

Indian Fruit processing Industry: Import and Export Analysis

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Abstract

India ranks second in the world (production of 45.91 mmt), next only to China (production of 72 mmt), when it comes to fruit production. India contributes 9.54% of the total fruit production of the world. In spite of the India's strong hold on the production of fruits it is alarming to know that India processes just 2% of the total fruit production with an alarming loss of around 35%. Only 20% of the production of processed fruits is being exported. India's share of global exports of fresh fruits and processed fruit products is quite meager when we compare the same with other major fruit producers of the world, i.e., China, Brazil, USA, Italy, Spain, Mexico, Iran, Philippines, Turkey and Thailand (in the same order).

The imports and exports analysis of this particular industry in India has been made using secondary data that was available. This data is then analyzed to know the per cent contribution of each fruit and each processed fruit product towards total imports and exports and CGR of the imports and exports of the same. The effort was made to know the causes for the particular pattern of imports and exports along with recommendations on policy front to elevate Indian fruit processing industry to international standards.

A coordinated, integrated and strategic effort of all the stake holders, i.e., fruit growers, fruit processors, channel members, nodal bodies (Governmental and Non Governmental), and end users is must to turnaround this industry. Fruit Processing Industry of India has to undergo a radical shift to address all the constraints and reap the enormous advantages/benefits/ profits which this sector is to offer and be the world's largest fruit processing factory. Problems / constraints have to be studied in wholesome, integrated and strategic manner rather than adopting piecemeal approach.

Keywords: *Fruit processing industry, India, Import and Export Analysis, Fruits, Processed Fruit Products*

Introduction

From the table-1 (displayed on the next page) it becomes evident that India, an emerging economy, is

predominantly a agriculture based economy where-in 18.60% of the GDP comes from agriculture sector and which employs 60% of labour force. Of the total arable land of 1703000 sq kms, 100000 sq kms is covered by

permanent crops and 22.80% of the total land area is covered by forests. India is one of those few countries that enjoy tropical and temperate climatic conditions, which is quite ideal for fruit cultivation. Almost all varieties of fruits are being grown in India. This is the reason India ranks second in the world (45.91 mmt), next only to China (72 mmt), when it comes to fruit production. India contributes 9.54% of the total fruit production of the world.

In spite of the India's strong hold on the production of fruits it is alarming to know that India processes just 2% of the total fruit production with an alarming loss of around 35%. Indian Fruit Processing Industry seems to be in its infancy stage and growing at a very slow pace. In year 1998-99 there exist over 4000 Fruit Processing units in India with an aggregate capacity of 1.2 million metric tons which was less than 4% of total fruit production. This industry is growing at around 20% every year and is dominated by large no of smaller units (cottage scale / home scale / small scale) having small capacities ranging from 20 tons to 250 tons per year. Only 20% of the production of processed fruits is being exported. India's share of exports of fresh fruits and processed fruit products is quite meager when we compare the same with other major fruit producers of the world, i.e., China, Brazil, USA, Italy, Spain, Mexico, Iran, Philippines, Turkey and Thailand.

The Indian fruit processing sector is undoubtedly a potential sector and has a tremendous scope for unparalleled growth prospectus in the coming days. The Government of India has taken a lot of initiatives and policy decisions for commercializing agriculture with specific importance on high tech horticulture and developing the fruit processing sector to its full capacity. The fruit processing sector is rapidly being transformed into a high volume profit making industry. A distinct shift is seen among the consumers for processed, prepared and packed fruit products not only in the so called developed countries but also in the developing countries like India. This has catalyzed the research work in this area leading to publishing of numerous research articles and papers. Hence there is a strong need for a detailed Import and Export analysis of fruits and processed fruit products by Indian fruit processing industry (Table-1).

Literature review

The review of literature in the field of fruit processing industry of India has revealed several contemporary issues of importance. They include issues related to growth in the production of fruits, growth with respect to processing of fruits, international trade pattern, present availability and future requirement of infrastructure, emergence of wide product range, adoption of emerging new technologies by the firms, management practices followed by both cultivators and processors, and strategies and policies pursued by all the stake holders involved for the overall growth of this industry.

NFI Archive Report (2003), reported that the fruits and vegetables that are grown only on 6-7 percent of gross cropped area have contributed more than 18.8 percent of the gross value of agricultural output and 52% export earnings out of total agricultural produce. They further opined that during the last few years considerable emphasis has been given to this sector. Accordingly, areas under fruit production has increased by 172 percent from 1961-1993, productivity per hectare was nearly doubled leading to an increase in production to the tune of 320 percent. The average labor requirement for fruit production is 860 man-days per hectare per annum as against 143 man-days for cereals crops. Crops like grapes, bananas, and pineapple generates much larger employment roughly from 1000 to 2500 man-days per hectare per annum, the researcher added.

Vinodchari (2003), reported that India is among the world's major producer of food, producing over 600 million tons of food products every year. The researcher further explained that the food processing industry ranks fifth in size in the country representing **6.3% of GDP**, accounts for **13% of the country's export and involves 6% of total industrial investment** in the country.

MOFPI (Ministry of Food Processing Industries) Report, (1999), reported that India is the largest producer of fruits (41.5 mmt) and second largest producer of vegetables (67.28 mmt) in the world. The country tops in production of banana, mango, potato, tomato, onion, green peas and coconut. **Only 2% of the fruits/vegetables**

TABLE-1**India: Key recent Economic, Agronomic, Demographic and Agriculture related indicators**

