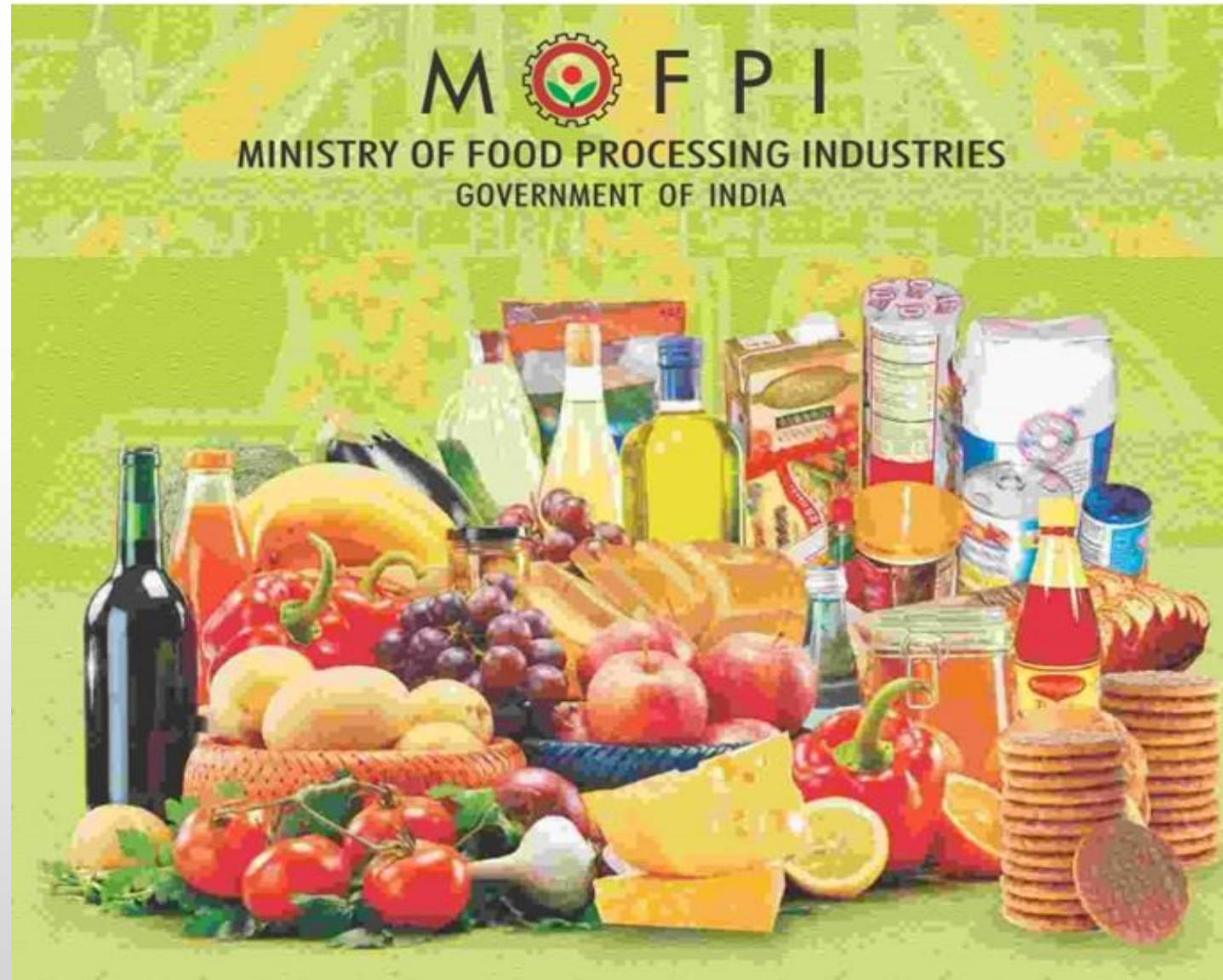


Food processing and related industries in India- scope' and significance, location, upstream and downstream requirements, supply chain management



Food processing

Food processing includes

- (i) **Manufactured Processes:** If any raw product of agriculture, animal husbandry or fishing is transformed through a process [involving employees, power, machines or money] in such a way that its original physical properties undergo a change and **if the transformed product is edible and has commercial value**, then it comes within the domain of Food Processing Industries.

