

Human Resource & Skill Requirement in Indian Food Processing Sector

FROM 2021 - 2030

Executive Summary

PRESENTATION TO THE HONORABLE SECRETARY – MINISTRY OF FOOD PROCESSING INDUSTRIES

Objectives of the Study

3 Key Objectives

Industry & Labor Market Trends in
Food Processing












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Subsector-wise and Segment-wise
forecast of the Human Resource
and Skill Requirement over a
period of 2021-30

Strategic Roadmap and Action Plan

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SUB-SECTORS MAPPED

	Bread and Bakery products		Milling (Grains & Oilseeds)
	Cold Chain (incl. logistics)		Beverages (Tea & Coffee)
	Dairy Products		Ready-to-eat & Ready-to-cook products
	Fish and seafood processing		Soya processing
	Fruits & Vegetables processing		Spices
	Meat & Poultry processing		

Feedback conducted 4,000 Primary Interviews, 50 Focus Group Discussions (FGDs) and had detailed discussion with 26 Industry Visionaries at a PAN INDIA level

Feedback had also **onboarded 15 Subject Matter Experts (SMEs)** who were actively involved in the complete project life cycle and shared their valuable inputs on the overall recommendation for the study

Feedback also had detailed discussions with **26 Industry Visionaries** across sectors, to get their perspective on the industry

Respondent Category	Sample Proposed	Sample Size covered
Micro, Small & Medium and Large Food Processing Companies		3,928
Micro	3,700	1,896
Medium & Small		1,933
Large		99
State / District Industrial Corporations, Local Food Processing Company associations	80	65
Discussions with relevant Govt. authorities, Industry bodies and industry experts	10	12
TOTAL	3,800	4,005
FOCUS GROUP DISCUSSIONS (192 companies participated in these discussions)	50	50

Summary of Findings

Overall universe of ~ **41,000 units** present in the sectors of interest which currently employs **14.61 Lakh** people (FY'20)

Sub Sectors	ASI Estimates (2017-18)		Feedback Estimates (FY'20)	
	No. of Registered FPI Units	No. Of employees (FY'18)	No. of Registered FPI Units	No. Of employees (FY 20)
Bread and Bakery products	1,758	1,19,730	1,996	1,35,233
Dairy Products	2,064	1,76,956	2,374	2,02,240
Fish and seafood processing	538	87,614	591	94,835
Fruits & Vegetables processing	1,256	77,989	1,426	88,258
Meat & Poultry processing	180	26,936	210	31,296
Milling (Grains & Oilseeds)	22,104	4,49,463	23,792	4,82,418
Ready-to-eat & Ready-to-cook products	482	34,208	716	51,085
Cold Chain (incl. logistics)	Not published in ASI		7,600	2,24,300
Beverages (Tea & Coffee)			1,075	1,05,100
Spices			1,063	40,750
Soya processing			165	6,075
Overall Total	28,382	972,896	41,008	14,61,590

**Universe does not include small unregistered units across sectors especially in segments like Milling and home institutions, retail bakeries and meat sellers*

Government assistance in form of innovative schemes, has helped the sector push towards a **higher growth trajectory**

Innovative Schemes from the Government

- ✓ Government of India has accorded high priority status to food industry with an objective to reduce inefficiencies resulting in wastages/ losses by setting up infrastructure and generate huge employment in this sector
- ✓ Schemes like Mega food parks, Pradhan Mantri Kisan Sampada Yojana (PMKSY), Atmanirbhar Bharat Abhiyan, Production Linked Incentive Scheme for Food Processing Industry (PLISFPI), Operation Greens (TOP – TOTAL) has helped the industry
- ✓ Other schemes like Pradhan Mantri Formalisation of Micro food processing Enterprises (PM-FME), National Apprenticeship Promotion Scheme (NAPS) has also helped improve the skill levels in the sector

Advantage 'India'

- ✓ India also has a geographical advantage as it is centrally located to key export destinations such as Africa, the Middle East, Oceania and the Southeast Asia
- ✓ 100% FDI allowed by the Government has attracted global investments worth USD 904.70 mn in the 2019-20 (up by 44 per cent over 2018-19)

Changing **Demographics and lifestyle**, Retail explosion, demand for better quality products are the key growth drivers of the industry

