycles.

Source: Food and Drink Federation

Research undertaken by Grant Thornton for the UK’s Food and Drink Federation (FDF) looking into growth opportunities highlighted the high levels of product innovation that take place in UK food and drink. Nine out of ten businesses are currently involved in new product development and reformulation.

Groundbreaking innovation and new product development underpinned by some of the highest food safety, environmental and animal welfare standards in the world ensure UK food and drink meets the highest standards of trust and integrity that are demanded by Indian consumers.

## Exports

Food and drink exports have gone from strength to strength in recent years, with 2016 marking the first year that the value exceeded £20bn, with sales to a record 217 international markets. Exports increased to all of the UK's top 20 markets.

UK food and drink exports to Asia and Oceania have seen the fastest growth since 1996 at 155%, with the UK industry's strong reputation for quality products, high standards of food safety, animal welfare and sustainability helping to drive rapid growth in demand.

In 2016, total food & drink export figures **were worth more than**



Source: Food and Drink Federation



India is a growing market for UK businesses. Increasing globalisation, a rapidly growing middle class and the growth of organised retail, have made the Indian market more accessible and attractive.

Research undertaken by Grant Thornton for FDF found that India is one of the top three markets that UK food and drink businesses would like to target.

Source: Food and Drink Federation

UK Government has recognised this by including India as a priority market in its latest food and drink export action plan, targeting £349m of additional sales over the next 5 years. Major opportunities exist in ambient grocery in the traditional category, tea, biscuits, condiments and organic sectors. E-commerce platforms will play a key role in achieving this growth.

## Top 10 Products

	2016	Change		
		Value	% Value	% Volume
Whisky	£4095.3m	£153.2m	3.9%	5.5%
Chocolate	£663.4m	£79.2m	13.5%	7.7%
Beer	£595.4m	£89.1m	17.0%	10.0%
Salmon	£579.2m	£81.7m	16.4%	<b>-9.3%</b>
Cheese	£498.8m	£49.4m	11.0%	7.7%
Wine	£490.1m	£49.6m	11.2%	<b>-14.0%</b>
Gin	£475.0m	£53.0m	12.5%	10.6%
Beef	£446.8m	£16.8m	3.9%	1.4%
Soft drinks	£427.8m	£47.7m	12.6%	0.6%
Wheat	£389.2m	£123.9m	46.7%	49.2%

Source: Food and Drink Federation

### Overseas Direct Investment (ODI)

UK businesses have a long history of exporting and partnering with India, with McVities, Twinings and Diageo cementing their presence in India. For some categories, especially those with limited shelf lives or where there are gaps in the UK supply chain limiting the sector’s ability to export, ODI is an important alternative route into the Indian market, providing opportunities to localise manufacturing to control price, quality and time to market.

UK food and drink ODI in India has grown rapidly in response to new Indian Government incentives and improved supply-chain related infrastructure, such as cold storage, abattoirs and food parks.

### UK Food and Drink Industry Specialisms

The UK food and drink sector produces a diverse range of products; from meat, seafood, baked goods, dairy and ready meals, to soft drinks, malt, beer and spirits. Particular strengths can be found in the dairy, beverage alcohol, confectionery and the health and wellbeing sectors of the UK industry.

**Dairy products:** the UK is the EU’s third and the world’s tenth largest dairy producer. Dairy is the UK’s largest farming sector and accounts for 17% of UK agricultural production. Milk and cream, accounts for around 73% of UK dairy exports within the EU and 66% outside of the EU.



**Confectionery:** Chocolate accounts for the majority of the UK’s total confectionery market value. The UK market is predicted to grow to £6.5bn by 2019. It is the UK’s highest value food export category with overseas demand for iconic UK brands driving double-digit growth in 2016.



**Beverage alcohol:** The manufacture of drinks accounts for 16% of the UK’s food and drink sector or £12.7bn in 2015. The UK is the world’s largest exporter of both whisky and gin. Exports of whisky total £4bn, while gin exports are worth nearly £0.5bn. The UK’s beer and gin sectors are growing rapidly, driven by new craft producers.



**Health and wellbeing:** The healthy eating agenda has resulted in manufacturers reducing sugar, salt and artificial trans fats content in products, as well as launching healthy food lines. Production of health foods and ‘free-from’ items in the UK now accounts for 10% of the overall UK food and drink market



Source: Food and Drink Federation

Insights kindly provided by **Santander’s Food and Drink sector team** with the support of the **The Food and Drink Federation (FDF)**.

## The UK- a Strong Partner for India in Transport and Logistics

### Why the UK?

The UK is 8<sup>th</sup> globally in the most recognised global logistics performance index, the World Bank LPI 2016. This index is published every 2 years and the UK is in the top 10 countries across all of the six sub-indices used by the report. With the exception of Singapore all of the top 8 countries are European and the USA and Hong Kong make up the other two top 10 countries.