Key recent parameters	India
Total area in sq km	3287590
Total land area in sq km	2973190
Total area covered by water in sq km	314400
Climate	Tropical in South to temperate in North
Total arable land in sq km (2008)	1703000
Total arable land under permanent crops in sq km	100000
Total non arable land in sq km	1270190
total irrigated land in sq km	558080
Total forest area (%)	22.80%
Total forest cover in sq km	677010
Total population (2008) in million	1110
population growth rate	1.70%
Urban population (%) (2008)	84.70%
GNI (PPP) (2008) in USD billion	2726
GDP (Official exchange rate) (2008)in USD billion	911.8
GDP per capita (2008) in USD	821
GNI Per Capita (PPP) (2008) in USD	2726
GDP real growth rate (2008)	9.20%
% of GDP from agriculture sector (2005)	18.60%
% of GDP from industry sector (2005)	27.60%
% of GDP from services sector(2005)	53.80%
Country status	Under developing
Total labor force (2005)	496.4 million
% of labor force in agriculture	60%
% of labor force in industry sector	17%
% of labor force in service sector	23%
Unemployment rate	8.90%
Population below poverty line (2008)	29%
Total exports f.o.b.(2005)in USD billion	99.45
Total imports f.o.b.(2005) in USD billion	138.09
Net exports f.o.b.(2005) in USD billion	-38.64
Total Investment (gross fixed) (2005)	28.1% GDP
Industrial production growth rate (2005)	7.90%
Forex reserves and gold	USD 136 billion
Official exchange rate(2005)	Rs.44.1011 per USD
No. of airports	341
Internet users	60.0 million
Constitution of the Government	Federal Republic
History	Was Portuguese Colony & got independence in 1822
Natural Resources	Coal, Iron Ore, Manganese, Mica, Bauxite, NG, Limestone, Diamond, Petroleum, Arable Land

Source: The little green and red book series of World Bank and FAO statistical year book series of UN publications (2008)

produced are being processed at present. The installed capacity of fruits and vegetables processing industries has increased to 21 lakh tons in 1999 with 4589 fruit/ vegetables processing units. Exports during 1998-99 were worth Rs. 678 crores.

TIFAC Report (2003), the task force on Agro food processing of TIFAC on the sub group on fruits and vegetables, has given the technology status and future vision for India. The report states that the total production of fruits in the world is around 370 mmt. India ranks first in the world with an annual output of 32mmt. TIFAC study has focused on 12 selected vegetables which accounts for about 65% of the total production in India. It is estimated that around 20-25% of the total vegetables is lost due to poor post harvesting practices. Further while discussing about the future trends, the report highlighted that fruits and vegetables would continue to be harvested manually in the future. While small land holdings and non availability of good quality planting material have been the major issues of concern, it is expected that quality of planting material would improve in the long run due to right selection, hybridization, proper breeding and adoption of tissue culture.

US Commercial Services Report (2000), reported that the Indian food processing industry is a high priority sector and is poised for excellent growth in the next century. The government of India has adopted a major policy decision for commercializing agriculture and packaging sectors. Agricultural production and food processing together accounts 30% of India's GDP and employs more than 70% of its work force.

G.K.Kaul (1997), in his report on status of fruits and vegetables in India stated that the annual growth, both in area and production of horticultural crops has gained considerable momentum following planned diversification in Indian agriculture, encouraged by the Government from the eighth five year plan onwards. Further he highlighted that several fruit crops have proved to be most remunerative for replacing subsistence farming in the rain fed, dry land, hilly, arid and coastal agro systems.

Surinder Sud (1998), in his article on India's

revolutionary progress in food production opined that the interest shown by the domestic corporate sector and transnational corporations in setting up food processing units indicate that India would soon emerge as an important player in the international processed foods market. The Government already has approved about 343 proposals for 100% Export Oriented Food Processing Units and joint ventures since the beginning of the economic reforms, i.e. in the early 1990's. These would involve an investment to the tune of Rs.43040 Million including foreign direct Investment worth Rs.7880 Million.

MOFPI report (2001), It's report on summary on fruits and vegetable processing documented in the report of Ministry of Food Processing Industries (MOFPI) highlights the following facts;

- India is the second largest producer of vegetables and third largest producer of fruits.
- Thirty percent of the fruits and vegetables get wasted due to lack of proper processing and packaging facilities.
- Only two to three percent of the total produce is being processed in India.
- Total cultivation area under fruit and vegetables is around 12.0 million hectares and accounts for 7% of the total cultivation area.
- Main fruits produced in India are Mango, Banana, citrus, Guava and apple. These fruits account for 75 to 80 percent of total fruit production.

K.P.Prabhakaran Nair (2006), expressed that Indian agriculture is being undermined because of the unreformed policies in the agriculture sector that continue to encourage monoculture such as wheat and rice in Punjab and sugarcane in Maharashtra, where the cultivation has lead to exploitation of ground water causing long term environmental degradation. The extensive input subsidies which are not conducive to efficient agro practices may cause greater harm in the future. Indian agricultural extension network is comparatively inefficient when compared with the other countries like China and Brazil.

Manish Jain (2002), in his article explained that India accounts for 10% of the total world production of fruits and ranks second after China. It leads the world in the production of mango, banana, sapota and acid lime and has recorded highest productivity in grapes. Area under fruit has increased from 2.87 million hectares during 1991-92 to 3.729 million hectares during 1998-99 recording an increase of 29.93%. Similarly production increased from 28.63 mmt (million metric tonnes) to 44.02 mmt recording an increase of 53.83%. During the same period, productivity of fruits increased by 18.4%. Further he listed five largest fruit producing states of the country viz. Maharashtra (17.08%), Karnataka (12.37%), Andhra Pradesh (10.42%), Bihar (8.82%) and Uttar Pradesh (8.20%).

Researcher also noted the trend that out of the horticultural crops produced in the country, approximately 60% is consumed by the local population or marketed in the nearby market yards and only about 40% of the produce is channeled through the regulated markets for the consumption of urban population in the cities. Export markets account for less than 5% of the total production except in some commodities like cashew, spices, onion, etc. He noted further that the bare minimum infrastructural facilities are lacking even in the regulated markets. The horticulture produce suffer significant post harvest losses due to lack of adequate post harvest and marketing infrastructure viz. Processing units, packaging and grading facilities, cold storage facility, refrigerated transport vehicles/containers, storage and phytosanitary facilities, etc.

Researcher strongly recommends for an integrated development of horticulture industry in order to meet not only the requirements/ demand of the domestic market but also to exploit the export potential to maximum extent. Emphasis on quality production needs to be strengthened together with sound post harvest management of the highly perishable horticultural commodities.