- (ii) **Other Value-Added Processes:** If there is significant value addition (**increased shelf life, shelled and ready for consumption etc.**) such produce also comes under food processing, even if it does not undergo manufacturing processes.

Different levels of Food Processing

- Primary-Primary Processing relates to conversion of raw agricultural produce, milk, meat and fish into a commodity that is fit for human consumption. It involves steps such as **cleaning, grading, sorting, packing etc.**
- Secondary (e.g. Ready to cook)
- Tertiary (e.g. Ready to eat)

Harvest and Post-Harvest Losses of Agri-Produce

A nation-wide study on quantitative assessment of harvest and post-harvest losses for 46 agricultural produces in 106 randomly selected districts was carried out by Central Institute of Post-Harvest Engineering & Technology (CIPHET), Ludhiana in 2010.

The study estimated that harvest and post-harvest losses of major agricultural produces at national level was order of **Rs. 44,143 crore per annum.**

A repeat Study by CIPHET, Ludhiana was conducted in 2015 covering 45 agricultural crops of 107 districts. The study has estimated that annual value of harvest and post-harvest losses of major agricultural produces at national level was at **Rs. 92,651 crore .**

Harvest and Post-Harvest Losses of Agri-Produce

Percentage Loss of Major Agricultural Produce in India

Crops	Cumulative wastage (percent)	
	as per report 2010	as per report 2015
Cereals	3.9– 6.0	4.65– 5.99
Pulses	4.3– 6.1	6.36– 8.41
Oil seeds	2.8– 10.1	3.08– 9.96
Fruits &Vegetables	5.8– 18.0	4.58– 15.88
Milk	0.8	0.92
Fisheries (Inland)	6.9	5.23
Fisheries (Marine)	2.9	10.52
Meat	2.3	2.71
Poultry	3.7	6.74

Harvest and Post-Harvest Losses of Agri-Produce

Table 2.12:
Percentage Losses in Key Horticultural and Cereal Crops

Horticultural Crops	As per Report 2010	As per Report 2015
Guava	18.0%	15.88%
Mango	12.7%	9.16%
Apple	12.3%	10.39%
Grapes	8.3%	8.63%
Papaya	7.4%	6.70%
Banana	6.6%	7.76%
Cereal Crops	As per Report 2010	As per Report 2015
Wheat	6.0%	4.93%
Paddy	5.2%	5.53%
Bajra	4.8%	5.23%
Maize	4.1%	4.65%

Comparative level of Food Processing over the years

Category/ Commodity	IEG Study 2014		Deloitte study 2020-21	
	2005-06	2010-11	2015-16	2018-19
Coarse Cereals	17.7	23.3	28.6	29.4
Fruits	1.75	2.4	2.9	4.5
Vegetables	3.69	2.27	2.22	2.70
Milk	11.4	5.7	20.1	21.1
Fish	14.08	7.66	8.3	15.4
Meat	6.12	11.4	22.7	34.2

Raw Material Base of the Food Processing Industry

India's Position in World Agriculture in 2019

Item (1)	India (2)	World (3)	% Share (4)	India's Rank (5)	Next to (6)
1. Area (Million Hectares)					
Total Area	328.73	13497.30	2.44	Seventh	Russian Federation, Canada, U.S.A., China, Brazil, Australia
Land Area	297.32	13030.09	2.28	Seventh	Russian Federation, China, U.S.A., Canada, Brazil, Australia
Arable Land	156.07	1383.35	11.28	Second	U.S.A.
2. Population (Million)*					
Total	1352.64	7631.09	17.73	Second	China
Rural	893.27	3413.00	26.17	First	
3. Crop Production (Million Tonnes)					
(A) : Total Cereals					
Wheat	103.60	764.98	13.54	Second	China
Rice (Paddy)	177.65	749.19	23.71	Second	China
(B): Pulses					
	21.54	84.69	25.44	First	
(C): Oilseeds					
Groundnut (with shell)	6.73	49.54	13.58	Second	China
Rapeseed	9.26	71.84	12.88	Third	Canada, China

(D): Commercial Crops

Sugarcane	405	1955	20.73	Second	Brazil
Tea	1.39	6.76	20.56	Second	China
Coffee (green)	0.32	10.03	3.19	Eighth	Brazil, Vietnam, Colombia, Indonesia, Ethiopia, Honduras, Peru
Jute	1.71	3.38	50.52	First	
Tobacco Unmanufactured	0.76	6.46	11.74	Third	China, Brazil