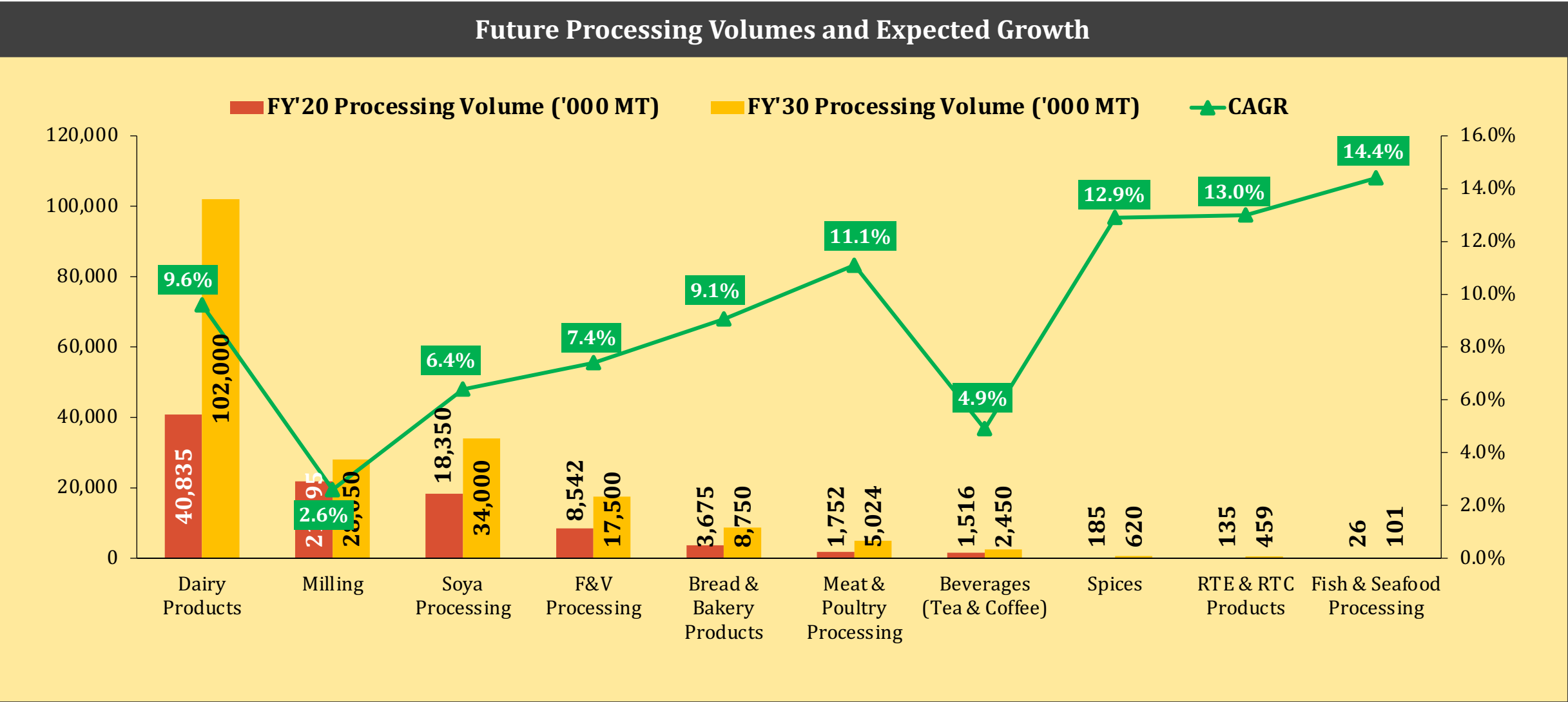
Demographics and Lifestyle changes

- ✓ Rising Disposable Incomes have generated income growth, increased consumer appetites and discretionary spending
- ✓ Higher preference towards 'good quality branded products' food products
- ✓ Factors like Innovative products, packaging and longer shelf life, aggressive marketing and promotion strategies will lead to strong growth of this segment in the coming years

