Introduction

Think globally, act locally…
Why Goa should be concerned about growth of Food Processing Industries?

After IT and BT is it a new catch-phrase?

Or are there valid logical reasons for preparing this report on FPI?

The most compelling reason is—GOA can claim to be Nature’s Own Megafoodpark. There is food in the ocean, in rivers, estuaries, lakes, ponds. The whole fertile landscape has been nature’s own factory to produce a diversity of edible biomass. The ancient name of ‘Gomant’, ‘Gomantak’, Gomanchal’ was derived from a flourishing agro-pastoral culture. Goa has been known as a land of honey, milk and wines (kadambari/sudha/varuni).

This natural megafoodpark sustained the peaceful, enterprising Goans for centuries. The ancient village communities of Goa, the Gaunkaris /communidades had established their natural mini and micro-food parks-coconut groves, cashew and mango plantations.

This endowment is our passport for sustainable wealth and employment generation. Food is good, welcome news in Goa. Droughts and famines have not much harmed this state. Hunger deaths are unheard of. But there had been periods of shortages in colonial and pre colonial history due to shortfall in local production of rice. Overall, Goa enjoyed comfortable food security. When one encounters such a satiated society—discussing food or food related projects and ideas becomes a culture of pleasure. Goa also meets most of the latest, modern criteria for a ‘food system’ as suggested by food policy analysts Simon Maxwell and Rachel Slater (refer to table below)

<table>
<thead>
<tr>
<th>A food system can be judged by whether it:</th>
<th>is good for nutrition;</th>
</tr>
</thead>
<tbody>
<tr>
<td>• is technically efficient in social prices;</td>
<td>supports higher standards of education;</td>
</tr>
<tr>
<td>• is allocatively efficient in social prices;</td>
<td>enables people to have status;</td>
</tr>
<tr>
<td>• leads to increased consumption by the poor;</td>
<td>enables people to have dignity;</td>
</tr>
<tr>
<td>• leads to increased asset-holding by the poor;</td>
<td>enables people to have rights;</td>
</tr>
<tr>
<td>• is good for health;</td>
<td>enables people to have influence;</td>
</tr>
<tr>
<td></td>
<td>underpins freedom;</td>
</tr>
<tr>
<td></td>
<td>offers security;</td>
</tr>
<tr>
<td></td>
<td>reduces vulnerability;</td>
</tr>
<tr>
<td></td>
<td>is good for environmental sustainability;</td>
</tr>
<tr>
<td></td>
<td>promotes gender equality;</td>
</tr>
<tr>
<td></td>
<td>promotes equality in general;</td>
</tr>
<tr>
<td></td>
<td>promotes social inclusion.</td>
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</table>

Globalization and the entry and impact of new market players and forces may change this picture. There are challenges as well as opportunities.

As compared to any other state or region, Goa limited by geographical area and population has a rich food culture. This is demonstrated by over 5000 ethnic Goan recipes. Nothing edible goes to waste in this state. Surplus fish are dried and salted. Cattle are seen munching the vegetable waste and the cooked rice water is used to
fatten the pigs. People have good knowledge of food, drinks and beverages and have
diverse, culturally acquired tastes. There is a wealth of traditional technological
knowledge in areas of food preservation and primary processing. More than 300
villages in Goa still practice traditional food preservation techniques on different scale
after harvesting period. Very few of these are traded products. With planned inputs of
knowledge and technology, the new pyramid of Goa’s food processing industrial
sector can be erected on this ‘people’s knowledge and base’.

In other words we are compelled to conclude in this report that –Goa has high
potential in FPI because local people find it intellectually satisfying sector.
Most importantly- the strength of Goa as a destination to attract new investment in
FPI sector lies in the rich cultural matrix of the state- where people love to discuss
good food and are prepared to patronise quality food products. Higher purchasing
power of local consumers and a booming middle class would create excellent
marketing opportunities for FPIs.

It is envisaged that decisions related to food processing sector in the 21st century
would be governed by global, national, regional, local and micro level realities.
A small state like Goa which is yet to make a noticeable mark in FPI sector nationally
and internationally needs to locate itself inside the evolving production-marketing,
branding matrix.