4. Fruits & Vegetables Production**(Million Tonnes)**

(A): Vegetables Primary	137.40	1129.67	12.16	Second	China
(B): Fruits Primary	104.05	882.16	11.79	Second	China
(C): Potatoes	50.19	354.81	14.15	Second	China
(D): Onion (Dry)	22.82	99.52	22.93	Second	China

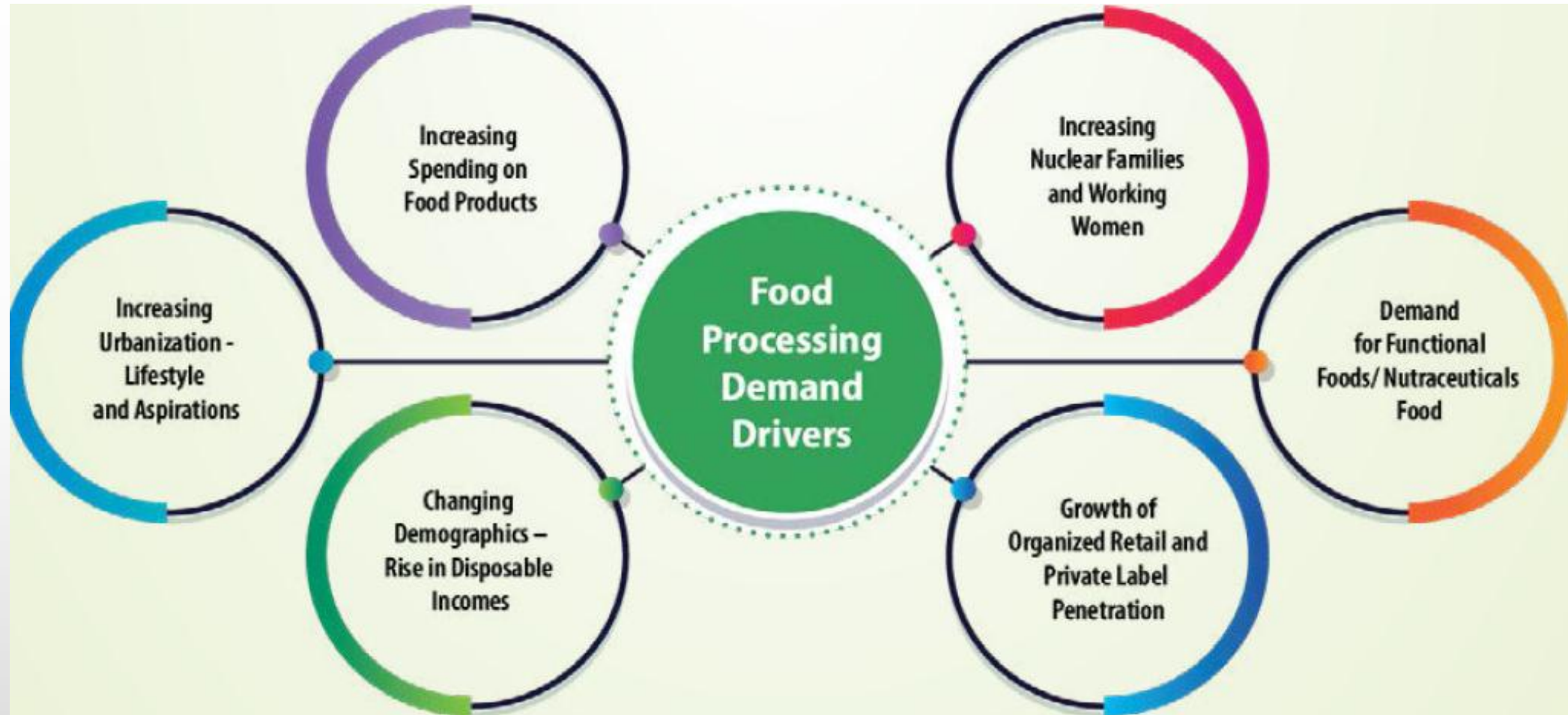
5. Livestock (Million Heads)

