15. AGRICULTURAL INPUTS AND AGRO-PROCESSING

Agro- inputs are either biological or chemical or inorganic compounds used in the production of agricultural and allied products. Some of the agro-inputs used in India is

1. In-organic fertilizers
2. Pesticides which includes insecticide, fungicide, nematicide and herbicide
3. Seeds which includes varieties, hybrids and genetically modified plant materials
4. Vegetatively propagated planting materials
5. Bio-fertilizers
6. Organic inputs which includes compost, vermi-compost, enriched farm yard manure, oil meals, farm yard manure
7. Bio-pesticides
8. Bio-control agents
9. Plant Growth regulators
10. Micro-nutrients
11. Farm machinery and agricultural tools and implements
12. Animal feeds
13. Poultry feed

The production and distribution of above mentioned agricultural inputs creates agri-business opportunities. The agricultural input production inputs and distribution firms may be big companies like Madras Fertilizers, SPIC, FACT, EID Parry Monsanto, Syngenta or MAHYCO and the like. They may also be small business firms like vermi-composting, coir pith decomposing.

The agro and food processing industry in India is utmost significance in terms of employment and income generation, poverty alleviation, export promotion and foreign exchange earnings. The growth of the processed food sector is expected to make a quantum jump of Rs.1,75,000 crores by 2005. Although India is one of the largest producers of raw materials for the food processing industries in the world, the industry itself is underdeveloped in India. Less than 2 per cent of fruits and vegetable production is processed, compared to 30 per cent in Thailand, 70 per cent in Brazil, 78 per cent in Philippines and 80 per cent in Malaysia. The value addition in food sector is as low as 7 per cent. There is need for increasing food processing from 2 to 10 per cent by 2010. This will require an investment of Rs. 1,40,000 crores in the food processing sector. The investment will generate direct employment for 77 lakh persons and indirect employment for three crore people. This will reduce wastage by Rs.80,000 crores. Apart from these advantages, the value addition of food product will go up from 7 to 35 per cent which will be reflected in the corresponding increase in Gross National Product (GNP).

Types food processing industries

Primary processing industries
Rice milling
Roller Flour milling
Pulse milling
Oil milling
Cereal based products (bread biscuits)
Cocoa Products
Soft drinks
Alcoholic drinks
Horticulture
Fruits and vegetables
Milk and milk products
Meat processing
Poultry processing
Fish processing
Food packaging

A strategic Assessment of Food, Beverage and Agribusiness Opportunities in India are furnished in Table 15.1.

Table. 15.1 Processed Food markets

Product	**Volume (metric tones)**	**Value (US $ million)**	**Major players**
Basic foods			
Packaged wheat flour(including branded flour)	1 million	8	Hindustan Lever Limited(HLL), Pillsbury, Best foods India Ltd.,
Spices	2.45 million	3780	Regional
Edible oil	8 million	8820	ITC agrotech, Marico Industries, HLL, NDDB, Ahmed Oil Mills Ltd
Salt	500,000	60	Gujarat Salt Federation, Hindustan Salt Works, Tata Chemicals, Bestfoods India Ltd.,
Sugar	15 million	7,150	Government, co-operatives
Eggs	33 billion eggs	780	Government Poultry Corporations, National Egg Co-ordination Committee
Poultry meat	550,000	n.a.	Govt. Poultry Corporations

Milk (total)	73.5 million		NDDB
Bakery products(including unorganized sector)			
Biscuits and cakes	1 million (biscuits) 500,000(cakes)	775	Britannia Industries Ltd.,, Parle Products, Bakeman's
Bread	1.5 million	350	Britannia India Ltd.,Modern Industries (now with HLL), Spencer's
Indian Dairy products			
Ghee (Butter oil) (organized sector only)	85,000	n.a.	
Indian Milk sweets(including unorganized sector)	300,000	350	Small players
Western dairy foods (organized sector)			
Ice cream	50 million liters	120	HLL, Gujarat Co-operative Milk Marketing Federation, Hutsun Agro
Butter	80,000	200	Gujarat Co-operative Milk Marketing Federation, Britannia Industries Ltd.,
Cheese	12,000	30	Gujarat Co-operative Milk Marketing