Gouri Sundaram (2000), in a study on processed tropical fruits indicated that India is the second largest producer of fruits and vegetables in the world with an annual production of 94 mmt (million metric tones). It has the distinction of producing almost all tropical and

exotic fruits and vegetables because of varied climatic conditions. Due to the short life span of these crops, as much as **30 – 35% of the fruits and vegetables perish at various stages viz. harvesting, storage, grading, transport, packaging and distribution. Only 2% of these crops are processed in to value added products.** Hence there is strong need for maximum commercial utilization of fruits and vegetables and to adopt innovative production and marketing practices to the requirements of the world market and also to cater to domestic demand which over the past few years has been increasing because of various socio economic factors.

MOFPI Report, (1998), in their documentation on fruit processing submitted to Ministry of Food Processing Industry, highlighted that fruit and vegetable processing industry in India is highly decentralized. A large number of units are in home scale sector, cottage scale sector and small scale sector having installed capacity of 50 tons to 250 tons a year, where as a smaller number of large scale Indian and multinational companies have larger installed capacities in the range of 05 to 30 tons per hour. Due to effective liberalization policies and withdrawal of excise duty on fruit and vegetable products there has been significant rise in the growth rate of production of this industry.

Mckinsey and CII study report, (2001), in their article reported that, according to a joint study conducted by Mc Kinsey and Confederation of Indian Industry (CII), a staggering fifty percent of production of fruits and vegetables in India are lost due to wastage and value destruction. In monetary terms, the loss was estimated at over Rs.23000.00 crores a year.

Deepak Shah and Narayan Murthy (1998), studied marketing pattern of horticultural crops in Maharashtra. The grape orchardists marketed their produce either through forwarding agents in whole sale markets or through commission agents or directly to the Wholesaler. The per box (4Kg) total marketing cost was estimated to be the highest when the produce was sold through forwarding agents in the whole sale markets compared to the produce sold through other marketing channels.

Chaudhary et al. (1987), reported that the total number of fruit and vegetable processing units in India were around 1300 with an installed capacity of 3 lakh MT (Metric Ton). Capacity utilization was increased from 25 - 30% in 1970 to 40% in 1982. Factors like high cost of packaging material, high incidence of import duty and lack of research efforts for modernization of packaging and other techniques were found to be affecting the industry's production and exports.

Karwasra *et al.* (1997), reported that **post harvest losses in fruits and vegetables in India is worth about Rs.4000 crores annually**. In general physical terms, post harvest losses in these commodities vary from **9 to 40%**. Any reduction in these losses through proper post harvest management will generate additional quantity to meet internal and external requirements even at existing level of production.

Research Methodology

Macro level study about the fruit processing industry of India (Imports and Exports) is made using secondary data that was available. This data is then analyzed to know the pattern of imports and exports of fruits and processed fruit products by Indian fruit processing industry.

The research objectives of this exploratory study are;

1. To analyze the imports and exports of fruits and processed fruit products by the FPI (Fruit Processing Industry) of India over the past years and discuss.
2. To make recommendations for the healthy growth of the fruit processing industry of India based on the research findings.

Sources of secondary data collection include; FAO commodity year books, International trade statistics from www.trademap.com, FAO Production year books, FAO statistical year books, the little green and red data book series of WB (World Bank), etc. Relevant research papers and articles published in various journals of both nations, news papers, magazines, etc. have all been explored to get the required information. Nevertheless, official websites of UNCTAD, itc, DGFT, WB, FAO, etc., have been explored deeply to get hands

on the required information. Tabulation techniques are used for collecting secondary information.

Various statistical, mathematical and computational tools and techniques including Average per cent increase or decrease analysis, Average per cent contribution analysis, CGR (Compound Growth Rate) analysis, etc. using MS-EXCEL (2007 version) are being used to analyze the secondary information.

Research findings and discussion

It becomes clear from the table and graph shown above that mango accounts for nearly 27% (both value wise and quantity wise) of total fresh fruits exports from India. Orange and grapes together account for nearly 31% (38% value wise) of total Indian exports of fresh fruits. So it can be concluded that mango, orange, grape, apple and pomegranate are the key fruits as far as exports of fresh fruits are considered. India exports nearly 240000 Metric Tonnes (MT) of fresh fruits out of 45911000 MT produced, which is just 0.52% of total production.

Instead of exporting fresh fruits, if India can process these fresh fruits in to value added processed fruit products and export these value added processed fruit products, she can definitely bring down the total post harvest loss within international limits, i.e. around 20%, from the current level of 35-40%. Moreover there is lot of risk involved in exporting fresh fruits due to stringent quality norms.

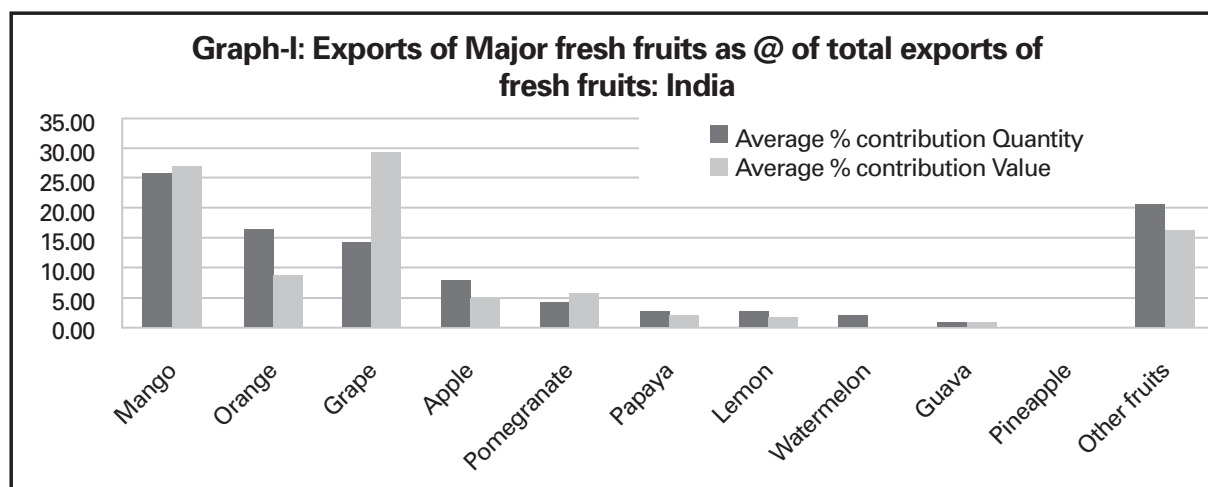
It is evident from the graph and table shown above that export of Grape has grown beyond expectations. Whereas growth in the exports of; pineapple, papaya, guava, lemon and pomegranate is also phenomenal. In general the exports of fresh fruits have grown significantly. India enjoys the advantage of having right blend of natural resources for growing almost all varieties of fruits. So India should freeze this opportunity and thrive in this sector.

