Potential in Food Processing Industry

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The importance of the food processing industry cannot be overstated as it is the link industry between agriculture and manufacturing. The Food Processing sector holds the potential to infact empower women by creating avenues for entrepreneurship and employment. The impact of the food processing sector on the economy is wide ranging. The sector can contribute immensely to the empowerment of farmers, especially females, by providing improved bargaining power to them, leading to reduction in distress sales and ensuring steady supply to the processors.

In talking of inclusive rural growth, the potential for the food processing industry to drive growth and employment is immense. At present, the sector constituted as much as 8.98 percent and 11.11 percent of GVA in the manufacturing and agriculture sectors respectively. It employs the largest number of persons, not just in the formal sector, where it constitutes 12.38 percent of registered employees, but also in the informal sector.

The importance of the food processing industry cannot be overstated as it is the link industry between agriculture and manufacturing. Building up processing capabilities, especially basic and primary processing at the farm level can enhance incomes. There is a strong argument for increasing inclusivity of economic growth as well. It has been estimated that 70-80 percent of rural women are involved in agriculture, playing roles of cultivators, entrepreneurs, and labourers. As per the Ministry of Food Processing, women's share of employment in registered food processing industries stood at 12.6 percent of total employment, whereas the number in the unregistered industries was almost a double and stood at 24.7 percent. The Food Processing sector holds the potential to infact empower women by creating avenues for entrepreneurship and employment. However, within this sector also, differential access of women to resources is something which needs to be addressed.

Based on this evidence, it can be concluded that it is important to promote the food processing sector, not just because of its direct spillover effects, but also the indirect effects of improving India's socio-economic conditions. However, relative to its potential, India is under-performing in terms of growth in the food processing industry and exports. Policy interventions will be crucial in unlocking these bottlenecks.

Consumer demand is increasingly shifting towards processed products. Increasing consumption, with rising incomes, is seeing demand for branded products rise as well demand for healthier products. Growth of organised retail, are other drivers of consumer demand in this industry. Globally, the demand in developed markets is skewed towards value added, processed products. Exporting raw produce still requires primary processing to preserve their freshness during transport.

However, it would also be fair to say that while significant strides have been made, there is a sense that India is performing below its latent potential of becoming a food export hub in the post-pandemic era. Despite being the second largest producer of cereals, fruits and vegetables

and fish and in fact the largest producer of milk, however, when it comes to processing this produce, India processes less than 10 percent of its total output. The number is lower at 2 percent in the case of fruits and vegetables, and 6 percent poultry. The numbers are higher in meat products (21 percent) and marine products (23 percent). However, at this stage it is important to make a distinction between primary and secondary processing. Whilst India's primary processing capabilities are well-developed (eg: turning wheat to flour), the secondary processing market, where higher value addition takes place (eg: tomatoes to ketchup) lacks scale and penetration.

Exports also remain below potential. Despite India being one of the largest producers of agricultural commodities in the world, agricultural exports as a share of total exports are low in India (10 percent of India's total exports globally top 5 exporting nations account for 34 percent share in export of food products). India is 14th largest exporter in the world with only 2 percent share in global export of food products. At present, India's agricultural exports predominantly consist of raw materials, which are then processed in other countries, again indicating the space to move up the value chain. India's processed food products exports have remained low and continue to be dominated by low value-added products. Furthermore, the industry experts feel that the Indian products are non- competitive in terms of price and quality in the export market.

Interventions are required across the value chain to tap this latent performance. At the farm level, due to lack of awareness among the producers, the output lacks quality and safety standards. There is also a lack of processable varieties which is another bottleneck. Aggregation centers close to the farmgate are also lacking. Procurement and aggregation of produce at a large scale was disincentivised by prevalent agriculture marketing regulations, as numerous government committees and reports had noted. Private investments were lacking. As a result, huge gaps exist in the cold chain. While India has developed many cold storages, there is a lack of intermediate infrastructure. Huge gaps exist in the number of packhouses, where produce is graded and sorted, critical for quality control. Gaps exist in the availability of refrigerated vehicles to transport perishable produce. Combined with inefficient and ineffective post-harvest management at the farmgate level, the annual loss of produce has been estimated to be in excess of Rs. 90,000 crores.

