

Data Bank on Economic Parameters of the Food Processing Sector

Food processing industry in India is a sunrise sector that has gained prominence in the recent years. Availability of raw materials, changing lifestyles and appropriate fiscal policies has given a considerable push to the industry's growth. This sector serves as a vital link between the agriculture and industrial segments of the economy. Strengthening this link is of critical importance to reduce waste of agricultural raw materials, improve the value of agricultural produce by increasing shelf-life as well as by fortifying the nutritive capacity of the food products; ensure remunerative prices to farmers as well as affordable prices to consumers. Adequate focus on this sector could greatly alleviate our concerns on food security and food inflation. India already is a leading exporter of several food products. To ensure that this sector gets the stimulus it deserves, Ministry of Food Processing Industries is implementing a number of schemes for Infrastructure development, technology up-gradation & modernization, human resources development and R&D in the Food Processing Sector.

In order to effectively monitor the impact of existing schemes and to formulate appropriate policies, it is vital to collect and maintain reliable data relating to production, value addition, consumption, investment (domestic and FDI), employment, exports and imports. Unfortunately, the availability of data, especially for the unorganized sector is poor. An effort is being made to set up a robust data base on food processing sector by tapping all existing authentic sources in public domain. No systematic and scientific data pertaining to the food processing sector based on harmonised concepts, definitions and classifications are currently available. Most of the available data are sourced from different functional ministries/departments, business associations, research institutions and NGOs. Each data set is not strictly comparable with the others as they do not harmonize with one another in terms of product classifications. Industry Associations/Expert groups often rely on insights and subjective projections, which may not be easy to validate as their basis is often insider information and not in public domain. The lack of a comprehensive and reliable data base on Food Processing Industry sector is a constraint in policy formulation and decision making. It was in this context, a decision was taken to develop a database of critical parameters related to the sector in order to feed the decision making processes and other information needs of the Ministry. **Given the limitation of the existing data sources on food processing sector, an attempt has been made to develop a systematic database on the sector from the available official sources of data.**

Definition of Food Processing

The need for defining what should be construed as Food Processing was necessary because of different classifications by various departments/organizations (Ministry of Statistics and Programme Implementation, DGCI&S, DIPP etc.) on what Food Processing includes. Since this ministry has to compile the data from all such sources, there is a need for conceptual clarity on food processing. **Henceforth this Ministry will include under food processing industries, items pertaining to these two processes viz. (a) Manufactured Processes: If any raw product of agriculture, animal husbandry or fisheries 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 and (b) Other Value-Added Processes: Hence, 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.**

The Ministry of Food Processing Industries does not deal with a few food items such as coffee, tea, oilseeds, spices etc. as the allocation of these items are with other Ministries under the Allocation of Business Rules for Central Ministries. However, all these items are also included in the data base in order to provide a comprehensive picture of the industry.

Different stages of processing of manufactured food products



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 and Tertiary Processing Industries usually deal with higher levels of processing where new or modified food products are manufactured.

In delineating the contribution of the Food Processing sector in the Indian economy, it is essential to clarify, what food processing sector consists of in the Indian context. The overwhelming nature and type of food processing activities undertaken in the country makes it difficult to prepare detailed activity and product classification for the sector. Different sources maintaining data on Industrial and sectoral performances have diverse definitions and therefore most of these cannot be linked or simply compared.

Sources of Data

List of indicators on which data is proposed to be collated and details of the sources are provided below:

	Indicators	Source
1	Growth of the Sector (Contribution to GDP)	National Accounts Statistics (NAS), CSO
2	No. of Factories/Units	ASI – Organized & NSSO -Unorganized
3	Employment provided	ASI – Organized & NSSO -Unorganized
4	Fixed Capital	ASI – Organized & NSSO -Unorganized
5	Exports data	DGCI&S
6	Extent of Wastage	CIPHET Study
7	Foreign Direct Investment (FDI)	DIPP, Min of Commerce & Industry
8	Credit Deployed in FP Sector	Reserve Bank of India

• Annual Survey of Industries

The Annual Survey of Industries (ASI) is the principal source of industrial statistics in India. It provides statistical information to assess and evaluate, objectively and realistically, the changes in the growth, composition and structure of registered manufacturing sector.

