

# “CHALLENGES AND OPPORTUNITIES OF FRUITS AND VEGETABLES PROCESSING INDUSTRY IN INDIA”

Prof. Nandini Francis

KLE'S College of Business Administration, Lingaraj College, Belgaum  
Contact : 9945009807 E-mail : nandinif Francis@gmail.com

Dr. S. G. Chiniwar

Professor, KLS's Institute of Management Education and Research, Belgaum

## ABSTRACT

The food processing industry is one of the 25 sectors identified to advance the 'Make in India' campaign. India's agricultural base is quite strong but wastage is very high and processing of food products is very low. Food processing is the methods and techniques used to transform raw ingredients into food or food into other forms for consumption based on local raw material and indigenous knowledge and skill of the people. The country's processing sector is small and processing of food to consumable standards in India has reached only 10% recently and with the help of Make in India campaign the food processing sector will aim to raise their growth level from 10% to 25%. India's share in exports of processed food in World trade has remained at about 1.5 percent or \$3.2 billion. One of the important sub-sectors of food processing is fruits and vegetable processing. The study examines the challenges and opportunities of Fruits and vegetables processing industry which has many promising dynamics which supports the potential for growth of this industry. The study is based on secondary data analysis. It revealed that availability of raw materials, infrastructure, government schemes and policies are the prime influencing factors for the establishment of sector and lack of finance, shortage of power, inadequate post harvest technology and facility, poor infrastructure facilities constitute very serious problems so there is an urgent need to provide facilities for development. This paper is tried to analyze the challenges and opportunities of fruits and vegetables processing industry, with certain specific objectives like the study of influencing factors on the growth of fruits and vegetables processing sector and identification of problems with remedial measures. Proper training should be given in some areas with perfect involvement of entrepreneur and resource persons at adequate place and objectives. Moreover awareness raising activities should be undertaken. The time has come for the industry to mature and become global player of processed food industry and must take full benefits and advantage of Make in India campaign to grow.

(Keywords: Food processing, fruits and vegetables processing Industry, Commodities, market Potential, Infrastructure, Schemes and Policies, Post harvest technology.)

## INTRODUCTION:

The "Make in India" concept will definitely boost the food processing industry of India, as the industry is one of the most upcoming sectors in India and needs vital and genuine push to be the leader in the global stature. India's food processing sector covers fruit and vegetables; spices; meat and poultry; milk and milk products, alcoholic beverages, fisheries, plantation, grain processing and other consumer product groups like confectionery, chocolates and cocoa products, soya-based products, mineral water, high protein foods etc. Since liberalization in Aug'91 proposals for projects of have been proposed in various segments of the food and agro-processing industry. Besides this, Govt. has also approved proposals for joint ventures; foreign collaboration, industrial licenses and 100% export oriented units envisaging an investment. Out of this, foreign investment is over Rs.10, 000 crores.

India has been bestowed with wide range of climate and physio-geographical conditions which ensures availability of most kind of fruits and vegetables. The country is the second largest producer of the Fruits (81.285 Million tonnes) and vegetables (162.19 Million tonnes) in the world, contributing 12.6% and 14.0% of the total world production of fruits and vegetables respectively. The major challenges in this processed food industry is insufficient infrastructure which leads to wastage and undue advantage to middlemen at the cost of farmers' remuneration. Under the 'Make in India' scheme, the government focus is on compressing supply chains and to make them consistent, quicker and efficient for supply of farm produce for food processing.

The main advantage in food processing industry is India has a vast pool of trained and skilled people as well as an unbeatable cost arbitrage opportunity. Therefore, big food processing companies have set up offshore factories in India. MNCs and global financial institutions have also set up their back-office hubs in the country due to lower costs and easy availability of skilled labour and raw material. Make in India is a major new national program that is designed to facilitate investment, foster innovation, enhance skill development, protect intellectual property and build best-in-class manufacturing infrastructure. The campaign is expected to boost the manufacturing segment as it is aimed at making India a global manufacturing hub. The Indian Food processing industry should benefit and take full advantage of this campaign to grow. The sector has already been getting a lot of attention in the last few years. The time has to showcase processed food industry as a global player.