Unlike logistics hub countries like Hong Kong and Dubai where excellence has been achieved by high infrastructure investment in transfer facilities the UK logistics performance is based on overall excellence in getting goods to the marketplace. Its high level of customer expectations continues to drive efficiencies in service and standards and in recent years this has been driven by the doubling of online retail sales from 2012 to £1 billion in 2016.

The UK's main competitive advantage over other leading countries in the index is in the flexibility and efficiency of its logistics workforce and the competitiveness of the main logistics and transport providers. The strength of these players provides great partnership potential in supporting India meet its needs.

The UK has 1.7m people employed in logistics and transport which is 8% of the workforce and is lower than many comparative economies. The workforce has been strongly rationalised over the last 30 years through investment in automation and technology and a strong productivity focus on manual and clerical tasks. In terms of logistics skills in common with most developed markets the skill & resource gaps are primarily at the operative level (drivers & warehouse staff) rather than at managerial level (KLU / World Bank Study supported by CILT).

### Warehousing & Storage

Warehousing & Storage is the leading example of how customer demand has driven efficiencies and investment in the sector. This sector is comparatively profitable with revenues in 2016 of £14.2bn and profits of £1.3bn.

Supply chains have become increasingly complex and the industry has adapted to satisfy new consumer demands. Warehouses have developed into distribution centres where goods can be finished, packed and held in preparation for final delivery. Many facilities also increasingly handle customer returns and waste management through reverse logistics. These adjustments have become possible because of significant investment in innovative technology.

The sector has very little consolidation comparatively with DHL Supply Chain being the largest operator with 10.4% of the market. There is a tendency for specialism in both operator and premises in storing types of goods and in storage control environments with businesses focusing on ambient, cool or cold chain and on product such as food or technology.

The proportion of total logistics costs spent on warehousing and storage as opposed to transport varies by sector with 40% spent in retail logistics but only 12% in construction.

### Road & Rail Transport

The two sectors have developed in very different ways with an historic emphasis on road and a more recent investment in rail freight through privatisation and resultant technology and infrastructure investment. This has led to an increasing connection between the two sectors although volumes cross shipped and handled remain small partly because of the low mileage in UK geographies.

Revenues for road freight at £26.2bn are many times those of rail freight at just under £1bn although road declined in 2016 compared with a 2.2% growth in rail. Like warehousing, road transport is spread amongst many different operators with only a few large multinationals having significant shares. These include DHL Supply Chain, again the largest at 10.2% share, XPO Logistics, Wincanton and Unipart Logistics. Rail freight is concentrated with 4 suppliers responsible for 89% of the revenues.

The UK logistics market has responded to significant change in customer demand for home and same day / next day delivery and this has led to lower profit margins but increased customer service aimed at the consumer. The reverse logistics impact has been part of this consumer driven change with a huge increase in delivery and collection points and methods; a challenge that is also common in India.

### Food Storage & Distribution

This sector in the UK is highly sophisticated with logistics and transport solutions that have been improved over the years by intense competition between 3PLs and manufacturers & retailers themselves. Retailers operate a large part of the warehousing and transport in this sector, often in turn using 3PL's to operate. The food retailers in the UK also have tended to be in the forefront of the innovation with strong shelf life control, temperature regimes, home delivery and packaging design. This has recently been added to by a strong focus on costs and inventory as the discounters have taken market share from the traditional grocers.

As a result, many of the efficiencies in stock control, warehousing and transport planning have come from this sector. This has led increasingly to collaboration with shared deliveries, 4PL solutions, cross docking, multiuser distribution centres and pallet pools.

This extends to temperature control with specialist providers and mainstream 3PL's exercising processes and using sophisticated equipment to ensure products are kept at consistent temperature and humidity levels throughout the storage and delivery process.

Increasingly in the UK this has now extended to fresh products with a farm to shelf process whereby retailers forecast and order direct to the farmers and cooperatives and product is picked, packed and delivered within hours of the order. The forecast and order is now driven by actual demand on shelf combined with anticipated events that enable uplifts and downturns in demand to be accurately predicted. Even the weather is built in as a factor – not surprising perhaps as this is the UK!

### A Partner of Choice

With its position as one of the leading logistics and transport nations in the world and the emphasis given to service and efficiencies that includes product quality, order lead times and cost the UK is a model industry to focus on. Its processes, network design and consumer focus mean that the individual businesses and the professionals manning those businesses have globally leading edge skills and knowledge. The high demands from retail customers and the consumer drive the highest standards in product quality and timeliness. The cost expectations of both retail and consumer mean that the sector continually has had to find cost effective ways of storing and delivering goods in what is predominantly a low margin sector.