India has to focus on exporting processed fruit products than fresh fruits as it will bring along the following benefits which India is badly in need of;

- Higher value addition and hence higher earnings of FOREX

Table I : Average % contribution of exports of major fresh fruits

Fruit	Average % contribution (Qty)	Average % contribution (value)
Mango	26.24	27.29
Orange	16.56	8.95
Grape	14.55	29.70
Apple	7.99	5.08
Pomegranate	4.65	5.85
Papaya	2.78	2.18
Lemon	2.72	1.85
Watermelon	2.16	0.83
Guava	1.05	1.06
Pineapple	0.62	0.48
Other fruits	20.68	16.73
Total	100.00	100.00



Source: Export Import Data Bank from the official website of DGFT (2008)

- Bringing down the post harvest loss to reasonable levels
- Generating employment and other economic benefits

From the table and graph shown above, it becomes evident that fruit pulp accounts for highest percentage (56%) of exports of processed fruit products. Pickles and chutneys together account for nearly 12% of total exports. The other processed fruit products, collectively, account for the rest.

Fruit Pulp Manufacturing Industry has received a lot of attention in India because of ever increasing export demand for Indian fruit pulp in the international markets. This particular industry is dominated by few big players, whereas Pickles and Chutney Manufacturing Industry is dominated by MSEs (Medium and Small Enterprises).

From the graph and table shown above, it becomes clear that exports of prepared and preserved fruits are growing at a very high rate. Even the fruits sliced and

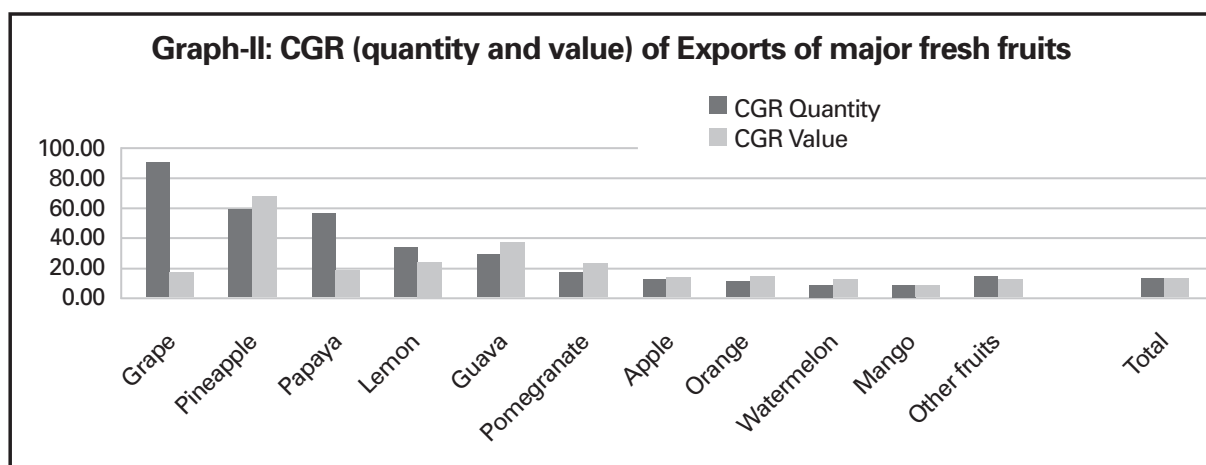
Table II : CGR of exports of major Fruits

Fruit	CGR Quantity	CGR Value
Grape	84.30	15.80
Pineapple	55.66	63.41
Papaya	52.34	16.77
Lemon	31.49	22.44
Guava	26.86	35.13
Pomegranate	15.65	22.09
Apple	11.93	12.47
Orange	10.72	13.87
Watermelon	8.80	11.20
Mango	8.03	8.29
Other fruits	12.63	11.87
Total	12.50	13.09

Dates account for nearly 73% of total imports of fresh fruits. Apples fall in the second place with a contribution of 21%. This is primarily because of the fact that Dates are produced by a very few countries like; Iran and Afghanistan, only. The other fruits, collectively, account for the rest 6%.

It is a good sign that India is more or less self reliant when it comes to fruit production. India can grow almost all varieties of fruits due to favorable climatic conditions and her vast bio diversity. This is a unique advantage for India.

From the table and graph shown above, it is clear that imports of majority of the fresh fruits are growing at a very high rate, even though their percentage contribution is significantly less.



Source: Export Import Data Bank from the official website of DGFT (2008)

