

VALUE ADDITION THROUGH FOOD PROCESSING

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Our country reached the status of 'lower middle-income' among the countries in the world and therefore, the share of processed food in the food basket of our population is bound to go up. Diversification of diets, globalisation of diets, urbanisation, rising share of women in work force, nuclear families juxtaposed with supply-side factors like changing policy perspectives including digitalisation and export opportunities propel growth of food processing sector in India.

Food processing is where agriculture meets industry. In the increasingly rising share of non-agriculture activities of contemporary rural India, processing industries can play a vital role in achieving the avowed objective of 'doubling farm income'. The consumption of processed foods is synchronous with the rise in incomes as income elasticity of these foods is very high. It is worth noting that our country reached the status of 'lower middle-income' among the countries in the world and therefore, the share of processed food in the food basket of our population is bound to go up. Diversification of diets, globalisation of diets, urbanisation, rising share of women in work force, nuclear families juxtaposed with supply-side factors like changing policy perspectives including digitalisation and export opportunities propel growth of food processing sector in India.

Innovations in midstream of the value chain can have significant impacts on agricultural performance, and might potentially benefit producers and consumers alike, they have received less attention in the literature and policy discussions on agriculture (Rao et al., 2017). India is no exception to this general trend and in fact, the situation is rather grim with perverse incentive structure. Processed foods were considered rich people food for a long time and suffered heavy taxation, riddled with so many taxes including steep taxes for packaged products. This has been gradually changed with successive reduction in excise duties and state taxes to benefit farmers (Rao, 2009; Rao and Dasgupta, 2009). Concept of cold chain was non-existent until the late nineties and post-harvest losses were very high with poor infrastructure. Transport costs are relatively high leading scholars to conclude that importing from other countries is cheaper than transporting from one part of the country to another. Standards and protocols for food safety and laws for food safety

were absent until recently (Dev and Rao, 2005).

The food policy in India has mainly focused on increasing the production with a view to substitute imports which became a common feature during the immediate post-independence years until the eighties. Therefore, the issue of processing the food did not arise as a policy question until the eighties. On the other hand, the industrial policy since the second five year plan concentrated on the heavy industries required to build up the necessary infrastructure for the industrial development. Though there were some food processing industries in the organized sector, they were part of small and village industries and have no separate identity.

The consistent rise in per capita incomes and the shifting of the incomes after 1981 to a higher growth path led to the rise in middle classes, who have the purchasing power to buy the processed foods. The growth of manufacturing industry also necessitated encouraging food processing sector. The central government, in view of these changes, has

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FARMERS' WELFARE

Mobilizing resources to enhance agricultural productivity

- 81.8 lakh Soil Health Cards distributed to farmers and 54.4 lakh soil samples tested
- Curbed illegal use of urea & ensured adequate supply through Neem Coated Urea
- Timely information and advisory services through Kisan Call Centre and Kisan Suvidha App
- Consumption of nitrogen fertilizers decreased & consumption of phosphorus potash and micronutrients increased

started attempts to invigorate the sector by forming a separate ministry for food processing industries in 1988. This is to bring out the fact that India is a late entrant into the food processing sector and international market. Though some measures are initiated after the formation of the ministry for the speedy development of the sector, it is only after the country embarked on full scale liberalization in 1991 that the food processing sector got real impetus. Several policy initiatives for freeing the licensing system, foreign investment etc., are taken during this time for encouraging the sector.

The entire sector was deregulated and no license is required except in case of items reserved for small-scale sector and alcoholic beverages. Automatic approval for foreign investment up to 100 per cent equity in food processing industries is available except in a few cases. Hundred per cent export oriented units are permitted to import raw material and capital goods free of duty. The excise duty on food processing items was removed in 1991 and again imposed in 1997. This excise duty of 16

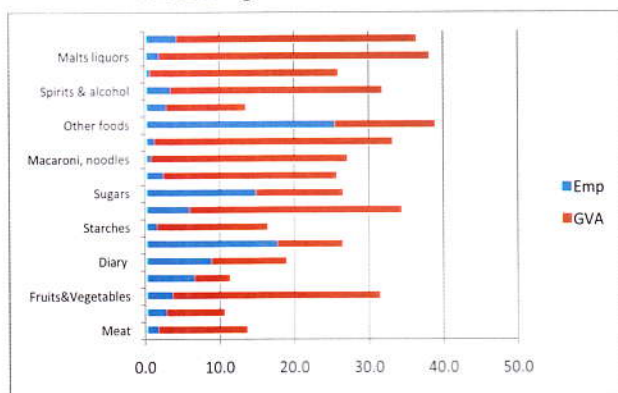
per cent was again removed in 2001. The concept of food parks, agri-export zones, mega food parks, cold chains and human resource development have been initiated besides several incentive schemes during this period. The central government has released a food processing policy in 2001 and again in 2005. The new agro-processing industries set up to process, preserve and package fruits and vegetables are allowed under Income tax Act, a deduction of 100 per cent for five years and 25 per cent of profits for the next five years since 2004-05. However, the role of state is considered to be vital. Hence, the centre has urged the state governments to allow exemption for this sector from sales tax and other local taxes. Several state governments have also announced food processing policies. Most recently, centre has allowed 100% FDI in trading of food products including through e-commerce to boost growth of the sector. 42 food parks sanctioned with a total investment of 2100 crores and expected a total investment of 4500 crores and additional investment of around the same amount for setting up of processing units.