## LITERATURE REVIEW :

M. Fehr and D.C. Romao conducted study on modeling the success of fruit and vegetable marketing. This study develops a scoring guide that can assist commercial establishments and households in evaluating and mitigating the loss potential for fruit and vegetables within their operations. The scoring model separately addresses losses related to products and losses related to establishments. G.C. Kar and S.N. Mishra has stressed in his book "Agro industries & economic development" that setting industries which make use the produces of agriculture directly or indirectly are considered more desirable in the context of the economic development of the country. Such a development has a two way effect i.e. Agriculture helps agro-related industries to make use of the raw materials directly supplied by this sector and it facilitates the growth of those types of industries which produce several inputs like fertilizer, pesticides and agricultural implements that help to promote the productivity and expansion of agriculture. Shewfelt and Henderson (2003) state that seven issues are considered critical to succeeding in today's fresh produce business. They are: Centralization of purchasing of perishables by different supermarket chains; Prevention of accidental contamination with food-borne pathogens (food safety); Biosecurity of crops throughout the distribution chain; Antioxidant properties and other health benefits of fresh items; Growing problems with obesity; Market research to determine consumers wants and needs Increasing dominance of one (or at least an increasingly small number of) supermarket company(s) worldwide. Surendra P. Singh, Fisseha Tegegne and Enefiok Ekenem (March 2012) discuss in there article on "The Food Processing Industry in India: Challenges and Opportunities" that the Major constraints for the growth of the Indian food processing industry include the absence of adequate infrastructure, particularly rural road connectivity, inadequacy of information and marketing linkages, lack of electricity supply, and the absence of cold chain systems and these challenges must be addressed properly to achieve full potential of the Indian food processing industry. G.R. Jayadevan (2012) discussed in his article on "Ethics and Marketing of Processed

Foods in India” that the marketers, being the responsible citizens should be concerned more about ethics instead of focus on their company's profit alone. It is not only in the hands of food companies or the Government or the interested groups at large to create a healthy society but a more patronage and sustaining effort is required from the consumers themselves to make the world a better place to lead a meaningful life. Sandeep Sachdeva, Tilak R Sachdev, Ruchi Sachdeva (June 2014) discussed in his Article on Increasing Fruit and Vegetable Consumption: Challenges and Opportunities that the greatest challenge across the globe is to translate knowledge into sustained behavioral action, with no single solution in sight for enhancing consumption pattern and ensuring every opportunity for communicating and eating seasonal Fruits and Vegetables in Day today life. Ministry of Food Processing Industry (MFPI) report (2014), Government of India says that without a strong and dependable cold chain, a vital sector like F&V processing industry, which is based mostly on perishable products, cannot survive and grow. Even at currents level of production, wastage in F&V is estimated at 35%, major reasons being inadequate storage, transportation, cold chain facilities and other infrastructure support facilities. National Sample Survey Office (NSSO) survey revealed that out of 1000 household in India, vegetable consumption was reported by 983 (rural) and 932 (urban) whereas fruits by 608 (rural) and 777 (urban) residents.

**PROCESSED FRUITS AND VEGETABLES IN THE WORLD :**

The Global Fruit and Vegetables Processing industry includes all businesses that alter fresh fruit or vegetables to create a higher, valued-added food product for human consumption. Industry products include canned fruits and vegetables, fruit and vegetable juices, soups, sauces and dehydrated fruits and vegetables. The rising global health trend has increased consumer demand for higher-quality and more diverse fruit and vegetable products. The Global Fruit and Vegetables Processing industry has grown at an annualized rate of 1.3% over the five years. In 2015 industry revenue is forecasted to grow 0.4% to \$271.3 billion and expected to expand at an annualized rate of 3.0% over the five years to 2020, reaching \$315.2 billion. In the developed nations like Australia, Canada, Europe, UK and USA there is large gap between actual and recommended consumption of both fruits and Vegetables as per the IBIS world report, low and middle-income countries 77.6% of men and 78.4% of women consume fruits and vegetables and 74% Fruits and vegetables consumption in India. The majority of demand growth for industry products has come from the developing world over the past five years.