Recognising the importance of the food-processing industry, several initiatives have been undertaken to boost growth and employment. First, the agriculture reforms announced in 2020 have the potential to unlock bottlenecks in procurement by processors and exporters. Direct selling by farmers and contract farming can help create more backward linkages between the food-processing and exports sector. These steps taken to liberalise agriculture markets must be seen in conjuction with a host of other steps, indicating a holistic approach towards development of the agriculture and food processing sector.

Dedicated funds have been launched to develop infrastructure at all levels. The Agriculture Infrastructure Fund (AIF), with a corpus of Rs. 1 lakh crore, aims at developing infrastructure at the farmgate level and aggregation points, boosting pre-processing and primary processing capabilities. In the Budget Speech, the AIF was extended to APMC market yards as well, boosting infrastructure in the mandi system as well. Similarly, a dedicated Animal Husbandry Development Fund and the Pradhan Mantri Matsya Sampada Yojana have been launched as part of the AatmaNirbhar Bharat Abhiyaan. Another important intervention is the formation of 10,000 Farmer producer organisations (FPOs). FPOs offer the benefits of aggregating farmers, with a modern corporate structure, allowing the spirit of cooperatives, that

drove India's White Revolution to be maintained with more transparency and accountability. Aggregating farmers in through FPOs enhances their bargaining power, both in terms of purchasing inputs and also selling their produce. Small and marginal farmers, who often lack bargaining power at both the inputs and outputs side, can be empowered through FPOs. It is pertinent to note that 85 percent of India's farmers are either small or marginal, so the benefits are likely to acrrue at the bottom of the pyramid, as intended.

In terms of developing large scale capabilities, the Pradhan Mantri Kisan Sampada Yojana was launched a few years back. In 2020 alone, 46 food processing projects were operationalised. With an outlay of Rs. 10,000 crores, the PM – Formalisation of Micro Food Enterprises (PM-FME) scheme was launched. The One District One Product (ODOP) is being effectively leveraged as well. The Operation Green was extended from tomatoes, onions, and potatoes to 22 perishable commodities. In terms of foreign investment, 100 percent FDI is allowed under automatic route in food processing industries, 100 percent FDI in manufacture of food products and for trading (including e-commerce). Cumulatively $10 Bn worth of FDI equity inflows have come to the food processing industry between April 2000 and December 2020. FDIs can bring in the much-required tech infusion across the value chain which can help reduce wastage, maintain quality, and enhance shelf life of food products. Fiscal incentives to domestic industry include income tax exemptions and capital investment support.

Sustainability is another factor and that must be given equal importance to production. Depleting soil health and water tables have the potential to impact production and hence food security going ahead. Interventions are required to shift towards more sustainable forms of production, such as substituting flood irrigation with micro-irrigation, promoting balanced use of fertilisers and judicious use of pesticides. Since the Green Revolution, India has ensured food security. The technologies being promoted since then have led to increasing land productivity. High yielding varieties of seeds, expansion of irrigation, use of fertilisers and pesticides were encouraged to boost productivity and production. The outcome was food security for a previously food scarce nation. However, over time it has emerged that other outcomes have not been as favourable for the nation. Agriculture incomes have grown at a slower pace than non-agriculture incomes, widening the income gap. With 85 percent of India's farmers falling into the small and marginal category, the ideas of the Green Revolution were best applicable to larger farms than smaller ones, as mechanisation became a viable prospect.