Table 1: Salient Features of Organised Food Processing Industries in 2013-14

NIC, 2008 4-digit	Type of processing	No. of factories	No. of persons	Total output	Fixed capital	GVA	FC per factory	GVA %	Emp. Per crore
1010	Processing and preserving of meat	148	25607	27520	2298	2907	15.53	11.81	11.14
1020	Processing and preserving of fish, crustaceans and molluscs and products thereof	466	44178	27061	2460	1932	5.28	7.69	17.96
1030	Processing and preserving of fruit and vegetables	1101	58331	13893	6571	3015	5.97	27.71	8.88
1040	Manufacture of vegetable oils and animal fats	3300	107623	157001	14056	7015	4.26	4.68	7.66
1050	Manufacture of dairy products	1753	145601	110656	12039	10068	6.87	10.01	12.09
1061	Manufacture of grain mill products	18272	296548	175746	17951	13941	0.98	8.62	16.52
1062	Manufacture of starches and starch products	744	23111	10336	3644	1329	4.9	14.76	6.34
1071	Manufacture of bakery products	1498	96561	20484	4963	4518	3.31	28.30	19.45
1072	Manufacture of sugar	791	247953	85884	47755	8880	60.37	11.53	5.19

NIC, 2008 4-digit	Type of processing	No. of factories	No. of persons	Total output	Fixed capital	GVA	FC per factory	GVA %	Emp. Per crore
1073	Manufacture of cocoa, chocolate and sugar confectionery	505	37469	14750	5842	2772	11.57	23.15	6.41
1074	Manufacture of macaroni, noodles, couscous and similar farinaceous products	105	9948	3973	1497	825	14.26	26.2	6.65
1075	Manufacture of prepared meals and dishes	298	18153	2765	933	666	3.13	31.75	19.46
1079	Manufacture of other food product n.e.c	5546	426659	86271	17546	10135	3.16	13.31	24.32
1080	Manufacture of prepared animal feeds	820	44786	37166	4093	3534	4.99	10.51	10.94
1101	Distilling, rectifying and blending of spirits, ethyl alcohol production from fermented materials	369	54226	24854	10078	5474	27.31	28.25	5.38
1102	Manufacture of wines	71	7859	2947	738	591	10.39	25.10	10.65
1103	Manufacture of malt liquors and malt	143	28302	11740	5709	3117	39.92	36.15	4.96
1104	Manufacture of soft drinks, production of mineral waters and other bottled waters	1520	68120	21548	10228	5231	6.73	32.06	6.66
	All food processing industries	37175	168917	834597	168401	85952	4.50	11.48	10.03

Figure 1: Level of GVA and Share of Employment in Food Processing Industries in 2013-14



The scourge of organised food processing sector continues to be very low value added at just 12% in 2013-14 and much less in some of the

important industries like vegetable oils and fats (5%), dairy products (10%), grain mill products (8.6%) and fish products (7.7%) (Table 1). Leading industries in terms of gross value added malt liquors (36.2%), soft drinks (32.1%), and spirits and alcohol (28.3%) (Figure 1). In regard to employment, leading industries changes to other food products (25.3%), grain mill products (18%), and sugars (15.4%).

The main paradox in food processing industries is the dichotomy between organised and unorganised segment in regard to output and employment. While output and value added are higher in the organised segment, unorganised segment with one-fifth of output employs three times higher employment. Employment in unorganised segment was 47.93 lakhs in 2010-11 (from 37.08 lakhs in 2000-01), while organised segment employed 16.89 lakhs in



2013-14 making the total to 64.82 lakhs in a ratio of 74% in the unorganised segment. While the output was in the ratio of 78% and 22% in the organised and unorganised sector. The fixed capital per firm and output per person are lower in organised segment itself relative to total manufacturing Food processing industries operate at just 45% of the fixed capital per enterprise relative to the average of all manufacturing industries and produce 82% of output/ person compared to manufacturing average. This is the major problem in this sector leading to low productivity of persons engaged in this work (Chadha and Sahu, 2003). While this is the situation on the average, some of the industries like grain mill products, tobacco industries, macaroni, noodles and other products, and several others perform poorly with low capital per enterprise as well as output except spirits, and vegetable oils and fats.