(A): Cattle	193.46	1511.11	12.80	Second	Brazil
(B): Buffaloes	109.85	202.45	54.26	First	
(C): Camels	0.25	38.16	0.66	Nineteenth	Chad, Somalia, Sudan, Kenya, Niger, Ethiopia, Mauritania, Mali, Pakistan, U.A.E, Saudi Arabia, Mongolia, Yemen, Algeria, China, Eritrea, Nigeria, Oman

(D): Sheep	74.26	1240.31	5.99	Second	China
(E): Goats	148.88	1108.97	13.43	First	
(F): Chickens	807.89	33235.54	2.43	Seventh	U.S.A, China, Indonesia, Brazil, Pakistan, Iran
6. Dairy Products (Million Tonnes)					
(A): Milk Total	187.63	876.83	21.40	First	
(B): Eggs (Primary) Total	6.29	90.38	6.96	Third	China, U.S.A
(C): Meat, Total	8.14	335.46	2.43	Fifth	China, U.S.A, Brazil, Russian Federation

Source- Agricultural Statistics at a Glance 2021

Food Processing Sector –Growth Potential



Food processing and related industries in India- Significance

- Food processing could strengthen the **link between agriculture and industry**.
- A well-developed food processing sector with higher level of processing helps in the **reduction of wastage**, improves value addition, promotes crop diversification, ensures better return to the farmers, promotes employment as well as increases export earnings.
- This sector is also capable of **addressing critical issues** of food security, food inflation and providing wholesome, nutritious food to the masses.

Contribution of Food Processing Sector to GDP

- During the last 5 years ending 2019-20, Food Processing sector has been growing at an **Average Annual Growth Rate (AAGR)** of around **11.18 per cent** as compared to around 4.19 per cent in Agriculture (at 2011-12 prices).
- The Gross Value added (GVA) in the food processing sector was Rs.2.24 lakh crore in 2019-20 contributing **1.69% of the total GVA** in the country.

Employment in Food Processing Sector

- Food processing sector is a **labour intensive** sector.
- As per the latest Annual Survey of Industries (ASI) 2018-19, there were **40,579 food processing units in the registered sector**. Food processing sector was **ranked 1st** in total number of persons engaged in the manufacturing sector. Total number of **persons engaged in registered food processing sector was 20.05 lakhs**.
- As per this latest National Sample Survey (NSS 73rd, Round 2015-16), there were **24.59 lakh food processing enterprises in the unregistered segment** out of which 93.6 % were in the micro category, 5.7% in the small category and remaining 0.7% in the medium category. Unregistered food processing sector supported employment to **51.11 lakh worker**.

State/UT-wise No. of Registered and Unincorporated Food Processing Units in India

Sl. No.	Name of the State/UTs	Number of Registered Units as per Annual Survey of Industries 2018-19	Number of Unincorporated Enterprises manufacturing Food and Beverages as per 73rd round Survey of NSSO, 2015-16
1	Andaman & Nicobar Islands	4	774
2	Andhra Pradesh	5653	1,54,330
3	Arunachal Pradesh	27	145
4	Assam	1569	65,997
5	Bihar	884	1,45,300
6	Chandigarh(U.T.)	17	656
7	Chhattisgarh	1630	26,957

8	Dadra & Nagar Haveli	9	622
9	Daman & Diu	33	136
10	Delhi	169	14,350
11	Goa	106	2,929
12	Gujarat	2245	94,066
13	Haryana	1045	24,577
14	Himachal Pradesh	157	21,885
15	Jammu & Kashmir	176	28,089
16	Jharkhand	240	1,16,536
17	Karnataka	2343	1,27,458
18	Kerala	1708	77,167
19	Lakshadweep	0	127
20	Madhya Pradesh	927	1,02,808
21	Maharashtra	2791	2,29,372
22	Manipur	30	6,038

23	Meghalaya	30	3,268
24	Mizoram	0	1,538
25	Nagaland	20	3,642
26	Odisha	1188	77,781
27	Puducherry	66	3,482
28	Punjab	3114	63,626
29	Rajasthan	898	1,01,666
30	Sikkim	20	101
31	Tamil Nadu	4982	1,78,527
32	Telangana	3900	80,392
33	Tripura	105	13,998
34	Uttar Pradesh	2105	3,50,883
35	Uttarakhand	362	18,116
36	West Bengal	2026	3,22,590
	Total	40,579	24,59,929