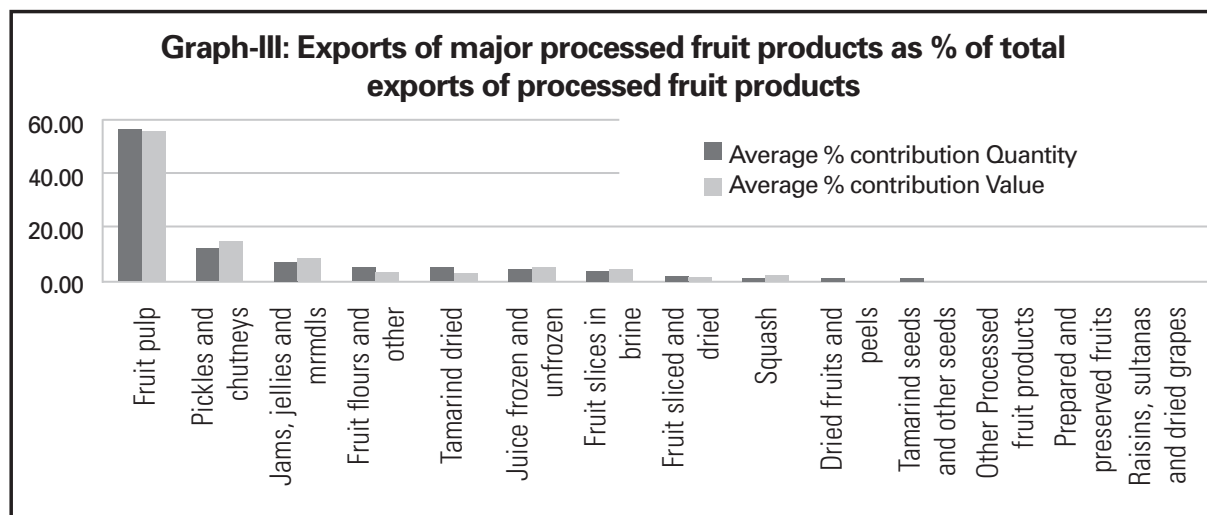
dried, squash, juice, and jams – jellies were growing at a phenomenal rate (20-40%). whereas pulp, dried fruits and peels, and raisins were growing at a high rate (10-15%). In total, the export of processed fruit products, except tamarind seeds is growing at a significant rate. This in fact is a very healthy sign for India and signals a greater export demand for processed fruit products. Indian Fruit Processing Industry should grab this opportunity and exploit the same before any other country like China does.

This is primarily due to the fact that disposable income of the Indian middle class population has increased significantly in the recent years and hence the standard of living of this segment has improved a lot. This segment has become more health conscious and spending generously on fruits. More so ever this segment is growing at a very high rate.

Dried dates account for nearly 88% of total imports of processed fruit products. Juices, pulp and raisins of selected fruits fall in the second place with a collective

Table III : Average contribution of Exports of Major processed fruit products

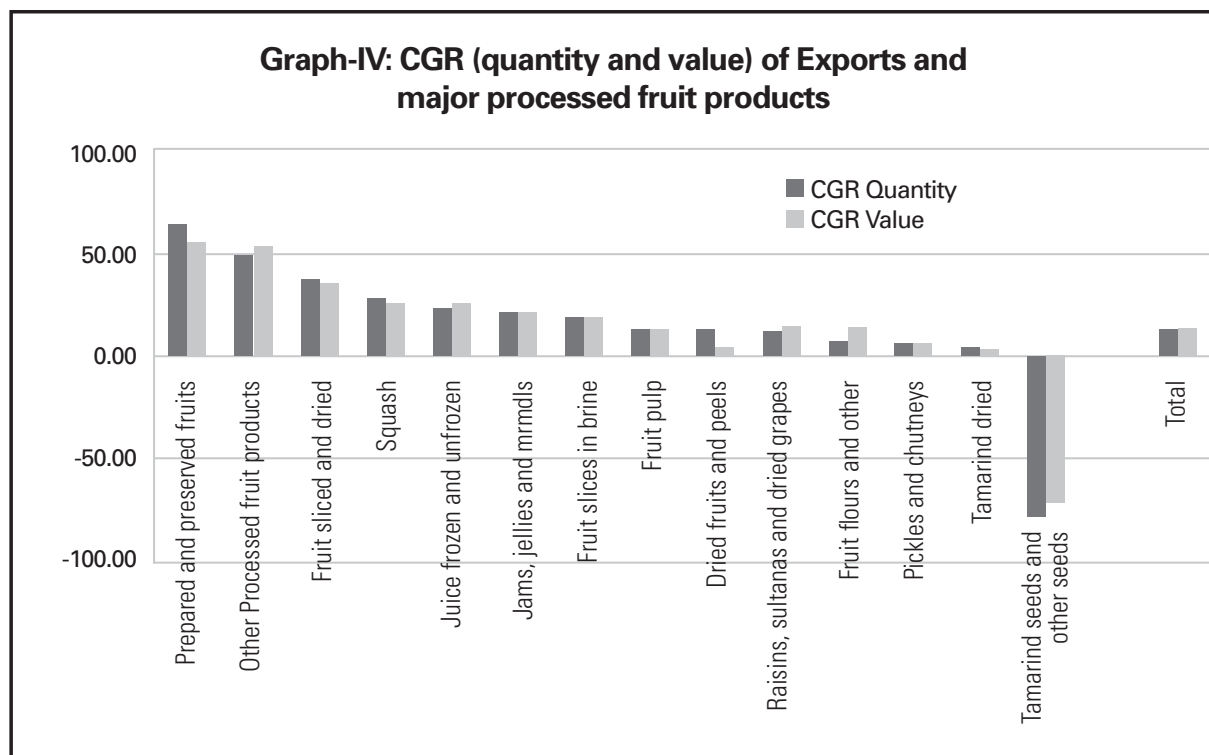
Major processed fruit products	Average % contribution Quantity	Average % contribution Value
Fruit pulp	56.72	56.07
Pickles and chutneys	12.19	14.92
Jams, jellies and Marmdls	6.96	8.45
Fruit flours and other	5.05	2.96
Tamarind dried	4.95	3.29
Juice frozen and unfrozen	4.24	4.94
Fruit slices in brine	3.67	4.04
Fruit sliced and dried	1.60	1.09
Squash	1.36	1.91
Dried fruits and peels	1.33	0.54
Tamarind seeds and other seeds	1.00	0.46
Other Processed fruit products	0.41	0.57
Prepared and preserved fruits	0.38	0.48
Raisins, sultanas and dried grapes	0.14	0.28
Total	100.00	100.00



Source: Export Import Data Bank from the official website of DGFT (2008)