• National Sample Survey Rounds

National Sample Survey Office (NSSO) conducted an integrated survey of households and unorganised manufacturing enterprises in the 62nd round of NSS during July, 2005 –June, 2006 and subsequently in 67th rounds of NSS during July, 2010 –June, 2011. The subjects covered were employment, output, assets, and fixed capital in unorganised manufacturing enterprises.

- **Index of Industrial Production (IIP) by CSO**

Index of Industrial Production (IIP) is defined as a summary measure that measures the changes in the volume of industrial production of a representative basket of industrial products during a particular period with respect to a chosen base period. The IIP for the base period is taken as 100 and that for the study period shows the percentage increase or decrease over the base period. NIC 2004, 2 digit level Industry Code '15' covers Food Products and beverages and is taken as representative group which includes the subject of this ministry, Food Processing Industries.

- **DGCI&S, Kolkata**

Foreign trade data is disseminated by DGCI&S on monthly basis.

- **National Accounts Statistics (NAS) by CSO**

The annual publication of "National Accounts Statistics (NAS)" presents the estimates of national/ domestic product, consolidated accounts of the nation, private final consumption expenditure, savings, capital formation, public sector transactions and disaggregated statements.

- **DIPP, Ministry of Commerce**

FDI Statistics is disseminated by DIPP on a monthly basis.

- **Central Institute of Post-Harvest Engineering & Technology (CIPHET)**

A nation-wise study on quantitative assessment of harvest and post-harvest losses for 46 agricultural produces in 106 randomly selected districts was carried out by CIPHET, Ludhiana.

Using various data sources, the following information has been collated for the food processing sector.

Food Processing – Production and Contribution of GDP

The ASI and NSSO data is classified into NIC groups based on International Standard Industrial Classification and it has been assumed that the factories listed in the following groups can be summed up to constitute Food Processing Industries.

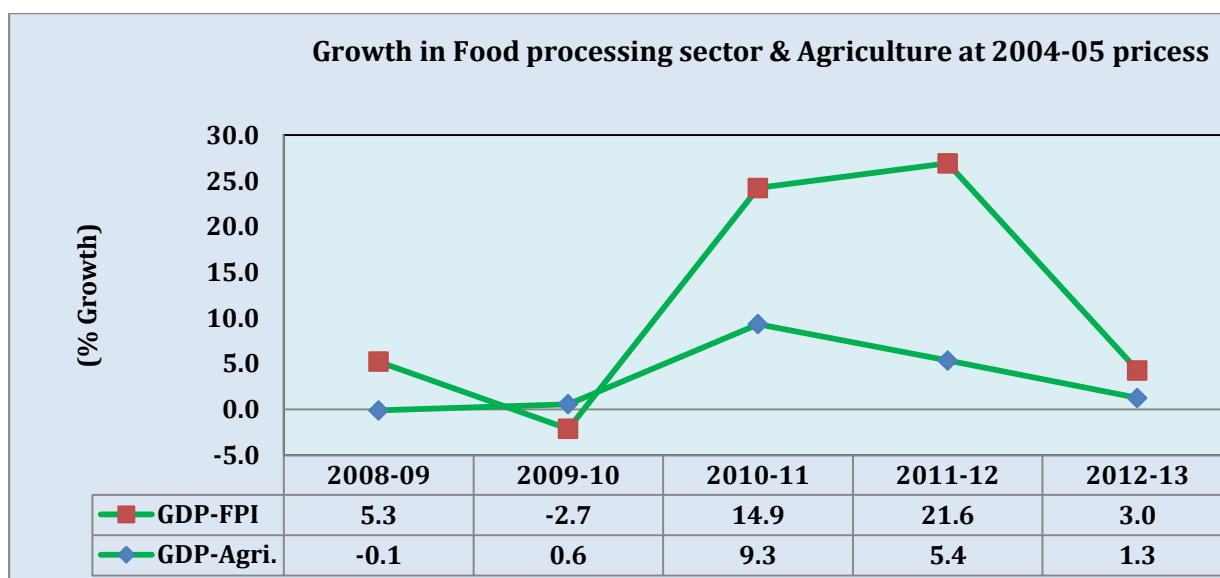
S.No	NIC Group	Description
1	151	Production, Processing and Preservation of Meat, Fish, Fruits, Vegetables, Oils and Fats
2	152	Manufacturing of Dairy Products
3	153	Manufacture of Grain Mill Products, Starches and Starch products and prepared animal feeds.
4	154	Manufacture of Other Food Products.
5	155	Manufacture of Beverages.

