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Food Processing Industry & Development in India

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Introduction:

One of the most important challenges facing the country is providing remunerative prices to farmers for their produce without incurring the additional burden of subsidies. This challenge could be addressed if cereals, fruits, vegetables, milkfish, meat and poultry etc. are processed for consumption in the domestic and international markets. The impact of increased economic growth in agribusiness through food processing can play a significant role in reducing rural poverty and increasing rural income. Further, food processing leads to significant employment generation- not only directly but across the supply chain in production of raw materials, storage of produce and finished products and distribution of food products to consumers. For eg. a grant of INR 66.7 million (total investment of approximately INR 250 to 300 million) to 35 units in UP in 2003-04 has resulted in direct employment of 2,500 and indirect employment of 20,000.

Food processing has an important role to play in linking Indian agriculture to consumers in the domestic and international markets. The agriculture sector in India contributes a fourth of the country's GDP and provides employment to approximately two thirds of the population. However, its potential has not been tapped due to underdevelopment of the food processing sector in India.

The Big Opportunity for India:

India, with the second largest arable land in the world, and with diverse agro-climatic zones across the country, has tremendous production advantages in agriculture, with the potential to cultivate a vast range of agricultural products. For example India produces 41% of world's mangoes, 30% of cauliflowers, 28% of tea, 23% of bananas, 24% of cashewnuts, 36% of green peas and 10% of onions. This strong base in agriculture provides a large and varied raw material base for food processing. These advantages if leveraged optimally, can translate into India becoming a leading food supplier to the world.

India with a population of 1.08 billion, growing at about 1.6 % per annum, is a large and growing market for food products. Food is the single largest component of private consumption expenditure, accounting for as much as 53% of the total. Further, the upward mobility of income classes and increasing need for convenience and hygiene will drive demand for (a) perishables and non food staples and (b) processed foods.

However, the agri & food sector faces several challenges which hamper realization of potential. A long and fragmented supply chain is the single largest bottleneck facing the sector. This together with demand-related issues as well as regulatory distortions have cumulatively resulted in several inefficiencies. Comprehensive supply chain solutions are key to achieving sustainable development of the Food Processing sector in India. In order to improve the funding from the institutional set-up to agriculture and food processing, the following policy changes are required.

Redefine Role of Regional Rural Banks (RRBs):

The RRB Act needs to be amended to permit RRBs to close branches and allow merger/amalgamation of RRBs among any other diseased plants should not be handled during the planting operation but be disposed of as soon as possible by burning. Some viruses are passed from one plant to another by sap transfer during handling and attention should be given to this point. The newly planted seedlings should either be watered in or irrigated immediately after planting. When planting large areas the newly planted blocks should be irrigated before they start to dry out, especially under drying conditions.

Nutrition of the Hot Pepper Crop:

The basis of pepper plant nutrition is to maintain plants with a balanced growth between those which do not flower or form fruit before the plant has reached sufficient size and plants which remain in a vegetative state by being slower to come into flower than the variety's character.

The main fertilizers applied to the growing crop are nitrogen, phosphorus and potassium. There may also be occasions when another nutrient is required, due to a deficiency of an essential nutrient. However, advice from an extension officer should be sought before attempting to remedy a suspected nutrient deficiency. In fact advice should sought from extension or advisory officers whenever in doubt about any aspect of crop nutrition; in this way a better understanding will be gained by the farmer.

Eliminating the Effect of Food Production on the Climate:

Agriculture accounts for between 10-12% of total human greenhouse gas emissions, with 60% of methane (CH) emissions, and 50% of all human nitrous oxide (N_2O) emissions. While food

production's share of greenhouse gasses is small overall, its share of both nitrous oxide and methane is large. These gasses have a far higher effect than carbon dioxide which is by far the most prevalent gas. Methane is about 21 times more effective at trapping heat than CO_2 (EPA, 2007), and nitrous oxide is far more than that, being 310 times more effective than CO, (EPA, 2006). From this, we can see that the effect of food production, while by no means the single source of Global Warming Potential (GWP), has a major effect.

Conclusion:

- In capital intensive projects, the interest can be capitalized and funded, so that the burden of high cost of interest is not faced by the company in the formative years.
- The agencies could structure schemes in the form of capital subsidies, which in turn could be leveraged by the companies to access bank finance. Release of funds should be proportionate to the equity brought in by the promoters.
- In sectors, which are working capital intensive, the funding institutions should consider offering soft loans instead of grants. The soft loan would ensure that the companies undertake operations to service the interest payable to the institution.
- Market analysis prior to providing funding-Detailed market analysis of demand-supply trends, costs, competitive position should be undertaken by the funding institution/by a neutral third party which has the required industry expertise, to ascertain the financial viability of the project.

In order to address the issues related to food parks, the recommendations are as follows:

- It is recommended that food parks be located in proximity to raw material sources to maximize the potential available locally. This will ensure better utilization of common facilities.
- The quantum of financial assistance to a food park needs to be decided on a case-specific basis, depending on the infrastructure requirements across locations. The financial appraisal of any food park scheme should be evaluated on the basis of potential for tie-ups with off takers and sufficient availability of raw materials.
- The definition of common facilities could be expanded to include roads, drainage and solid waste management facilities etc.
- It is critical to have a monitoring mechanism to facilitate and review progress of implementation. The State Departments for food

processing can play an active role in this process.

Most studies in food microbiology are concerned with the rapid growth of populations, but in many ecosystems, the survival characteristics of the population also need to be considered. The longevity of bacterial spores and their resistance to harsh conditions are well documented. However, the ability of vegetative cells to resist stressful conditions is increasingly recognized as an important ecologic trait. Attention also needs to be given to relatively slow-growing populations in various situations, e.g., when the shelf life of a product is extended by control of rapidly growing spoilage organisms. The behavior of foodborne microorganisms, be it the growth or death of microbial populations, is based on the time of exposure to environmental factors affecting population development; for example, equivalent kills of bacteria in milk are achieved by low temperature-long time pasteurization (60°C/30 min) and high temperature-short time pasteurization (72°C/15 sec).

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