Table IV : CGR of Exports of Major processed fruit products

Major processed fruit products	CGR Quantity	CGR Value
Prepared and preserved fruits	64.78	54.99
Other Processed fruit products	50.54	53.21
Fruit sliced and dried	37.45	35.50
Squash	28.12	25.77
Juice frozen and unfrozen	23.37	25.79
Jams, jellies and Marmdls	21.46	21.75
Fruit slices in brine	18.60	18.68
Fruit pulp	13.10	13.10
Dried fruits and peels	12.74	4.34
Raisins , sultanas and dried grapes	12.31	14.30
Fruit flours and other	6.73	13.83
Pickles and chutneys	6.53	6.33
Tamarind dried	4.10	3.82
Tamarind seeds and other seeds	-78.54	-71.52
Total	12.87	13.70



Source: Export Import Data Bank from the official website of DGFT (2008)

Table V : Average % contribution of Imports of Major fresh fruits

Major fresh fruits	% Contribution - Quantity
Dates	72.85
Apples	20.99
Pears and Quenches	2.53
Watermelons and melons	0.81
Oranges	0.73
Grapes	0.70
Pomegranates	0.43
kiwi fruits	0.29
Plums and sloes	0.12
Apricots	0.06
Berries fresh	0.04
Mangoes	0.02
Peaches and nectarines	0.02
Cherries fresh	0.01
Avacados	0.01
Lemons	0.01
Others	0.38
Total	100.00

contribution of 10%. The other processed fruit products, collectively, account for the remaining 2%.

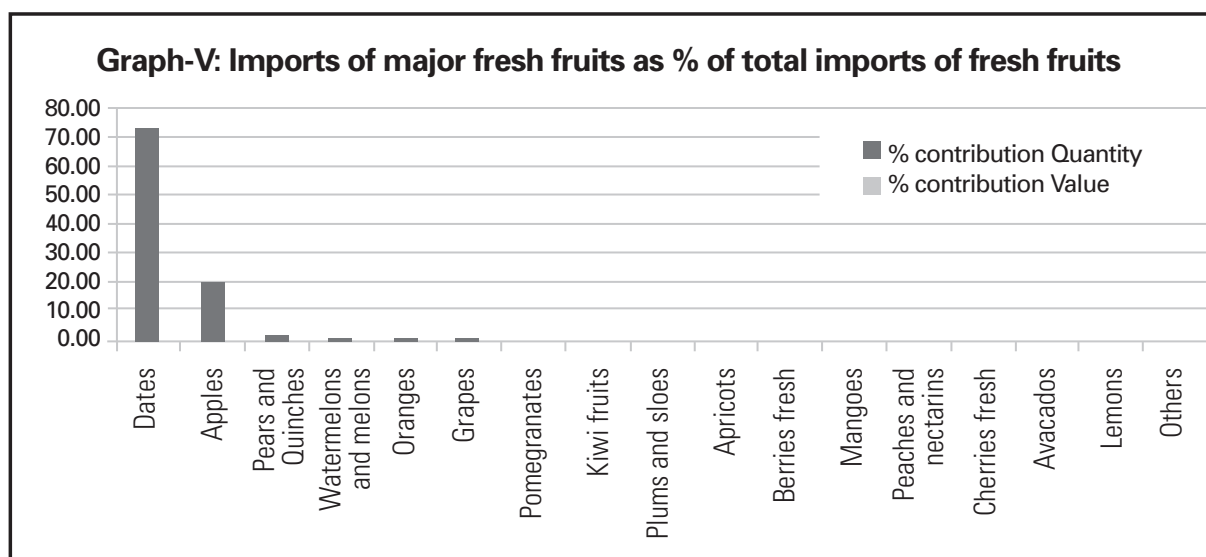
It is a good sign that India is more or less self reliant when it comes to processed fruit products production also. As India can grow almost all varieties of fruits, it can produce wide range of processed fruit products also. India need not have to depend on imports, except few processed fruit products like dried dates.

From the table and graph shown above, it is clear that imports of majority of the processed fruit products are growing at a very high rate, especially fruit pulp, even though their percentage contribution is significantly less.

Middle and upper middle class population, which is growing at a significant rate, want to consume fruits and processed fruit products 365 days a year. Earlier the consumption of fruits and processed fruit products was restricted to seasons only. This implies that the domestic demand for processed fruit products is also increasing. So Indian fruit processors should try and meet the needs of this upcoming buoyant market, comprising of around 500 million people.

Recommendations

1. Instead of exporting fresh fruits India should focus on exporting value added processed fruit products



Source: Export Import Data Bank from the official website of DGFT (2008)

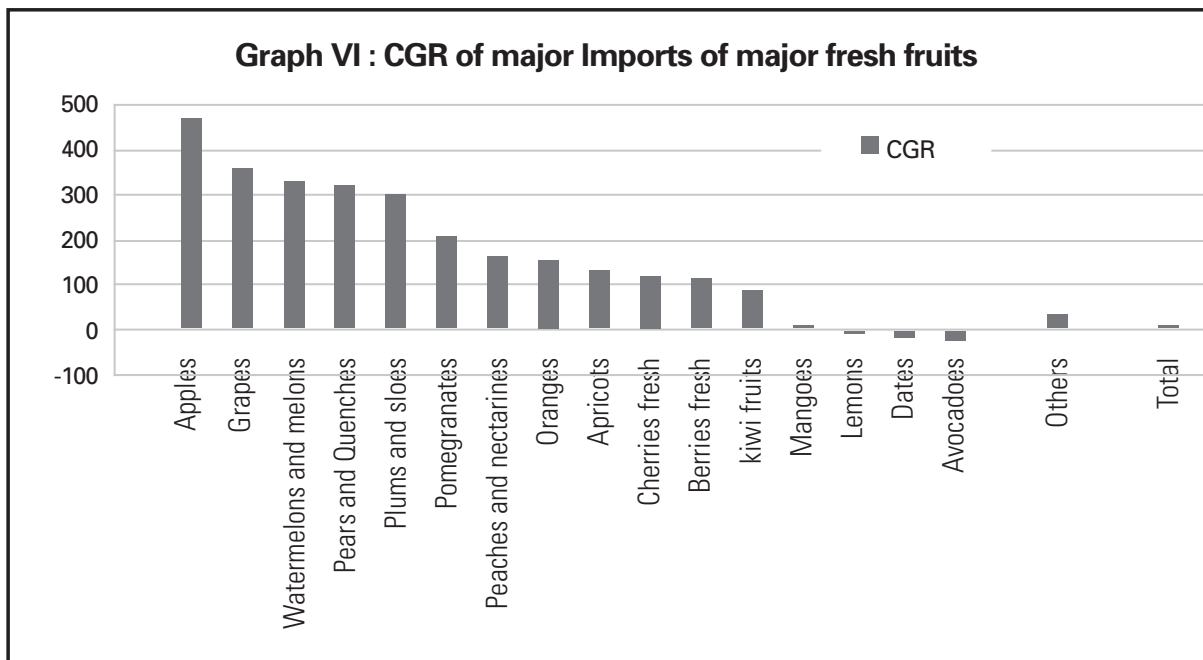
Table VI : CGR of Imports of Major fresh fruits