**FRUITS AND VEGETABLE PROCESSING IN INDIA :**

The fruit and vegetable processing industry in India is highly decentralized having wide capacities. The diverse agro- climatic zones make it possible to grow almost all varieties of fresh fruits and green vegetables in India. India is the second largest producer of fresh vegetables in the world (ranks next to China) and accounts for about 15% of the world’s production of vegetables. The country is the second largest producer of the Fruits (81.285 Million tonnes) and vegetables (162.19 Million tonnes) in the world, contributing 12.6% and 14.0% of the total world production of fruits and vegetables respectively. The country has exported 3, 16,059.43MT of other processed fruits and vegetables to the world for the worth of Rs. 2,569.93 crores during the year 2014-15. Major Export Destinations for (2014-15) are United States, Saudi Arabia, United Kingdom, Netherland and United Arab Emirates. The industry in India is almost equally divided between the organized and unorganized sectors, with the organized sector holding 48 per cent of the share. While products like juices and pulp concentrate are largely manufactured by the organized sector, the unorganized sector’s foothold is in the traditional areas of processed items like pickles, sauces and squashes but by size, pickles form the strongest category. The government expects the processing in this sector to grow 25 per cent by 2025. Domestic consumption of processed fruits & vegetable products is low, indicating a potential for growth through increased penetration of the domestic market

**LEADING COMPANIES IN FRUITS &VEGETABLE PROCESSING**

Company	Products
Capital Foods	Frozen Foods
Dabur India Ltd.	Jams, Pickles, Fruit Beverages
Godrej F&B	Fruit Juices, Fresh F&V (Retail)
Green Valley	Frozen Fruits and Vegetables
Hindustan Unilever Limited	Jams, Ketchups, Fruit Beverages
Mafco	Frozen fruits and vegetables
Mother Dairy (Safal)	Frozen processed F&V
MTR Foods	Pickles, chutneys (Dips)
Priya Foods	Pickles, Fruit Juices
Temptation Foods	Frozen fruits and vegetables, Purees
V.P.Bedekar & Sons Pvt.Ltd	Spices, Pickles, Fruit & Vegetables Foods, Gravy Mixes

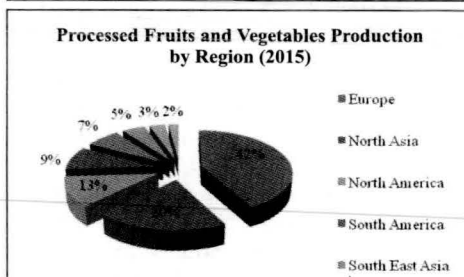
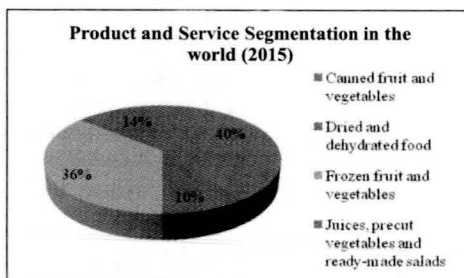
Source: Various secondary sources, media reports

**INDIAN HORTICULTURE (FRUITS AND VEGETABLES) PRODUCTION (2010-14)**

Year	Fruits		Vegetables	
	A = Area (In '000 HA)	Production (In '000 MT)	A = Area (In '000 HA)	Production (In '000 MT)
2009-10	6329	71516	7985	133738
2010-11	6383	74878	8495	146554
2011-12	6705	76424	8989	156325
2012-13	6982	81285	9205	162187
2013-14	7216	88977	9396	162897

Source : All India 2013-14 (Final Estimates), Department of Agriculture & Cooperation.