World population has crossed the threshold of seven billions. Global average life
expectancy is increasing. Food demand by growing humanity would drive the value
addition in food processing industry. The trend of urbanization would also create and
sustain demand for niche, high quality food products.

There are constraints of quantum, magnitude, space and scale to contemplate
investment, attract new technologies, create employment and generate wealth
sustainably without impacting the natural resources or environment. Goa would need
a highly selective, broad based approach in FPI sector. The success of pharma
industry in Goa has shown the way. Policies and models which can be planned and
executed in large states can not be applied to a small state like Goa which is limited
by its’ geographical area, land available for surplus crop production and further
industrialization. But we are enriched by experience of other states-particularly
Maharashtra, Gujarat, West Bengal, Bihar, Kerala, Haryana, Andhra Pradesh which
prepared their own agro-industrial or food processing policies. Some of their best
practices esp. incentives in FPI in west Bengal, Gujarat, Maharashtra could be
adopted in Goa and have been included where appropriate in this volume.

There are fundamental limits in a small state to develop capacity for making the raw
materials for FPI sector available from surplus production. At the same time it has to
be acknowledged that historically Goa was never a food surplus state. Goa well linked
by air, sea, rail and roads now has the advantage to import raw materials from other
surplus regions for processing. This automatically means multiplying the storage
capacity for perishable items.

The road to roadmap of Goa’s food processing industries needs to be constructed
using a knowledge based global approach.
Goa is one of the most developed state in India, our country still tagged as a developing country. Goa has acquired reputation as a multicultural tourist destination and educated and enterprising work force. The GSTFC has taken into consideration the current discourse in major issues related to food security and food markets. Think globally, act locally…

This applies to issue of food security. Here is a modest compilation of ideas which is engaging the best of minds in the world.

Global food security issues
According to USDA report—“Understanding the performance and dynamics of global food markets is no longer a matter of understanding the fundamentals of international trade. At $3.2 trillion, processed food sales are a major component of global food markets and account for about three-fourths of total world food sales. Still, only 10 percent of processed food sales are traded products. Although consumer demand for processed food continues to grow globally, growth in processed food trade has generally stalled since the mid-1990s.
While trade policy may contribute to this disparity between trade levels and market performance, many other factors are at play. Understanding the competitive nature of the global food industry means understanding changing consumer preferences and the food industry’s efforts to meet these demands.
The task of moving food from the farm to the table has become more complex, involving diverse local, national, and global agents and networks. Food markets are constantly evolving, driven not only by changes in consumer preferences, but also by technology, linkages between members of the food supply chains, and prevailing policies and business environments.
Sophisticated supply chains and distribution channels are now being adopted across different regions and national boundaries. Developing countries are expected to largely account for future increases in food demand, resulting from both increases in population as well as increases in per capita food consumption.

Annual growth rates of retail sales of packaged food products in developing countries range from 7 percent in uppermiddle-income countries to 28 percent in lower-middle-income countries, much higher than annual growth rates of 2-3 percent in developed countries. The food industry will continue to evolve in response to specific consumer demands in individual markets, with significant differences between industry strategies in the developing and the developed countries. Across all countries, modern food markets are responding to consumer preferences at a local level, even as the food industry becomes more global. In mature developed-country markets, product differentiation, value added, and consumer trust are important considerations for retailers seeking to retain market share. (New Directions in Global Food Markets / AIB-794, Economic Research Service/USDA).

The following figure projects Global food demand.
There are emerging opportunities in food and beverages sector as demonstrated in the figure below.

The global definition of primary and value added products is well illustrated in the figure below.
Food products are classified into primary and value added products based on the value addition.