The above groups also include food products which are under the mandate of Ministries other than Ministry of Food Processing Industries.

National Accounts Statistics is also using the NIC groups to report the contribution to GDP for each group. 151-155 NIC groups as mentioned above are added to derive the contribution of food processing sector.

Contribution of Food Processing Industries to Gross Domestic Product at 2004-05 Prices (Rs. Crore)							
S. No.	Description	2008-09	2009-10	2010-11	2011-12	2012-13	
	GDP at Factor Cost, Of which	41,58,676	45,16,071	49,18,533	52,47,530	54,82,111	
1	GDP-Agriculture*	5,88,757	5,92,110	6,47,305	6,82,016	6,90,646	
2	GDP: Manufacturing	6,56,302	7,30,435	7,95,152	8,54,098	8,63,876	
3	GDP-FPI	60,378	58,752	67,508	82,063	84,522	
	Growth (%)						AAGR \$
4	GDP at Factor Cost	6.7	8.6	8.9	6.7	4.5	7.1
5	GDP-Agriculture*	-0.1	0.6	9.3	5.4	1.3	3.3
6	GDP: Manufacturing	4.3	11.3	8.9	7.4	1.1	6.6
7	GDP-FPI	5.3	-2.7	14.9	21.6	3.0	8.4
	Share of FPI in GDP (%)						Average
8	GDP FPI as a share of GDP in Agriculture*	10.3	9.9	10.4	12.0	12.2	11.0
9	GDP FPI as a share of GDP in Manufacturing	9.2	8.0	8.5	9.6	9.8	9.0
Source: National Accounts Statistics-2014; * Excludes Forestry & Logging; \$: Five Year Average Annual Growth Rate							
GDP: Sum of GVA (value of output less the value of input used up in the process of production) of all resident producer units of the economy during the reference period.							

Performance of this sector has improved significantly in the recent years. Manufacturing sector was generally growing at a higher rate than FPI till 2009-10. Performance of FPI improved substantially in 2011-12 registering a record growth of 21.6 per cent. In the year 2012-13, the growth of food processing sector decelerated along with slow growth both in agriculture and manufacturing sectors though the growth of the sector was higher than both agriculture and manufacturing sector.



Source: National Accounts Statistics (NAS), CSO.

As seen in the graph above, the contribution of food processing sector to GDP has been growing faster than that of the agriculture sector. *If the contribution to GDP of both agricultural sector and food processing sector were growing at the same rate, then it would mean that the growth in food processing sector is only due to increased agricultural raw material supply. However, what this graph indicates is that more and more agricultural products are being converted (in value terms) to food products. This means that the level of processing in value terms has been increasing. At present there is no other estimate on the level of physical processing (Tonne for tonne or litre for litre) of various agricultural products in the country. This Ministry proposes to continue using this method (viz. using the contribution to GDP by NIC 151-155 and contribution of agriculture to GDP) to determine the level of food processing in the country.*

In the meanwhile, this Ministry has initiated a study along with Department of Agriculture and Co-operation, where Institute of Economic Growth (IEG) Delhi will **assess the level of physical food processing by using unit level ASI/NSSO data**. The objective of the study is to assess the level of food processing at the initial stage (from agricultural produce to processed food) and subsequent stages (where the basic food product is converted to a variety of value added food and beverage items). The outcome of the study would be clear base line figures on different stages of food processing in various food groups so that we can estimate how much (1) is the level of processing in physical terms of various crops; (2) value addition that takes place at different stages of processing and (3) how much waste occurs due to lack of adequate processing facilities.