India leads the world in the production of mango (40%), banana, papaya, sapota (30%) and lime and in productivity of grapes per unit land area. In case of vegetables, potato, tomato, onion, cabbage and cauliflower account for around 60% of the total vegetable production in the country.(27) Andhra Pradesh is the largest producer of fruits in India with an estimated share of 16.9% followed by Maharashtra (15.6%), Tamil Nadu (11.1%), Gujarat (8.8%) and Karnataka (8.7%).



Source: WWW.IBISWORLD.COM (Global Fruit & Vegetables Processing March 2015)

Other important fruit producing states are Jammu and Kashmir, Uttarakhand, Uttar Pradesh, Bihar, Jharkhand, West Bengal, Kerala and Madhya Pradesh.

Consumption pattern of Fruits and Vegetables in India; Per capita consumption of fruits and vegetables in India is only around 46kg and 130g against a minimum of about 92g and 300g respectively recommended by Indian Council of Medical Research and National Institute of Nutrition, Hyderabad. With the present level of population, the annual requirement of fruits and vegetables will be of the order of 32.58million tonnes and 83million tonnes respectively.

#### **CHALLENGES: FRUITS AND VEGETABLES PROCESSING INDUSTRY IN INDIA**

The fruit and vegetable processing industry is extremely decentralized, as number of processing units are in the cottage and small scale sectors. The Requirement for large and cost-effective distribution network and costly cold chain make it difficult for companies to expand business. It is also observed that there is no continuous availability of raw materials throughout the year and due to varied agro-climatic conditions the availability of raw materials is concentrated in particular areas. Further most of the products produced are consumed afresh at market level. The Distribution channels are largely unorganised and the most crucial challenge the lack of suitable infrastructure in the shape of cold chain, packaging centers, value added centre, modernized abattoirs. There is lot of Inconvenience in marketing, transport and communication facilities are other factors which make the processing sector uncompetitive. Food industry is regarded as relatively small and less attractive because of high investment and less profit initially. The tax levels on the processed foods are very high and the financial institutions/Banks consider processing sector as high risk. Hence, this sector is capital starved. There is a gap between research and extension and many of the commercial processing units are having their own research activities in food industry which remain confined to their own vicinity.

#### **OPPORTUNITIES: FRUITS AND VEGETABLES PROCESSING INDUSTRY IN INDIA**

The main strength of Fruits and Vegetable processing industry is Round the year availability of raw materials, Social acceptability of agro-processing as important area and support from the central government, vast network of manufacturing facilities all over the country and large domestic market. Because of this Processing of fruits and vegetables in India holds tremendous potential to grow, considering the still emerging levels of processing at present. India's horticultural production base is reasonably strong; wastage of horticulture produce is sizeable. Considering the wide-ranging and large raw material base that the country offers, along with a consumer base of over one billion people, the industry holds tremendous opportunities for large investments. The Indian food –processing industry is primarily export oriented. India's geographical situation gives it the unique advantage of connectivity to Europe, the Middle East, Japan, Singapore, Thailand, Malaysia and Korea. One such example indicating India's location advantage is the value of trade in agriculture and processed food between India and Gulf region. Various products, such as tomato puree, canned fruit, frozen fruit, frozen vegetables and ginger-garlic pastes, gained popularity among Indian consumers. Frozen and canned/preserved food products are proving to be better alternatives to fresh foods due to the convenience of storage and usage they offer. Demand for fresh, chilled and processed fruits and a vegetable is also increasing in modern retail. Even some small retailers have started keeping refrigerators to stock frozen peas or corn. This trend is likely to continue over the forecast period and will help drive sales and penetration of processed fruits and vegetables in India.