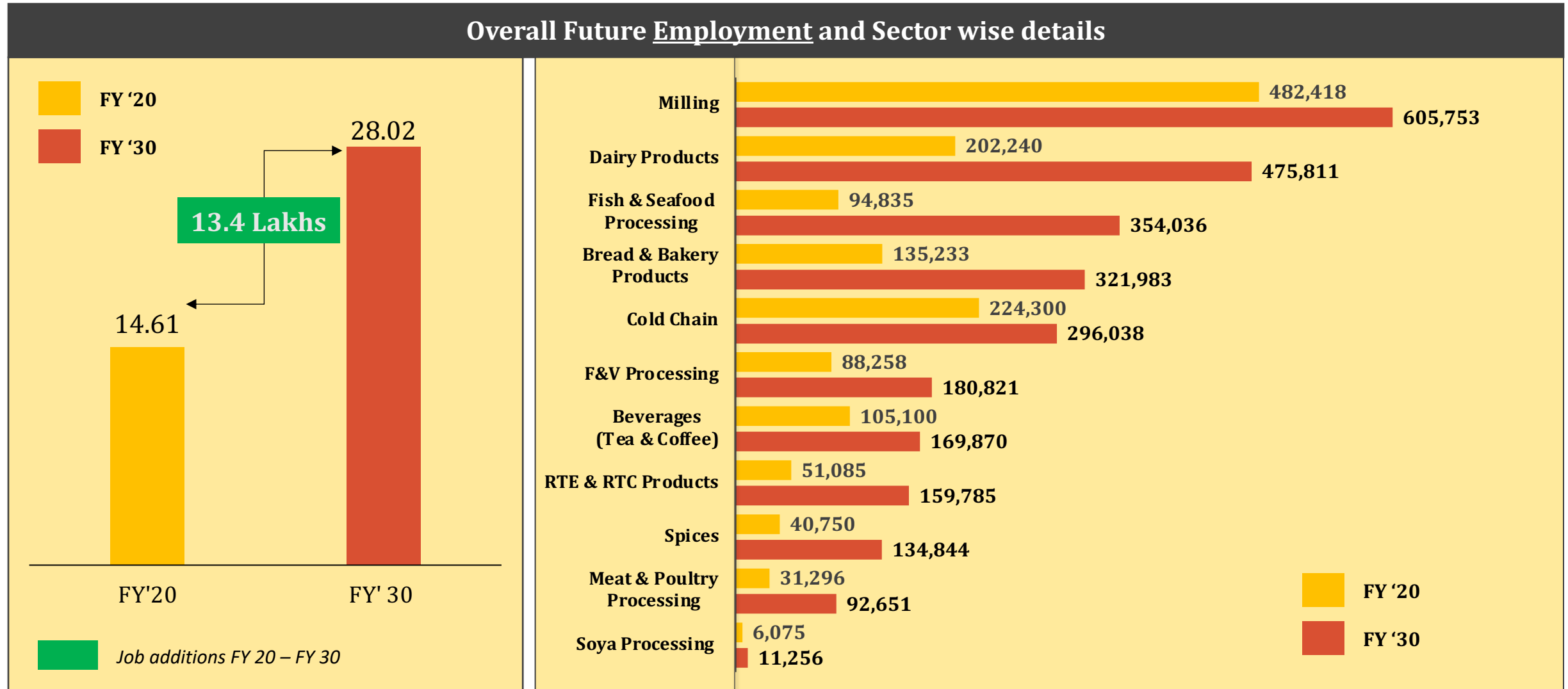
Retail Explosion

- ✓ Increasing share of organised retail, private labelling and retailers offering lucrative options such as combo packs, day-specific discounts, festive offers
- ✓ Spread of the HORECA segment, QSR, Cafes, eateries, fast food restaurants – where there is a demand for packaged products
- ✓ The launch of healthy products across all food products is gaining popularity

Overall processing volumes likely to grow at **CAGR of 7.5%** to reach **~198 MMT** in **FY'30** from **~96 MMT** in **FY'20**