Major fresh fruits	CGR - Quantity
Apples	473.85
Grapes	361.54
Watermelons and melons	330.97
Pears and Quenches	322.81
Plums and sloes	306.10
Pomegranates	209.88
Peaches and nectarines	164.94
Oranges	159.04
Apricots	131.87
Cherries fresh	122.09
Berries fresh	112.69
kiwi fruits	88.57
Mangoes	5.89
Lemons	-3.02
Dates	-16.59
Avocadoes	-24.69
Others	36.12
Total	3.49

so that post harvest loss can be brought down significantly from the current level of 35-40% to 20% (international standard). Moreover as revealed by the high CGR (13.70%) there appears to be good demand for processed fruit products in the international markets. This will not only improves the profitability of the fruit growers and processors but also strengthen the economy in terms of generating higher employment and higher FOREX earnings. Indian fruit processing industry should exploit this great opportunity and lead the world market.

- As far as imports of fruits is concerned, it is clear from the above discussions that India is self reliant to a great extent and imports dates and apples only as we can't grow them at a larger scale because of climatic constraints. Whereas imports of processed fruit products is on the rise because of rapid explosion of middle class population and the sharp increase in the disposable income of this segment. Moreover people at large are becoming health conscious and are switching to rich nutritious food from traditional food grains. This further implies that the domestic demand for processed fruit products

Graph VI : CGR of major Imports of major fresh fruits



Source: Export Import Data Bank from the official website of DGFT (2008)

Table VII : Average % contribution of Imports of Major Processed fruit products

Major processed fruit products	% contribution - Quantity
Dried dates and figs	88.37
Juice	3.40
Raisins and sultanas	3.26
Fruit pulp and juice based drinks	3.07
Dried fruits and peels of fruits	1.11
Dried grape including wine	0.24
Jams, jellies and Marmdls.	0.22
Apricot kernels and other kernels	0.15
Prepared and preserved fruits	0.10
Squash	0.05
Vermouth and other wine of fresh grapes	0.01
Pomegranate seeds	0.01
Flours and powders of fruits	0.01
Total	100.00

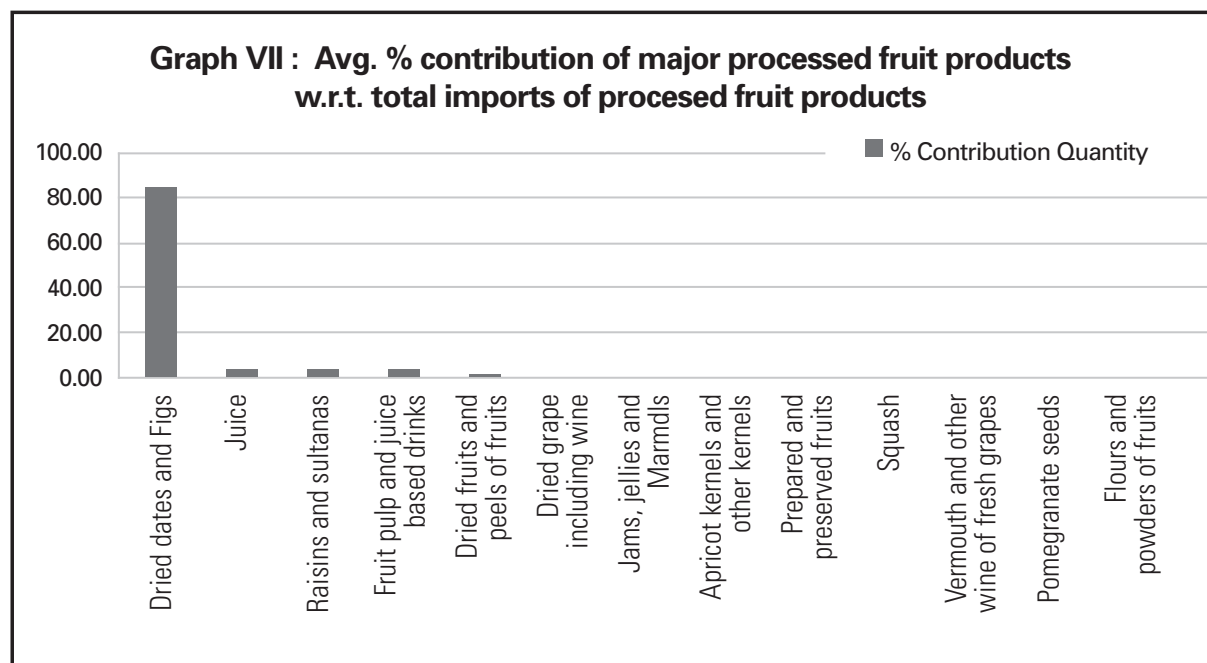
is increasing and Indian fruit processors should now focus on meeting the needs of this upcoming buoyant segment.

3. A coordinated, integrated and strategic effort of all the stake holders, i.e., fruit growers, fruit processors, channel members, nodal bodies (Governmental and Non Governmental), and end users is must to turnaround this industry. Fruit Processing Industry of India has to address all the constraints/problems/hurdles and reap the enormous advantages/benefits/ profits which this sector is to offer and be the world's largest fruit processing factory. Problems / constraints have to be studied in wholesome, integrated and strategic manner rather than adopting piecemeal approach.