There is also mounting evidence of environmental damage being caused by prevalent agriculture practices. Inefficiency in water use has led to water stress in several parts of India. As per the Central Ground Water Board's (CGWB) assessment in 2017, nearly 90 percent of all groundwater extracted annually went towards agriculture. Overall, as a percent of annual extractable groundwater resources, India was extracting 63.3 percent. The situation in individual states is more alarming. Punjab was extracting 166 percent of their annual extractable resources, leading to depleting water tables. Haryana at 137 percent is in a similar situation. Imbalance in fertiliser use is another area that is leading to environmental damage. Consumption is skewed towards nitrogenous (N) fertilisers over P & K. The fertiliser response ratio has fallen by over 3 ½ times since the 1970s, necessitating a further expansion of fertiliser use. This also leads to rising input costs for farmers. The policy paradigm in agriculture since the Green Revolution has ensured our food security, but not nutritional security. 39 percent of Indians remain undernourished. Diversification of farm produce and investments in the cold chain are critical. As per research from the Tata-Cornell Institute, there are two key pathways through which agriculture impacts; nutrition. The first pathway is through which increase in household incomes lead to better nutritional outcomes, through access to more diverse diets, better healthcare, better education etc. The second pathway is through which increase in incomes unlock access to a more diverse diets, which is directly correlated to higher nutritional outcomes.

The changing demands of a growing population necessitate an increase in productivity and diversification of farm produce. The effects of climate change are going to be substantial as well. The Intergovernmental Panel on Climate Change (IPCC, 2014) has predicted significant reduction in crop yields, to the tune of 10 to 25

percent by 2050. If adaptation and mitigation strategies are not adopted, our hard-won gains in food security and poverty stand to be reversed. So, India needs to increase productivity, but the current policy paradigm would only accelerate the impact of climate change. Hence, in the current system, productivity often comes at the expense of sustainability and environmental impact. At the same time, there are models which can help increase productivity, sustainability and enhance farmer incomes, rooted in the principles of agroecology which can be identified, documented, and scaled up.

Tech based innovative solutions go a long way in ensuring the progress of any sector. It is a well-known fact that the agriculture and food sector is facing multiple challenges, digitisation might as well be a part of the solution. In India, there exists a vibrant Agri-Tech ecosystem. There are start-ups providing solutions across the entire value chain - from Crop Advisory to Farming as a Service (FaaS) and from Agri-logistics to Financial services. The sector can experience tremendous growth in the coming few years if tech driven solutions are embraced as they highly optimise and individualise the management of resources. In scaling these solutions, partnerships with corporate and the government will play an extremely critical role.

To ensure robust development of the sector, the demand side requires a sharp focus. But with lifestyle becoming fast-paced, a change in consumption behaviour can be seen wherein more and more consumers are shifting to processed food options. Consumers are increasingly demanding healthier options and traceability in their produce; therefore, the product development can be made consumer centric by taking the same into consideration.

Right now, the food processing industry is largely domestic oriented, with exports accounting for only 12 percent of its total output. There is a huge potential abroad which still needs to be tapped. For this, the production needs to be made export oriented. This would require adherence to global quality standards. While there are many globally accepted quality standards such as Codex Alimentarius standards, many developed countries have relatively stringent health standards than the internationally accepted ones to protect their nations against possible health hazards from imports from developing countries. Another aspect of it is to ensure traceability. Improving traceability in food processing not only helps in ensuring food safety, but also optimises business performance. The production techniques for traditional foods can be standardised to ensure uniformity and minimum wastage during the process and can go a long way in the generation of demand.

Lack of consumer awareness is one of the major bottlenecks faced by the industry. While some of the food items like Kale, Oats etc. are widely regarded as nutrient dense foods, their alternatives are known only by a few. In this regard, Indian 'Super Foods' can be promoted as alternatives to the prominent healthy food products. For instance, Amaranth can be promoted against Quinoa, Buckwheat against Oats and Beet Greens against Kale. This would drive their demand and provide much desired impetus to the development of necessary infrastructure to augment the industry. Private investment will have to play an important role in linking rural India to large domestic and international markets.

The impact of the food processing sector on the economy is wide ranging. The sector can contribute immensely to the empowerment of farmers, especially females, by providing improved bargaining power to them, leading to reduction in distress sales and ensuring steady supply to the processors. It provides farmers the access to formal lending, apart from support from various government schemes. It also enables them to capture value through on-farm pre-processing and processing activities, resulting in reduced wastage. With the growth of the sector, off-farm employment will be generated right across the value chain, providing a lucrative avenue for employment generation in the country. As high export potential will be tapped, the domestic industry will also see growth, leading to an overall economic growth. Yet, at the same time in pursuit of increased production and productivity, sustainability will have to play an equally important role to ensure our food and nutritional security going ahead.

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