This has resulted in an industry that is both mature and leading towards best practice. Industry groups like the Chartered Institute of Logistics & Transport (CILT) encourage the (global) exchange of best practice information and comparative benchmarking and the industry increasingly is looking at not how to compete in services but how to share volumes and routes to further maximise efficiencies. This is being accentuated and incentivised by a focus on waste and environmental factors both from within the industry and from government.

Integrated solutions across logistics and transport that may also include areas of manufacturing, customer service and cash collection are also opportunity areas being offered and exploited now by more sophisticated 3PLs.

International solutions covering across international boundaries are also a significant logistics offering that can be extended by logistics businesses that have multinational and regional capability.

### Taking the Partnership Further

These improvements have been made in the UK over the last 40 years driven by the retail and consumer pressures and the manufacturers desire to reduce costs and gain competitive advantage through the supply chain. This gives great potential for partnering with India to enable step changes in logistics and transport to be taken at a faster pace. The consumer in India is demanding many of the services that are seen as being mandatory in the UK and that consumer will expect quicker response, cheaper goods and, most importantly, a wider choice of safe and fresh foodstuffs and well packaged consumer products.

This partnership can be effected by finding ways to gain from the experience of the large 3PL's and logistics businesses in the UK, many of whom do operate on a multinational footing. Similarly consultancy expertise in focused areas like warehouse & network design and process and system transformation can be accessed from the UK. Trade & membership bodies in the Logistics & Transport space can similarly be engaged to share knowledge and understanding. This should be focused on the largest opportunity areas where the greatest advances are needed. Food Logistics has a number of these areas and the greatest consumer pressure. Fresh and temperature controlled environments, ability to deliver across the nation and to every customer's home, reductions in food wastage and reductions in cost to serve are all priority areas as India moves forward and the UK expertise can be drawn upon in measured ways to assist.

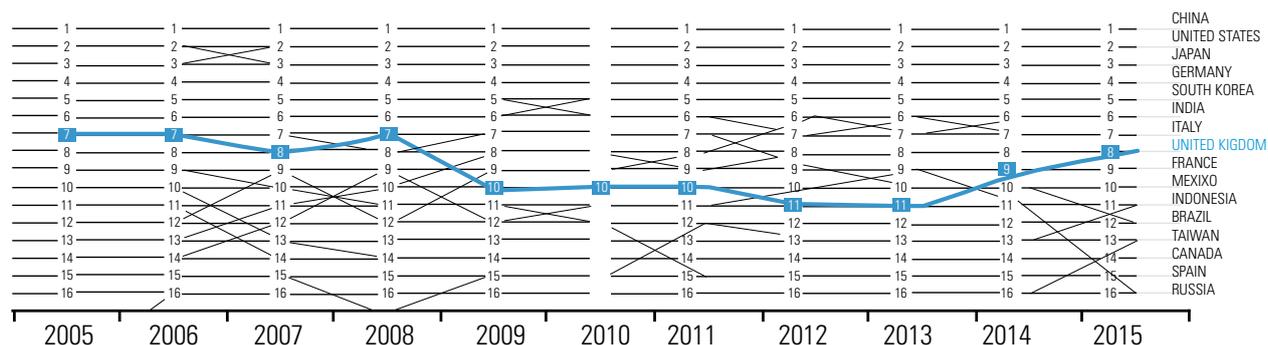
Insights kindly provided by **Santander's Logistics and Transport Sector team** in association with **The International Secretary General, CILT International**.

# The UK – the Modern Manufacturing Partner for Food Equipment

## World Leading Modern Manufacturing in UK

Manufacturing contributes £6.7 tn to the global economy. Contrary to widespread perceptions, UK manufacturing is strong and growing.

### Britain is the 8<sup>th</sup> Largest Manufacturer in the World by Output



Source: UNCTAD, USD in current prices

### The industry employs 2.6 million people and accounts for:

- 10% of UK Output
- 44% of UK Exports
- 70% of Business R&D
- 13% of Business Investment
- Machinery Manufacturing makes up 8%

Source: EEF –The Manufacturer’s Organisation 2017/18, The Facts

### Strength in Food

Modern Manufacturing - key stats:

- Output = £10.4 billion (2016) / 6.3% of Total Manufacturing GVA
- 44% of Mechanical Equipment production is for the Export Market.
- The sub sector employed 193k in 2015
- £1.04 billion was spent on R&D in 2015 /7.2% of total Manufacturing R&D
- £1.4 billion of capital investment was made into the sector in 2016