Dairy whitener	48,000	85	Federation, Britannia Industries Ltd., Nestle India Ltd., Gujarat Co-operative Milk Marketing Federation
Product	**Volume (metric tones)**	**Value (US $ million)**	**Major players**
Western dairy foods (organized sector) contd..	100,000	100	Gujarat Co-operative Milk Marketing Federation, Nestle India Ltd.,
Malted food drinks	65,000	140	Cadbury India Ltd., Smithkline Beecham Consumer products, Nestle India Ltd.,
Processed fruit and vegetable products			
Pickles	120,000	28	Nestle India Ltd., American Dry Fruits, Ruchi, Bedeker's, Priya
Fruit Beverages	130,000	80	HLL, Parle Products, Enkaye,Texofoods
Fruit spreads, sauces & ketchup	50,000	43	HLL,Marico Industries
Convenience foods (organized sector)			
Chocolate	20,000	95	Cadbury India ltd., Nestle India Ltd.,

Sugar-boiled confectionery	80,000	280	Parry's Confectionery, Nestle India Ltd.
Chewing /Bubble gum	25,000	55	Warner Lambert, Wrigley's Perfetti
Snack foods			
Traditional Indian snacks (incl. small players)	310,000	295	Haldiram's. Pepsi Foods
Western snacks (including branded potato chips = 5,000 metric tones)	40,000	30	Frito-Lay India, Uncle Chipps, Procter & Gamble

Source: Promar International, 2001.Indian Food Industry,20(4), 29.

Changes in food processing

Government is at the forefront of forces for changes in the food processing industry and is also the least predictable of the forces. Other forces for change include the productivity of agriculture, the emergence of an organized food retail sector, improving infrastructure and the changing Indian food consumer (Fig.15.1)

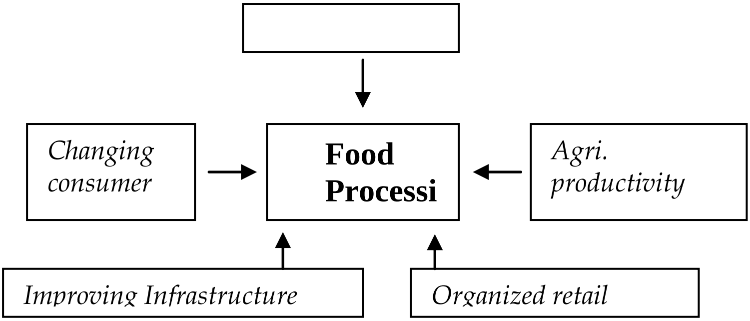


Fig. 15.1 Forces for change in Indian Food Processing Industry

The changing food consumer in India will be one of the most powerful forces for change in the food industry. Increasing incomes, literacy rates, small family sizes, women entering the work force, urbanization and increasing concern about health and hygiene will be motivating consumer changes in attitudes. Fig.15.2 depicts the markets for basic foods and processed food today and in the future, taking into account changing consumer attitudes. The triangles are not meant to be drawn to scale but illustrate an order of magnitude. These graphics also represent the markets for those Indians in the middle and upper income groups. Despite these changes, some consumer traits have not changed. For instance, the Indian consumer is still very price sensitive. Most Indians simply do not have enough money to lose this trait. Most Indians tend to save rather than spend money.

Priorities

The opportunities in food markets depend on market growth, market size, government influences and infrastructure bottlenecks (Table 15.2).