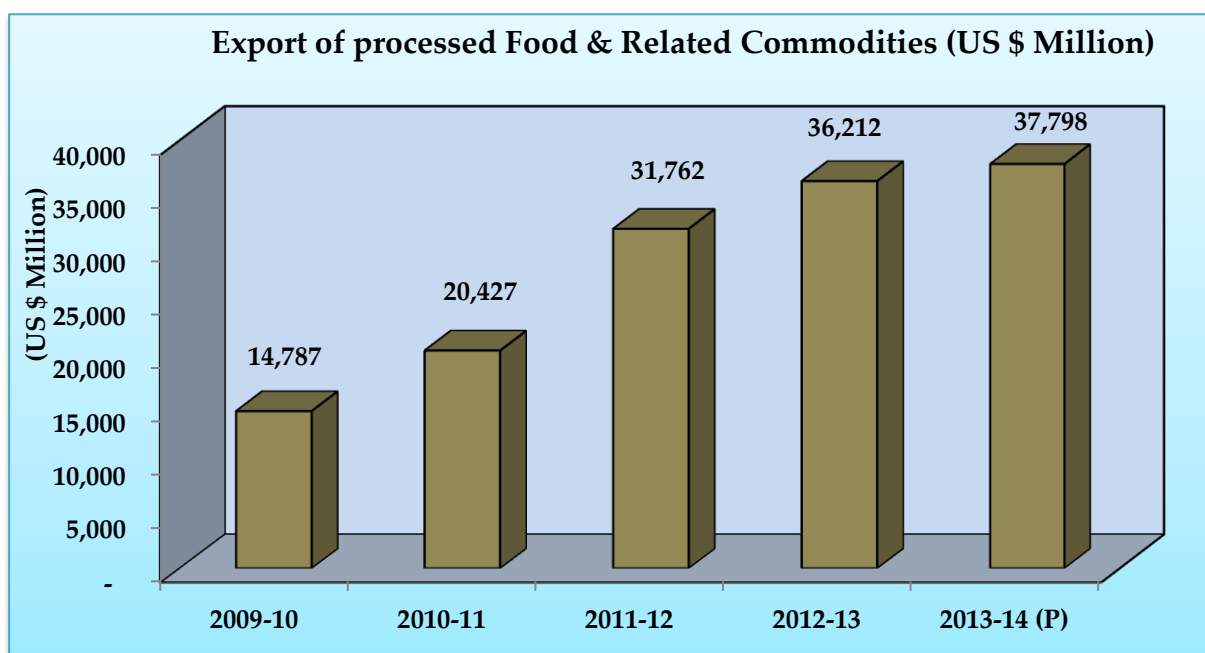


Food Processing Industry is one of the major employment intensive segments constituting 12.13 per cent of employment generated in all Registered Factory sector in 2011-12. According to the latest Annual Survey of Industries (ASI) for 2011-12, the total number of persons engaged in registered food processing sector is 17.77 lakhs. During the last 5 years ending 2011-12, employment in registered food processing sector has been increasing at an Annual Average Growth Rate of 3.79 per cent. Unregistered food processing sector supports employment to 47.9 lakh workers as per the NSSO 67th Round, 2010-11.

Exports of Food Processing related items

All agricultural produce when exported undergo an element of processing. Hence all edible agricultural commodities exported are included in the export data. The value of exports in the sector has been showing an increasing trend with Average Annual Growth Rate (AAGR) of 20.53 per cent for five years ending 2013-14.

The value of processed food exports during 2013-14 (Provisional results) was of the order of US \$ 37.79 Billion (total exports US \$ 312 Billion) constituting 12.1 per cent of India's total exports. The trends in exports of processed food & related commodities, is given below:



Source: DGCI&S, Kolkata; P: Provisional Results.

The exports of major processed food & related commodities from Food processing sector, is given below:

Exports of major processed food & related commodities from Food Processing sector					
S.no.	Exports	2012-13	2013-14 (P)	2013-14 (P)	
		(US \$ Million)		(%) Growth	(%) Share
	Total Exports	3,00,401	3,12,621	4.07	-
	Exports-FPI, of which	36,212	37,798	4.38	12.1
1	Marine products	3,464.08	5,014.89	44.77	13.3
2	Rice- Basmati	3,564.04	4,866.33	36.54	12.9
3	Meat & meat preparations	3,291.98	4,481.35	36.13	11.9
4	Rice-other than Basmati	2,651.97	2,875.67	8.44	7.6
5	Cashews	746.97	842.39	12.77	2.2
6	Fresh Vegetables	605.23	842.30	39.17	2.2
7	Fresh Fruits	607.79	726.76	19.57	1.9

Source: DGCI&S, Kolkata; P: Provisional Results

Investment in Food Processing

Foreign Direct Investment (FDI) is permissible for all the processed food products up to 100 per cent on automatic route except for items reserved for Micro and Small Enterprises (MSEs) subject to applicable laws/ regulatory, securities and other conditionalities. For manufacture of items reserved for Micro Small Medium enterprises, FDI is permissible under automatic route up to 24 per cent of the capital. If foreign investment is more than 24 per cent, Industrial License under Industries (Development & Regulation), Act 1951 is required.