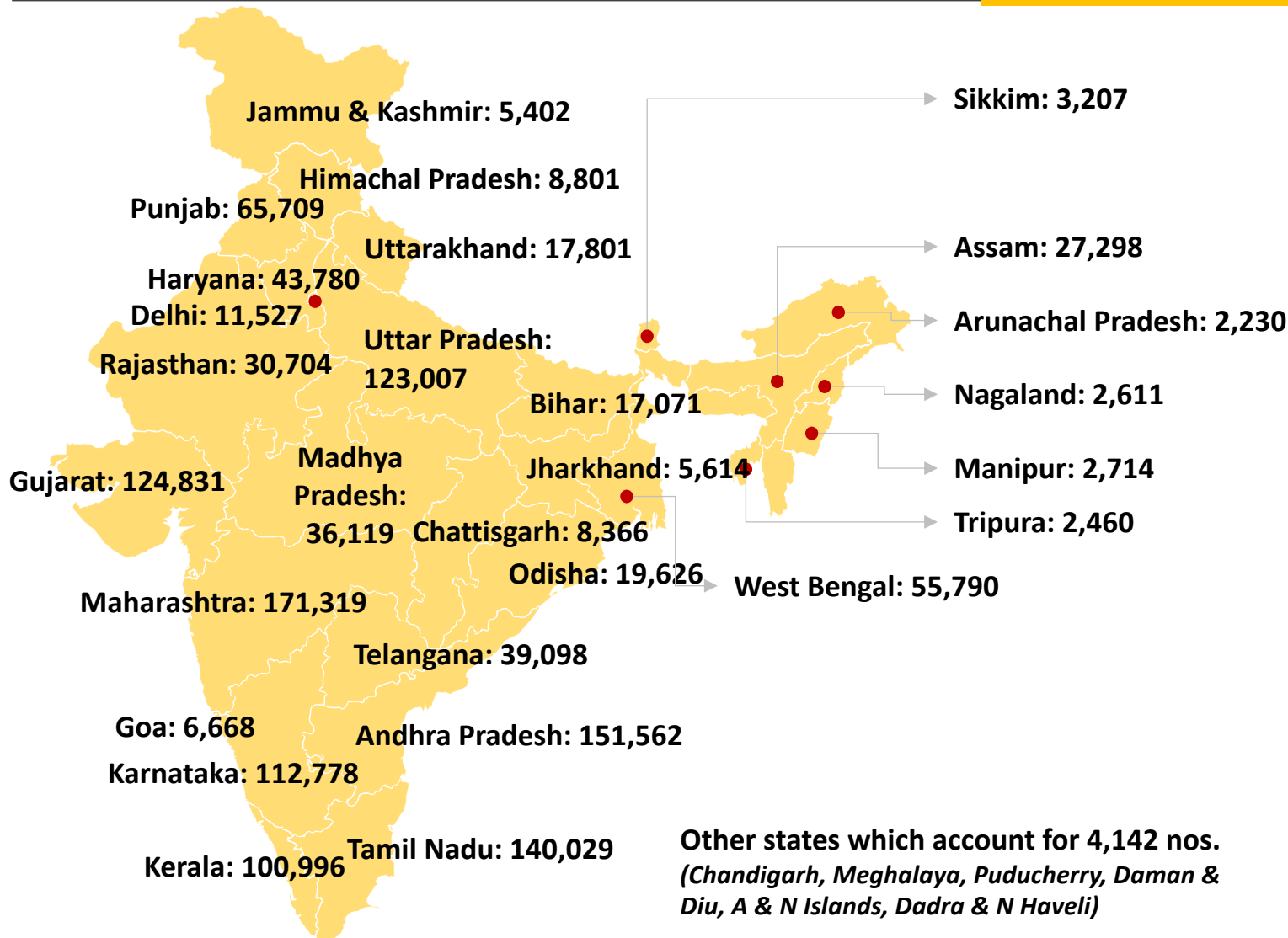
Feedback estimates that sectors of interest will generate approx. **13.4 Lakhs jobs between FY'20 and FY'30**



Traditional Food Processing clusters, will continue to be a **major contributor** in the overall employee additions

Overall Future Employment Additions : By State

Base: 13.4 Lakhs



- **Seven states**, with a CAGR growth of > 6% , account for **69%** of the overall employee additions
 - **South** : Andhra Pradesh, Karnataka, Kerala & Tamil Nadu – would account for 38% of the overall employee additions
 - **West** : Maharashtra & Gujarat – would account for 22% of the overall employee additions
 - **North** : Uttar Pradesh would account for 9% of the overall employee additions