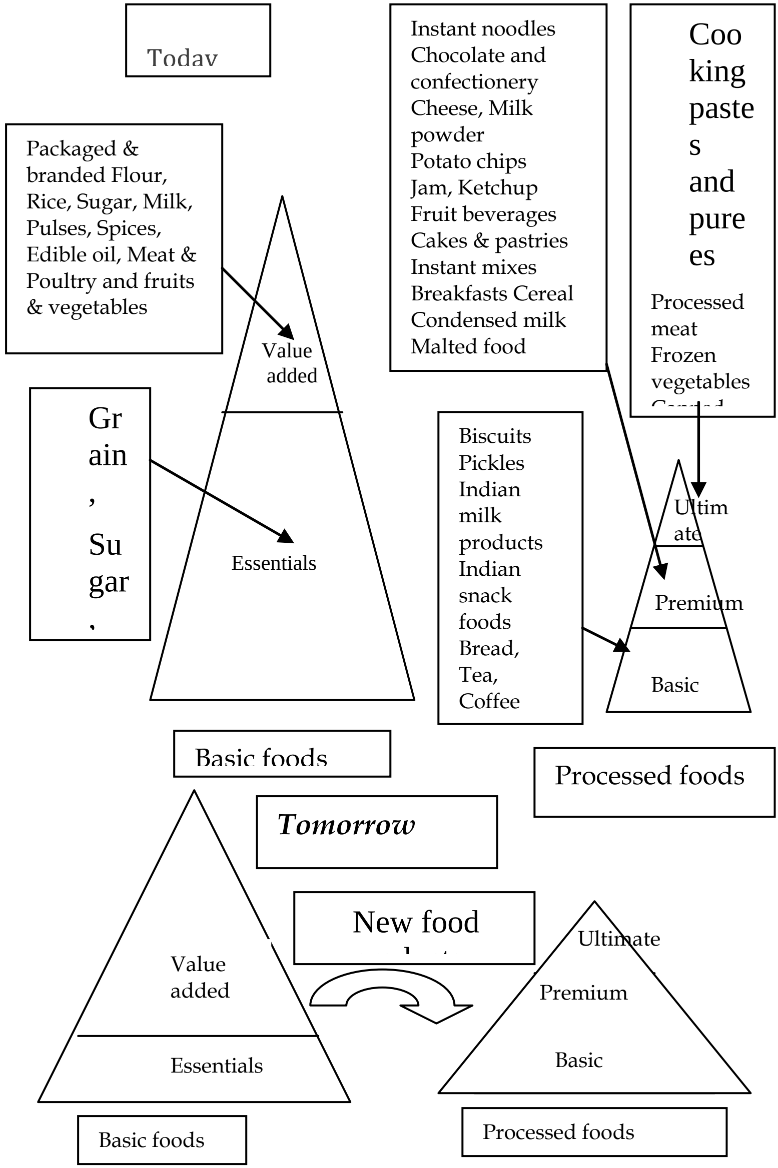
Food distribution in India

The flow chart (Fig15.3) depicts the distribution system in India. As the chart shows there are several middlemen/intermediaries / agents who come between the farmer and the consumer or food manufacturing company. Distribution of food products is also fragmented given the fact that food retailing in India is highly unorganized by small neighbourhood retailers and vendors. They are estimated to be over five million such small retail outlets in rural and urban India. These small retail outlets accounts for nearly 95 % of the total retail turn over in the country, and their number continue to grow despite a worldwide trend toward retail consolidation.

Large food markets or supermarkets are an emerging retail format, but only in metropolitan cities. According to USDA estimates there are between 50 and 100 privately owned supermarkets and about 350 convenience stores in all over India, and these stores only account for 1-2 % of food retail sales in urban areas of India.