#### **Policies and promotions for the Growth of food processing sector in India**

- FDI Policy: 100% FDI is allowed under automatic route in food processing industry and food infrastructure including food parks, distillation & brewing of alcohol, cold storage chain and warehousing. Five-year tax holiday for new food processing units in fruits and vegetables processing along with other benefits in the budget has bolstered the government's resolution of encouraging growth in this sector.
- No industrial license is required for setting up Fruits and Vegetable Processing industries; setting-up 100 per cent Export Oriented Units require specific Govt. approvals. Many Fruits and vegetables processing industries are eligible for automatic approval of foreign.
- Technology agreement and up to 51 per cent foreign equity participation including tomatoes, mushrooms & other frozen vegetables, fruit, nuts, fruit-peel, fruit jellies, marmalades, fruit juices & vegetables Juices etc
- This sector is regulated by the Fruit Products Order, 1955 (FPO), issued under the Essential Commodities Act All processing units are required to obtain a license under this order. Some items like: pickles & chutneys, tapioca sago and tapioca flour are reserved for exclusive manufacture in the Small scale sector Export of fruit & vegetable products is freely allowed.

Foreign Direct Investment (FDI) inflows in Food Processing sector in the country during last 6 years

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	1314.23	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	25106.78	3982.88

- Vision 2015 Action Plan: The Ministry of Food Processing Industries (MoFPI) has formulated a Vision 2015 Action Plan that includes trebling the size of the food processing industry, raising the level of processing of perishables from 6% to 20%, increasing value addition from 20% to 35%, and enhancing India's share in global food trade from 1.5% to 3%.
- Mega Food Parks: According to the website of MoFPI, the Government of India is actively promoting the concept of mega food parks (MFPs) and is expected to set up 30 such parks across the country to attract FDI. The government has released a total assistance of USD 23 million to implement the Food Parks Scheme. It has, until now, approved 50 food parks for assistance across the country. The Centre has also planned for a subsidy of USD 22 billion for mega food processing parks.
- Agri-Export Zones: The government has established 60 fully equipped agri-export zones (AEZs), in addition to food parks, to provide a boost to agricultural and food processing exports.

#### **CONCLUSION :**

The 'Make in India' campaign expected to boost the manufacturing segment as it is aimed at making India a global manufacturing hub. The Indian Food processing industry should benefit and take full advantage of this campaign to grow. The sector has already been getting a lot of attention in the last few years. India can harness all the opportunities present in fruits and vegetable processing sector only when its labor force is educated and skilled. The

government needs to strengthen its skill development program; new training institutes should be open up, which are in tune with market demand and also the major challenge is to development of infrastructure facilities like cold chain, road facilities, and power will strengthen the food processing industry. It will have a very positive sign on perishable food products industry. The food processing industry is all set to drive Indian economy to higher growth, only need is to pay due attention on technological development of field, and generation of skilled manpower

#### REFERENCES

##### Reports :

- (The Agricultural and Processed Food Products Export Development Authority (APEDA))
- Indian Horticulture Database 2013
- Indian horticulture Data Base 2014
- National Sample Survey Office (NSSO), Ministry of Statistics and Programme Implementation, New Delhi: Government of India; 2012.
- Annual Report. Ministry of Agriculture, New Delhi: Government of India; 2011.
- Report of the working group on horticulture and plantation crops: 12th five year (2012 17) plan period. Planning Commission, New Delhi: Government of India; 2011.
- FICCI (2007) A report on Processed Food and Agribusiness: Opportunities for investment in India, Mumbai, India.

##### Websites :

- [http://apeda.gov.in/apedawebsite/about\\_apeda/About\\_apeda.htm](http://apeda.gov.in/apedawebsite/about_apeda/About_apeda.htm)
- [www.Indiaagronet.com](http://www.Indiaagronet.com)
- [www.fao.org](http://www.fao.org)

##### Articles :

- Kachru RP (2006) Agro-Processing Industries in India-Growth, Status and Prospects. Indian Council of Agricultural Research. New Delhi, India
- Bhuyan, A (2010) "India's Food industry on the Path of High Growth" Indo-Asian News Service.
- Dr. Pawan Kumar Dhima and Ms. Amita Rani (2011) "Problems and prospects of small scale agro based industries: an analysis of patiala district".
- Sandeep Sachdeva, Tilak R Sachdev and Ruchi Sachdeva (2014) Increasing Fruit and Vegetable Consumption: Challenges and Opportunities".