Feedback has identified **78 Job roles** as Skill Gap Focus for Large & SME Firms and an additional **14 New Job roles** which are likely to emerge in the food processing Sector

Job roles with skill gaps for Large & SME Firms

Sub-Sector	No of Job Roles
Bread & Bakery Products	7
Dairy Products	11
Fish & Seafood Processing	6
F&V Processing	6
Meat & Poultry Processing	8
Milling	7
Beverages (Tea & Coffee)	8
RTE & RTC Products	5
Soya Processing	6
Spices	6
Cold Chain	5

Emerging Job roles

Emerging Areas	Key Job Roles
Industry 4.0	<ul style="list-style-type: none"> • Factory Automation Engineer • Supply Chain Manager - Traceability and Product Recall
New product development specialist	<ul style="list-style-type: none"> • Food R&D Specialist • Food Product Development Manager
Food Fortification	<ul style="list-style-type: none"> • Food Fortification Research Associate • Program Policy Officer - Food Fortification
Packaging – Smart & Sustainable packaging	<ul style="list-style-type: none"> • Packaging Technologist • Packaging Engineer
Food labs – Testing	<ul style="list-style-type: none"> • Food Lab Analyst • Food Scientist • Food Technologist

Skill Gaps and Challenges related to Skilling

Food Safety & Hygiene Training to every person entering Food Processing
Availability and Seasonal need of Workers in many sectors

Skill Acquisition Challenges

Lack of Skill Qualified Workers

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Recruitment through reference

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Lack of awareness of training programs

Lack of Continuous Learning Programs

Lack of Knowledge of Industry Trends and Policies

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Hiring is costlier than training

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Employees are unaware of Safe and Hygienic Work practices

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Limited knowledge on the Automation & new technology

Higher Attrition of Unskilled Employees

Employees leave organization within 2-3 years of joining

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Being Overworked

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Dissatisfaction of the work

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Repetitive nature of the work

Training Institutes

Informal Training

- Low **awareness of training institutes**
- Current infrastructure **facilities is inadequate** compared to the requirement

Formal Training

- New **entrants lack practical application** of the theoretical knowledge
- Lack of highly skilled trainers

Our Recommendation

A 10-year action plan outlining the approach to mitigate the skill gap and development of relevant skillsets for the future including effective ways of undertaking skilling activities with public and private sector involvement

Our Recommendations

- Unlike large firms, MSME firms lack the training infrastructure or capabilities to train their employees and face major challenges levels, they need MOFPI support immediately
- In the informal / vocational training, MOFPI should play a very crucial role in developing skilling centres



ADDRESS SKILL GAPS

- Develop 'MOFPI Authorised Center from Training (MACT) in FP HUBS
- Skill-gap focus should be on Micro enterprises and startups



INDUSTRY PARTNERSHIP

- Need to work with the Industry in PPP mode
- MoFPI should provide incentives to companies who wish to automate their units



ONLINE APPROACH

- Create an Industry Labour Portal
- Development of Online / Smart Phone based Training and Certification programs



PLANNING

- Awareness creation
- FP Sector Manpower requirement planning

MOFPI needs to support creation of ‘MOFPI Authorised Center for Training (MACT)’ in FP HUBS

MACT’s are essentially an employability enhancement initiative taken by MOFPI

- ✓ Made mandatory for all employees getting into the FP Sector in the near future
- ✓ Skill syllabus to be considered by MACT to train and make candidates JOB READY with a 3 Month training
- ✓ Devise this program on the lines of the **Production Linked Incentive Program (PLI) Scheme** and **invite participation from firms to set up & operate these MACT Centers with a subsidy element based on per student placed** (for new students) OR the number of Workers trained (for existing employees)
- ✓ MOFPI could also strive to bring this MACT Program under the **“National Apprenticeship Program” Scheme (NAPS)** implemented by Directorate General of Training (DGT) and National Skill Development Corporation (NSDC)

These centres could work with FSSAI in some of the areas

3 Month Certified Training program which consists of:

‘Food Safety & Hygiene’ Work practices as Common Syllabus

Sub-sector specific Syllabus such as Manufacturing process overview, key equipment used & its operations, cleaning and handling of materials etc.