Table 15.2. Priorities Basic food & Branded processed food

Product	**Market growth**	**Market size**	**Infrastructure bottlenecks**	**Govern - ment influences**
Basic food				
Wheat flour	High	Medium	Some	Some
Poultry	High	Large	Many	Some
Milk	High	Large	Some/ Many	Many
Fresh fruits & Vegetables	High	Large	Many	Some/ Many
Edible oils	Medium	Medium/ Large	Some	Some/ Many
Branded processed food				
Bakery products	High	Large	Some/Few	Some
Indian dairy products	High	Large	Many / some	Many
Indian snacks	High	Large	Some	Some
Processed fruits & vegetables	Medium	Small/ Medium	Many	Some
Convenience foods	Medium / High	Small/ Medium	Some/Few	Some
Western dairy products	High	Medium	Many/some	Many


Today
Packaged & branded Flour, Rice, Sugar, Milk, Pulses, Spices, Edible oil, Meat & Poultry and fruits & vegetables
Grain, Sugar,
Value added
Essentials
Basic foods
Instant noodles
Chocolate and confectionery
Cheese, Milk powder
Potato chips
Jam, Ketchup
Fruit beverages
Cakes & pastries
Instant mixes
Breakfasts Cereal
Condensed milk
Malted food
Cooking pastes and purees
Processed meat
Frozen vegetables
Biscuits
Pickles
Indian milk products
Indian snack foods
Bread,
Tea,
Coffee
Ultimate
Premium
Basic
Processed foods
Tomorrow
New food
Value added
Essentials
Basic foods
Ultimate
Premium
Basic
Processed foods

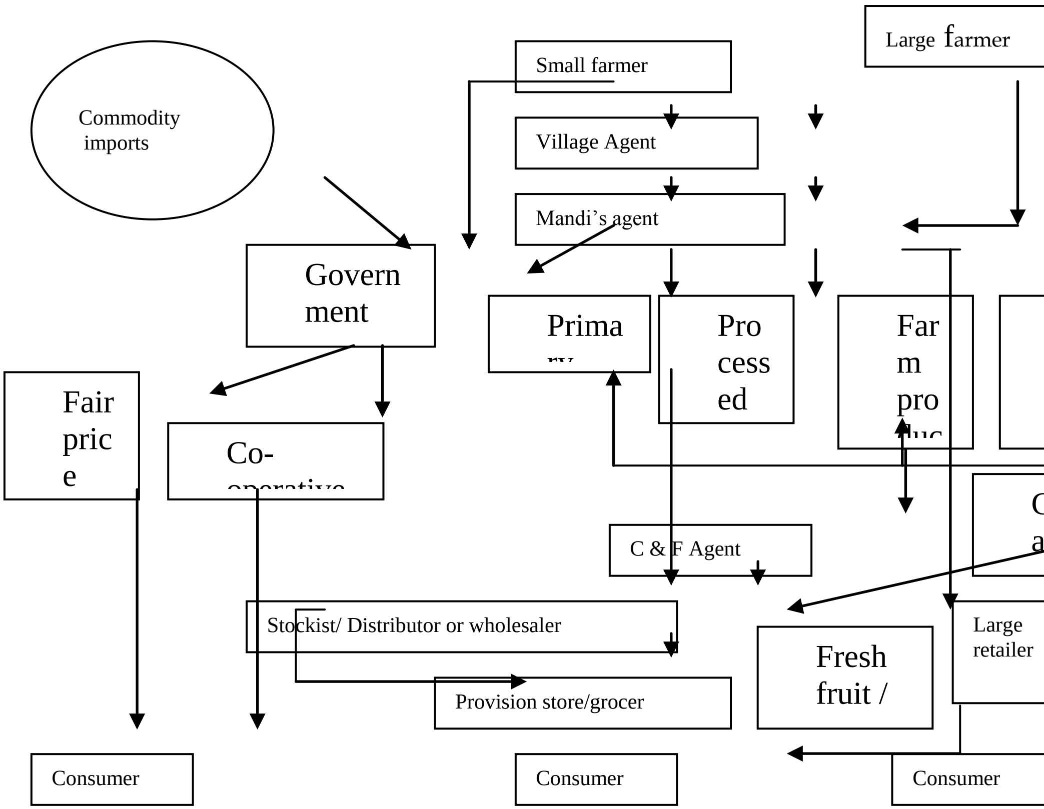


Fig.15.3 Indian Food Chain