Foreign Direct Investment (FDI) inflows in Food Processing sector in the country during last 6 years and current year is as below:

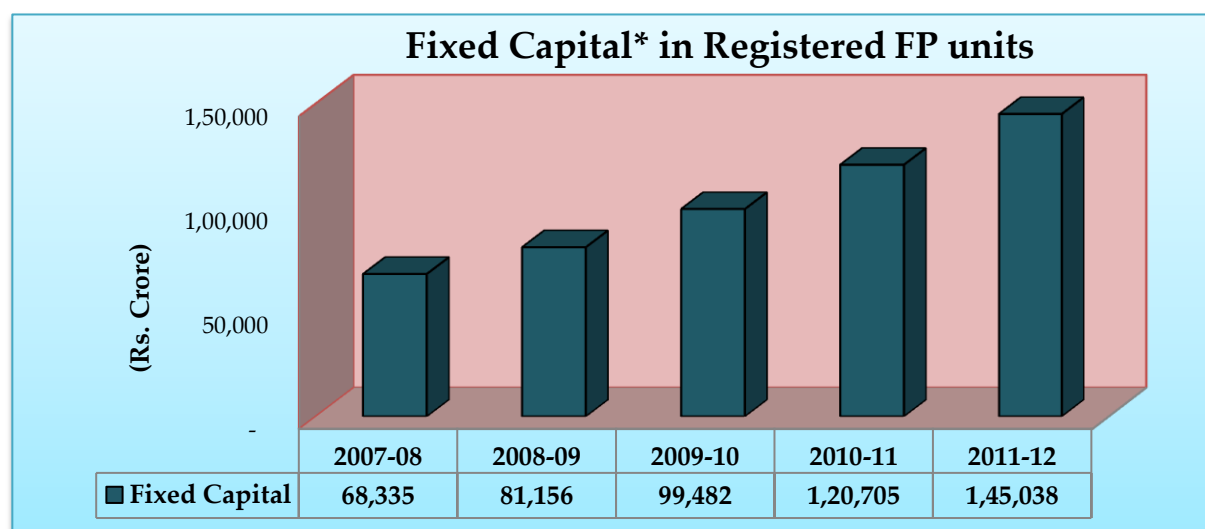
S. No.	Year (April- March)	FDI (Rs. Crore)	FDI (US \$ Million)
1	2007-08	279.01	70.17
2	2008-09	455.59	102.71
3	2009-10	1,314.23	278.89
4	2010-11	858.03	188.67
5	2011-12	826.16	170.21
6	2012-13	2193.65	401.46
7	2013-14	25,106.78	3,982.88

Source: Department of Industrial Policy and Promotion (DIPP)

In terms of fixed capital, FP sector is growing at an AAGR of 20.35 per cent during five years ending 2011-12. As per the latest, ASI 2011-12, the Fixed Capital in FP Industry stood at Rs. 1,45,038 crore.

Fixed Capital* in Registered Food Processing Industries						
Year	2007-08	2008-09	2009-10	2010-11	2011-12	AAGR \$
Fixed Capital (Rs. Crore)	68,335	81,156	99,482	1,20,705	1,45,038	
Growth Rate (%)	18.93	18.76	22.58	21.33	20.16	20.35

Source: Annual Survey of Industries, CSO; *: Fixed capital: Depreciated value of Fixed Assets owned by factory. \$: Average Annual Growth Rate for 5 years.