Source: UKtradeinfo

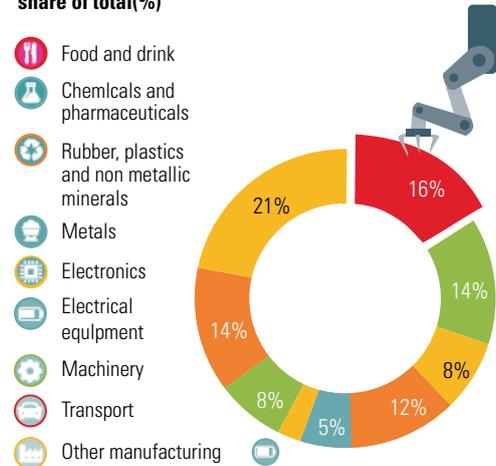
Machinery encompasses a vast range of products, ranging from huge industrial turbines to the lawn mower, but all machinery has one common defining feature: it either reduces or eliminates the amount of human work required to accomplish a task.

Machinery is critical to the production of goods and services because nearly every workplace in every industry uses some form of machinery. From the farm tractor to the commercial refrigerator, machinery is increasingly necessary for the way we live today.

The machinery manufacturing industry comprises several industry segments. Some make machinery designed for a particular industry, or 'special purpose machinery' e.g. agriculture, commercial and service machinery manufacturing etc. Others make machinery used by many different industries—called general purpose machinery e.g. baking equipment, commercial refrigeration equipment and other general purpose machinery manufacturing.

## What is Modern Manufacturing

Gross Value Added (GVA) by manufacturing sector share of total(%)



Source: ONS The Blue Book (2016)

### UK Machinery – International Trade

- EU remains biggest market for mechanical equipment manufacturers.
- Asia/Oceania is third biggest export market, just behind US, but it is growing....
- Asia/Oceania is the second biggest import market behind the EU.
- India is currently 18<sup>th</sup> biggest export market for mechanical equipment manufacturers.
- Asia and Oceania by far the fastest growing export market. Therefore growing opportunities in region (82% 2000 to 2016).
- Mechanical Exports to India have grown 150% in the same period and now stand at £517m (2016)

Source: UKtradeinfo

### UK – India

The total UK-India bilateral trade in goods and services was £16.33 Bn in 2015, with machinery and equipment listed as one of the leading export categories. Likewise, Food Processing is listed as one of the major categories of FDI into India from the UK (12.23%). As such, this is a sector where the UK has competence and expertise.

Recent engagement from Santander's Food and Drink team quickly identified organisations throughout the supply chain that are very capable of supporting India's Food Processing objectives. Some have already taken the step to set-up local manufacturing facilities in India, demonstrating a deep understanding of what long term success will require. Companies in diverse areas such as bulk handling equipment, baking lines, proofers, ovens, coolers, display units, chillers and warming cabinets, chocolate coating / polishing....the list, and therefore the scope for collaboration, is strong.

Source: Secretariat for Industrial Assistance, Ministry of Commerce & Industry, Government of India.

Insights kindly provided by **Santander's Manufacturing sector team** with the support of the **EEF – The Manufacturer's Organisation**

## Conclusion

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India is a land of golden opportunities. With the world's second largest consumer base, a fast growing economy and a conducive regulatory environment, the country has become a leading investment destination. This is reflected in the over £5.33 Bn worth of Foreign Direct Investment (FDI) that the Indian food processing sector has attracted in the past decade. The agricultural and food processing sector, in particular, is being closely monitored by global agribusiness giants eyeing both trade and investment opportunities.

This report provides an overview of the current state of Indian agriculture and offers a brief sectoral assessment of investment opportunities in the food processing sector. Informed by Indian market dynamics and UK strengths in food processing, this assessment shortlists potential sectors for further consideration namely - dairy, meat, fisheries and cold chain & logistics.

It is critical for UK companies to take cognizance of the diversity of the Indian market in order to select an appropriate geography for their operations. There are complexities across the value chain ranging from licensing and procurement to pricing and distribution. The key to success in such a large and diverse country remains robust local market information and product customisation. Consideration will need to be made on the right way of entering into the market; for example, partnering with an Indian entity versus a more organic approach, balancing access to local knowledge, relationships, expertise and Speed to Market.

A dynamic nation of 1.3 Bn consumers with rising discretionary incomes, changing food patterns and an encouraging policy regime offers global agribusiness players a £305 Bn food and food services market to explore opportunities for value creation. A stable polity and encouraging tax & investment reforms, such as the introduction of the "One Nation One Tax" Goods and Services Tax, along with the Make in India campaign, make India the ideal platform for British agribusiness companies seeking to widen their footprint in an increasingly globalizing economy.

*YES BANK and Santander Bank would like to  
thank the following organisations for their valuable inputs  
in developing this report:*

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The Food and Drink Federation (UK)

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The Chartered Institute of Logistics and Transport (International)

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EEF – The Manufacturers Organisation (UK)

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