Should include a 10-week classroom training along with a 2-week onsite training in any Local FP unit

Post competition of the Training Program, the individual could be called as **“MOFPI Certified FP Skilled Worker”**

- Development of skill syllabus to be undertaken by FICSI in collaboration with Industry Veterans
- Special Training Program for “Trainers”; Empanelment of industry persons (superannuated) as certified trainers
- Online Library could be created across all subsectors

Recommended Implementation plan

- ✓ Once MACTs are established, the existing employees in the FP Units could also be sent here to get a Certified Training from these schools
- ✓ MOFPI needs to aim to set up these MACTs in most FP Cluster Hubs / Districts in the country. Our research has estimated 120+ FP Clusters / Districts



Some suggestions for implementation:

- ✓ Local Hiring from areas surrounding FP Hub should be encouraged rather than migrant labor from far off states
- ✓ Need an incentive-based approach to encourage more women to join the FP industry in these clusters (Stipend / Job guarantee / Free training / Safety kit etc.)
- ✓ Curriculum and skill syllabus needs to be in local language for the relevant sub sector of interest in these regions
- ✓ MOFPI could consider using the FOSTAC courses undertaken by FSSAI included in this MACT program and the IIFPT-Incubation centre be used as a training centre for skill development under this program

Skill Gap Focus for Micro enterprises, Startups and Entrepreneurship firms

- ✓ PM FME Scheme provides financial, technical and business support for upgradation of a targeted set of 200,000 existing Micro FP enterprises
- ✓ The 'Capacity Building & Research' objectives of the Scheme has a provision to impart required skills and training to these enterprises
- ✓ From the 78 Job Roles (between NSQF level 3 & NSQF level 6) identified, only specific job roles could be used to train these Micro enterprises and Feedback has also identified a few Job roles which can be considered for the PM- FME scheme in each sub sector

Need to identify certain new Job roles / Skill gaps existing in these Micro enterprises

If MOFPI / FICSI can provide the QP's for the above Job roles, the same could be used to address the training requirement of Micro Enterprises as well

Most Micro Enterprises being proprietary run, would also need some specific skills training

1. Entrepreneurship development, essential functions of enterprise operations, marketing, bookkeeping, registration, FSSAI standards, udyog aadhar, GST registration, general hygiene, etc.
2. Specific training designed for ODOP product or the product produced by the unit including operations of necessary machines, hygiene issues, packaging, storage, procurement, new products development etc. (this could be taken from the Skills Syllabus of the MACTs as described above)

Need to work with the Industry in PPP mode

Government of India should fund prospective companies to implement Industry 4.0 solutions and provide for upskilling of employees

Specifically with the FP Equipment Companies, MOFPI / FICSI needs to have a tie up and have a pool of resources / QP's and training programs to address the **Maintenance Training requirements** in each Sector

Most equipment companies are willing to contribute to designing a course which can address in-house maintenance needs, can help in reducing down-time and overall service costs

Work with select large companies in each sector and see if their existing resources – Training methods / systems could be used for helping MSME firms in the given sectors

Automation Equipment OEMs should conduct Specific training programs with Hands On training on their Product application and Operation of the system

Work with each Sub-Sector Industry Association on a periodic basis to assess if there are any other areas of Training which needs to be included for their Sub-Sectors

Industry 4.0 gives the results based on various sensors installed in the system related to productivity per shift; idle machine time and idle manpower

- It is important that proprietor / decision makers are trained in the importance and advantages of Industry4.0
- Certain incentives for small and medium enterprises will boost the implementation for the benefit of the industry
- There is a tremendous scope for increase in skilled manpower for Industry4.0. Current employees lacking such skills could be ideally upskilled to retain their employment
- **Basic Computer related skills** needs to be provided across MSME firms before they adapt Industry4.0 solutions and be '**IOT Ready**'

Industry Labour Portal

Development of Online / Smart Phone based specific Training and Certification programs for the MSME & Entrepreneurs in Start-up units

Industry Labour Portal

- Trained workers Portal (e.g., **FPNaukri.com**) to be introduced at the earliest and all trained workers database needs to be maintained at a District / cluster level – Need to work towards making this as a ‘One-stop-shop’ for FP Labour / employees’ recruitment for the industry
- Industry members could visit the portal and search the required profiles and connect with them to recruit their employees