The sector witnessed an impressive growth of 12% per annum from 2004-09 compared to just 6% in the previous two decades before that. However, the growth momentum was lost after 2011 and had been showing signs of recovery in the past few years. In terms of share of this sub-sector in the manufacturing sector in regard to both output and employment was declining. Share of organised food processing plummeted from 17.31% in 2005-06 to 11.59% in 2013-14, while employment during the same period went down from 17.12% to 12.8%. Similarly, share of employment in unorganised segment declined from 17.41% to 13.74% in 2010-11. While unorganised food segment added one million jobs from 2000-01 to 2010-11, organised segment stagnated at around 16 lakh jobs since 2009. It needs further analysis to understand the underlying causes for this decline of share in manufacturing. It needs to be underlined here that the sector has been growing share of organised segment in output and value added has been going up showing the consolidation in the sector.

Table 3: Cold-Chain Infrastructure Gap in India in 2015

Type of infrastructure	Infrastructure requirement (A)	Infrastructure created (B)	All-India gap (A-B)
Pack-house	70,080	249	69,831
Cold-storage (Bulk) in million metric tones	341.64	318.24	3.28
Cold storage (Hub) in million metric tones	0.94		
Reefer vehicles in numbers	61826	9000	52826
Ripening chambers in numbers	9131	812	8319

(Source: NCCD (2015))

On the other hand, the growth of exports and inflow of FDI into the sector were impressive. Foreign direct investment, which was just 11,759 crores or 2.62 billion US dollars from 2005-2011, has accelerated to 5.3 billion from April 2012 to December 2015. In fact, the sector received a total of 4 billion dollars in 2013-14 alone. Exports worth Rs.36,172 for processed foods and Rs.33,442 crores of marine products coming to a total of 69,614 crores out of a total of Rs.1,31,000 crores of agricultural exports constituted 53% of all exports.

The growth of food processing and increasing exports from this segment of value chain has been increasing its interactions with other segments like farmers for sourcing of raw materials either directly through contract farming or through wholesalers and other means. Large number of studies found higher incomes and inclusiveness with contract farming in the country (Dev and Rao, 2005; Rao et al., 2017). Few studies however, show small farmers are excluded. On the question of state intermediation in contract farming between agri-business firms and farming community, a study in Punjab found state mediation in contract farming might help only powerful large farmers, while direct links between agribusiness firms and farmers help in the contract farming to be more inclusive and positive outcomes. In a study on fishery

value chains in Kerala in a value chain framework, it was found that concentration and consolidation are taking place at the processing node of the chain, wherein the number of exporters has come down and professional players are upgrading their positions in the value chains. The pre-processing node of the chain is getting integrated to the processing sector, causing a major transformation of the existing value chain.

Cold Chain and Value Chains: Lack of awareness on building cold chain as a way of reducing losses and improving efficiency and farmer profitability has been costing the farming community for a long time in the country. Efforts over the last two decades centred around building up huge cold storages to the relative exclusive of other players in the cold chain. Now, it is realised that bulk and hub storage requirements reached nearly 90% and necessity to focus on pre-cooling pack houses, refrigerated vans, and ripening chambers, as shown in Table 3 (NCCD, 2015). The increasing availability of modern cold storages has led to important changes in potato value chains, with significant implications for smallholders. All potato farmers, small and large, participate in cold storage and the availability of cold storages is associated with improved efficiency in value chains because of lower wastages even as a number of these storages become involved in input, output and especially credit markets.

Way Forward: Food processing is the sector with the largest share of employment in the organised segment and third largest in the unorganised segment even with a very low value added in comparison with manufacturing as a whole. The productivity of these sectors needs improvement though studies show that there has been improvement after 2000s (Bathla, 2018). There is a need to infuse more technology in both the organised and unorganised segments with liberal provision of credit. Value of land poses the biggest threat to unorganised manufacturing in general and food processing in particular, and needs attention of the policy makers. Some of the tax slabs in GST also can have negative impact on this sector. The recent spurt in the inflow of foreign direct investment is encouraging and augurs well for the sector. Recent initiatives like mega food parks, and cold chain schemes are well conceived and showing signs of positive impact. The government needs to move fast to leverage the advantages of this segment for employment, growth of value added and exports by taking appropriate measures on the issues highlighted.

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