Conclusion

India being the largest producer of fruits in the world, there is a tremendous scope for exports of fruits and processed fruit products. Indian fruit processing industry should seize this opportunity and make India a largest fruit processing factory of the world.

Graph VII : Avg. % contribution of major processed fruit products w.r.t. total imports of procesed fruit products



Source: Export Import Data Bank from the official website of DGFT (2008)

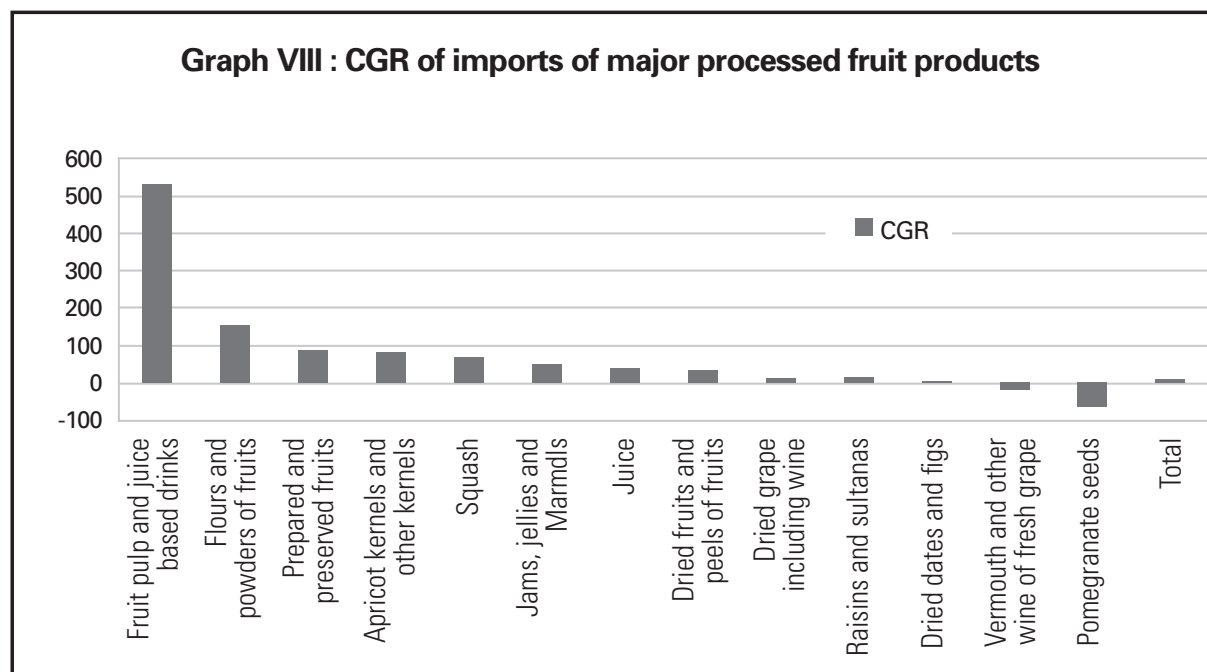
Table VIII : CGR of Imports of Major Processed fruit products

Major processed fruit products	CGR - Quantity
Fruit pulp and juice based drinks	537.51
Flours and powders of fruits	156.46
Prepared and preserved fruits	89.53
Apricot kernels and other kernels	87.51
Squash	70.36
Jams, jellies and Marmdls.	51.89
Juice	37.46
Dried fruits and peels of fruits	32.55
Dried grape including wine	15.24
Raisins and sultanas	14.83
Dried dates and figs	2.81
Vermouth and other wine of fresh grape	-18.6
Pomegranate seeds	-63.78
Total	5.01

References

- Chowdhary R, Gupta S, Pant M, Baikarkati D, Masood K and Sarkar S (1987): 'Present state of horticulture processing industry in India – an agricultural exports strategy, problems and prospects', Sangon Books Ltd., London; p 262 – 276.
- Deepak Shah and Narayanmurthy A (1998): 'Marketing pattern of horticultural crops – An economic analysis', Indian journal of agricultural economics; 53, p 388 – 389.
- Gouri Sundaran (2006); 'Processed tropical fruits – A product profile', Agricultural and Processed products Export Development Authority (APEDA) reports; p. 2–29.
- Government of India Report (1999): 'Food Processing - Fact sheet', MOFPI reports, 1999; p. 01 – 03.
- K.P.Prabhakaran Nair (2006): 'The SEZ debate – how valid is it!'; The Times of India, November 30, 2006 edition.

Graph VIII : CGR of imports of major processed fruit products



Source: Export Import Data Bank from the official website of DGFT (2008)

- Karwasra J C, Gangawar A C and Singh S N (1997): 'Production, export and post harvest management in fruits and vegetables in India', Indian Journal of agricultural marketing; 11(1), p. 31 – 32.
- Kaul. G. K. (1997): 'Fruit and vegetable production in India, 1997', NFI archives.
- Manish Jain (2002): 'Horticulture: A golden revolution on the anvil', Agriculture Today; December 2002, p. 17 -23.
- McKinsey and CII Report (2001): 'Fruit and vegetable losses alarmingly high', The Hindu; August 01, 2001 edition.
- Ministry Of Food Processing Industries report (2001): 'Fruits and vegetables processing: capacity and production"; MOFPI report.
- MOFPI Report (1998): 'Document in fruit and specific agriculture business sectors', MOFPI; 1998.
- Government of India Report (1999): 'Food Processing - Fact sheet', MOFPI reports, 1999; p. 01 – 03.
- NFI Archive Report (2003): 'Horticulture is the future, Post harvest technology: Making the most of what we grow'; NFI archives, 2003.
- Surinder Sud (1998): 'India's revolutionary progress in food production, Indian perspectives', NFI archives.
- TIFAC Report (2000): 'Agro-food processing: technology vision 2020: fruits and vegetables-current status and vision', TIFAC report; 2000.
- US Commercial Services Report (2000): 'The Best Prospects / Industry Overview', The U. S commercial service, 2000, p. 01 – 02.
- Vinodchari (2003): 'Food processing: policy initiatives', India Info-line sector studies; May 2003, p. 1- 4.