Formalized training is limited to certain towns and cities only

An Online Training and Certification Program can help in widespread reach in a much shorter time

Some basic and specific subjects could be taken up for development of these Online / Smart Phone based training programmes

1. Food Safety and Hygiene – Do’s and Don’ts

2. Basic course on Machine operations

3. Basic course on Machine Maintenance

4. Basic course on Packaging etc.

5. Specific entrepreneurship programs in niche areas such as Bakery Craft, Chocolates, Dairy Cheese / Paneer etc.

Creating Awareness & FP Sector Manpower requirement planning

There is a lack of awareness of any training programs for the Sector

Right awareness creation tools such as advertising in vernacular / local newspapers

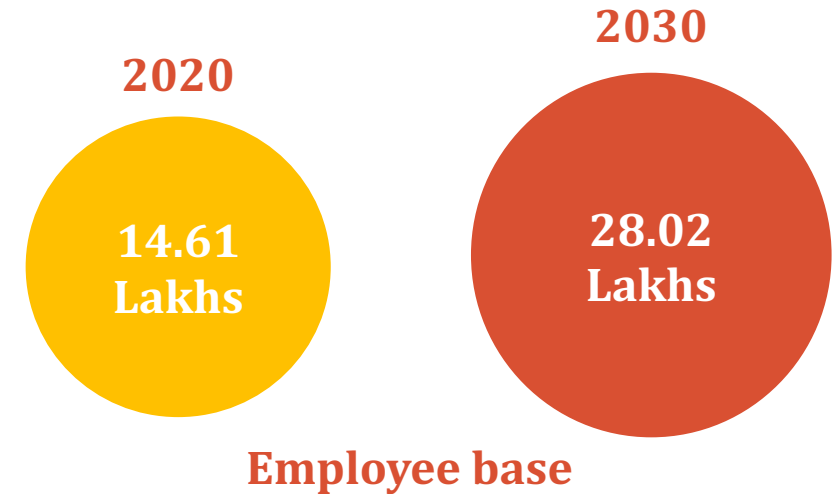
Sponsoring & participating in certain sector specific events / seminars and exhibitions

Digital and Social Media tools could also be explored

MOFPI / FICSI needs to invest in creating awareness

Basic course on Packaging etc.

Information on the 'Potential' and 'Growth prospects' of the FP sector in India needs to be communicated more frequently



We would recommend that a revisit of this sector needs to be undertaken every 5 years to adjust the manpower planning for such a huge sector with visible dynamic changes all round

Annexure

Feedback has identified **78 Job roles** as Skill Gap Focus for Large & SME Firms (1/3)

Sub-Sector	NSQF Level 3	NSQF Level 4	NSQF Level 5	NSQF Level 6
Bread & Bakery Products	1. Helper / Support Staff	1. Oven Operator or Baking Equipment Operator 2. Bread Slice Machine Operator 3. Ingredients Process Mixers Operators 4. Flow Wrapping / Flow-Pack Machine Operator	1. Bakery Processing Plant Supervisor	1. R&D Manager
Dairy Products	1. Machine & Truck Cleaners	1. Bulk Milk Cooler Operator 2. Milk Pasteurization Plant Operator 3. Paneer Press Machine Operator 4. Form Fill Seal Machine Operator 5. Container Filling Machine Operator 6. Ice Cream Manufacturer	1. Dairy Processing Plant Supervisor 2. Data Analyst	1. R&D Manager 2. Inventory Manager
Fish & Seafood Processing	1. Shell remover and Cleaner	1. Defrosting & Washing Machine Operators 2. Filleting & Cutting Machine Operator 3. Squid Pressing Machine Operator	1. Fish & Seafood Processing Plant Supervisor	1. Warehouse Manager
F&V Processing	1. Grader, Sorter & Cleaner	1. Freeze Drying & Dehydrating Equipment Operator 2. Bottling / Pouch Plant Operator 3. Jam & Jelly Producer	1. F&V Processing Plant Supervisor	1. Fruit Technologist

Feedback has identified **78 Job roles** as Skill Gap Focus for Large & SME Firms (2/3)