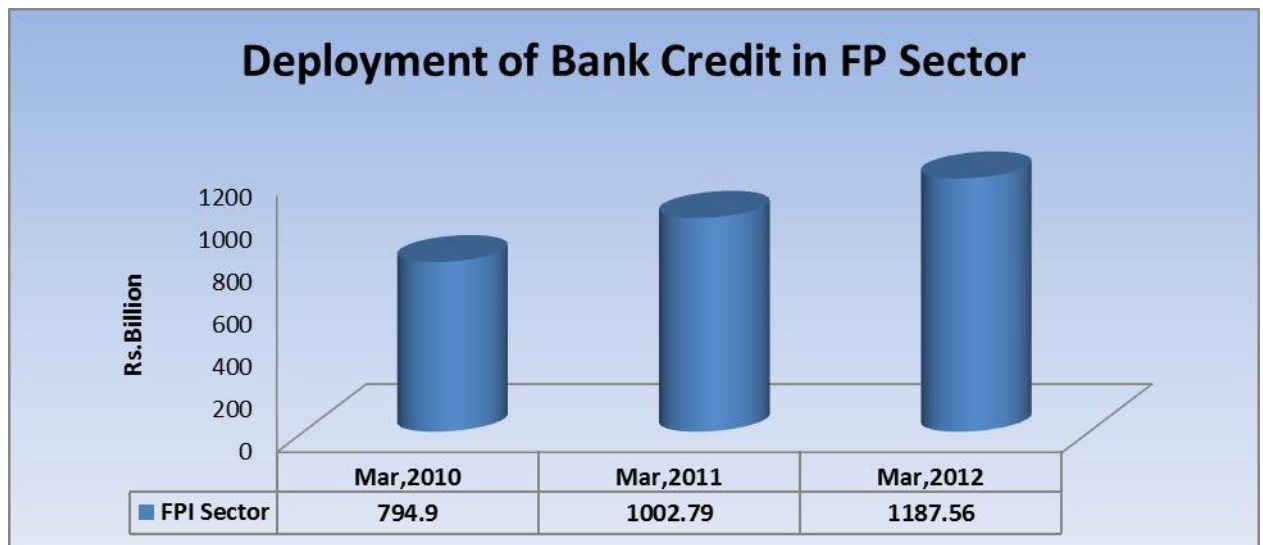
Source: Annual Survey of Industries; *: Fixed capital: Depreciated value of Fixed Assets owned by Factory.

Credit Deployment in Food Processing Industries:

Reserve Bank of India maintains data on sectoral deployment of credit on monthly basis for select banks, which cover 95 per cent of total non-food credit extended by all scheduled commercial banks. In the Food Processing Sector, the groups listed are:

- 1 Sugar
- 2 Edible Oils & Vanaspti
- 3 Tea
- 4 Alcoholic & Non-Alcoholic Beverages
- 5 Others (which include other NIC 15 items)

As per the RBI's report, the total bank credit outstanding in Food Processing Sector was Rs 1,18,755 crore by the end of March, 2012 which was 18.43 % higher than the amount as on the same period of previous year. Outstanding bank credit includes any principal amount due from the units which may not have been repaid. RBI does not maintain a separate break-up of defaults. The share of Food processing sector in the total credit outstanding to All Industries is 5.2% and it was almost the same during the last year.



Source: Reserve Bank of India

Losses in Supply Chain

Despite the large production of food in India, food inflation and food security issues are major concerns for policy makers in the country as they affect the basic need for Indian citizens – to have sufficient, healthy and affordable food, 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 CIPHET, Ludhiana.

The study mainly considers the quantitative loss as the material rendered “unfit for human consumption”. The different stages considered for assessment of losses are harvesting, collection, threshing, grading /sorting, winnowing /cleaning, drying, packaging, transportation, and storage depending upon the commodity.

The report of the study was released in 2010. The study has estimated harvest and post-harvest losses of major agricultural produces at national level was of the order of Rs. 44,143 crore per annum at 2009 wholesale prices.

Percentage of losses estimated for major produces	
Crop	Cumulative wastage (per cent)
Cereals	3.9 – 6.0 per cent
Pulses	4.3-6.1 per cent
Oil seeds	2.8-10.1 per cent
Fruits & Vegetables	5.8-18.0 per cent
Milk	0.8 per cent
Fisheries (Inland)	6.9 per cent
Fisheries (Marine)	2.9 per cent
Meat	2.3 per cent
Poultry	3.7 per cent

Source: CIPHET Study on post-harvest losses, 2010

It may be seen that most of the wastage is happening in fruits and vegetables, pulses and cereals. With adequate processing facilities, much of this waste can be reduced thus increasing remunerative wage to the producer as well as ensuring greater supply to the consumer. The Ministry of Food Processing Industries has assigned a repeat study to CIPHET, Ludhiana for same 106 districts to assess the position at present. The study is expected to be completed in January, 2015.

Other Important Sources for Data relating to food processing industries

<http://dipp.nic.in>

<http://mospi.nic.in>

www.apeda.gov.in

<http://rbi.org.in>

www.fao.org

<http://agricoop.nic.in>

www.nddb.org

www.nhb.gov.in

[World Commodity Prices & Forecast](#)

[World Food Situation](#)