Sub-Sector	NSQF Level 3	NSQF Level 4	NSQF Level 5	NSQF Level 6
Meat & Poultry Processing	<ol style="list-style-type: none"> 1. Animal Attendant 2. Meat & Poultry Pre-Processor 3. Deboning & Slaughter Butcher 	<ol style="list-style-type: none"> 1. Slaughtering Line Operator 2. Meat Mincer Operator 3. Thermoforming, Tray sealing, Horizontal Flow Pack, Vertical Flow Pack and Stretch Film Machine Operator 	<ol style="list-style-type: none"> 1. Meat & Poultry Processing Unit Supervisor 	<ol style="list-style-type: none"> 1. Veterinarian 2. Storage Manager
Milling	<ol style="list-style-type: none"> 1. Grain & Oilseed Cleaner & Pre-processor 	<ol style="list-style-type: none"> 1. Milling machine operator 2. Flour Packaging Machine Operator 3. Oil Pouch Packing Machine Operator 4. Rice Mill Operator 5. Wheat Flour Mill operator 	<ol style="list-style-type: none"> 1. Mill Supervisor 	-
Beverages (Tea & Coffee)	<ol style="list-style-type: none"> 1. Tea Taster 	<ol style="list-style-type: none"> 1. Coffee Huller Operator 2. Dryer / Roaster Plant Operator 3. Dosing, Filling, Weighing and Sealing Machine Operator 4. System Administrator 5. Spray Dryer Operator 6. Freeze Dryer Operator 	<ol style="list-style-type: none"> 1. Tea & Coffee Processing Plant Supervisor 	-
RTE & RTC Products	<ol style="list-style-type: none"> 1. Ingredient Preparator 	<ol style="list-style-type: none"> 1. Freeze Drying Machine Operator 2. Pick-Fill-Seal Machine Operator 3. Food Extruder Machine Operator 	<ol style="list-style-type: none"> 1. RTE/RTC Plant Supervisor 	-

Feedback has identified **78 Job roles** as Skill Gap Focus for Large & SME Firms (3/3)

Sub-Sector	NSQF Level 3	NSQF Level 4	NSQF Level 5	NSQF Level 6
Soya Processing	1. Soya Seed Cleaner & Pre-Processor	1. Soya Milling Machine Operator 2. Soya Nugget Machine Operator 3. Flour Packaging Machine Operator 4. Oil Pouch Packing Machine Operator	1. Soya Processing Plant Supervisor	-
Spices	1. Grader & Sorter	1. Grinding & Blending Machine Operator 2. Pouch Packaging Machine Operator 3. Steam Sterilisation Machine Operator 4. Cryogenic Grinding Machine operator	1. Spice Plant Supervisor	-
Cold Chain	-	1. Refrigeration Plant Operator 2. Cold Storage & Refrigeration Plant Mechanic 3. Material Handling Equipment Operator 4. Reefer Truck Driver	1. Cold Storage Supervisor	-

Common Job Roles:

NSQF Level 3 (Helper / Floor Cleaner / Loader & Unloader); NSQF Level 6 (Food Safety & Hygiene Manager)

Feedback has also identified 14 New Job roles which are likely to emerge in the Food processing sector

Emerging Area	NSQF Level 4	NSQF Level 5	NSQF Level 6	NSQF Level 7
Industry 4.0	-	1. Data Analyst - Food Industry 2. Factory Automation Engineer	1. Food Analytics and Insights Manager 2. Supply Chain Manager - Traceability and Product Recall	-
New product development specialist	1. Molecular Gastronomist 2. Food R&D Specialist	-	1. Food Product Development Manager	-
Food Fortification	1. Food Fortification Research Associate	-	-	1. Program Policy Officer - Food Fortification
Packaging – Smart packaging	1. Packaging Technologist	1. Packaging Engineer	-	-
Food labs – Testing	1. Food Lab Analyst	1. Food Scientist 2. Food Technologist	-	-

Thank You

DISCLAIMER

The information in this report has been obtained or derived from sources believed by Feedback Consulting Services Pvt Ltd (Feedback Consulting) to be reliable. Any opinions or estimates contained in this report represent the judgement of Feedback Consulting at this time and are subject to change without notice

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