<table>
<thead>
<tr>
<th></th>
<th>Primary Processed Products</th>
<th>Value Added Products</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture</td>
<td>Milled Grains, Spices</td>
<td>Beverages, Ready-to-Eat/Cook/Drink Products, Bakery Products, Processed Dryfruits</td>
</tr>
<tr>
<td></td>
<td>Fruits and Vegetables</td>
<td>Confectionery</td>
</tr>
<tr>
<td></td>
<td>Tea and Coffee</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sugar</td>
<td></td>
</tr>
<tr>
<td>Livestock</td>
<td>Edible Oil (Depending on processing level)</td>
<td>UHT Milk, Milk Powder, etc.: Icecream</td>
</tr>
<tr>
<td></td>
<td>Milk</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Eggs, Meat</td>
<td></td>
</tr>
<tr>
<td>Fisheries</td>
<td>Processed Aquatic Food (Depending on processing level)</td>
<td></td>
</tr>
</tbody>
</table>

- Primary processed products
  - Include cleaning, grading, sorting and packaging. The products manufactured generally act as inputs for value added products.
- Value added products:
  - Manufacturing these products involves use of processing techniques like blending, high temperature heating & boiling, chilling, etc. where the use of technology is significant.

However, not all food products are traded globally.

**Figure 1**

*Only 10 percent of $3.2 trillion global processed food sales are traded products, 2002*

There are many such data sets available. The following table depicts the trends in global food sales as in 2002.

**Table 1-1—Global food sales, 2002**

<table>
<thead>
<tr>
<th></th>
<th>Retail stores</th>
<th>Food service</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fresh food</td>
<td>531</td>
<td>382</td>
<td>913</td>
</tr>
<tr>
<td>Processed products</td>
<td>1,762</td>
<td>1,420</td>
<td>3,182</td>
</tr>
<tr>
<td>Packaged food</td>
<td>1,148</td>
<td>828</td>
<td>1,976</td>
</tr>
<tr>
<td>Beverages</td>
<td>614</td>
<td>592</td>
<td>1,206</td>
</tr>
<tr>
<td>Alcoholic drinks</td>
<td>316</td>
<td>422</td>
<td>729</td>
</tr>
<tr>
<td>Hot drinks</td>
<td>53</td>
<td>12</td>
<td>65</td>
</tr>
<tr>
<td>Soft drinks</td>
<td>245</td>
<td>167</td>
<td>412</td>
</tr>
<tr>
<td><strong>Total food</strong></td>
<td><strong>2,293</strong></td>
<td><strong>1,803</strong></td>
<td><strong>4,096</strong></td>
</tr>
</tbody>
</table>


**Understanding Global trends**

**What IFPRI (International Food Policy Research Institute) predicted?**

IFPRI is an international agricultural research center founded in the early 1970s to improve the understanding of national agricultural and food policies to promote the adoption of innovations in agricultural technology. Additionally, IFPRI was meant to shed more light on the role of agricultural and rural development in the broader development pathway of a country.

Meeting the food needs of a growing and urbanizing population with rising incomes will have profound implications for the world’s agricultural production and trading systems in coming decades. IFPRI research suggests some of the major developments that will characterize the world food situation between 1995 to 2020:

* Almost all the increase in world food demand will take place in developing countries. Developing countries will account for about 85 percent of the increase in the global demand for cereals and meat between 1995 and 2020.

* However, a developing-country person in 2020 will consume less than half the amount of cereals consumed by a developed-country person and slightly more than one-third of the meat products.

* A demand-driven “livestock revolution” is under way in the developing world. Between the early 1970s and the mid-1990s, the volume of meat consumed in the developing world grew almost three times as fast as it did in the developed countries. Demand for meat in the developing world is projected to double between 1995 and 2020.

* In response to the strong demand for meat products, demand for cereals for feeding livestock will double in developing countries. Demand for maize in developing countries will increase much faster than for any other cereal and will overtake demand for rice and wheat by 2020.

* To meet demand, the world’s farmers will have to produce 40 percent more grain in 2020. Increases in cultivated area are expected to contribute only about one-fifth of the global cereal production between 1995 and 2020, so improvements in crop yields will be required to bring about the necessary production increases.
However, it is worrisome that growth in farmers’ cereal yields is slowing from the heyday of the Green Revolution during the 1970s.

• Food production is increasing much faster in the developing world than in the developed world. By 2020, the developing world will be producing 59 percent of the world’s cereals and 61 percent of the world’s meat.

• Nevertheless, cereal production in the developing world will not keep pace with demand, and net cereal imports by developing countries will almost double between 1995 and 2020 to 192 million tons in order to fill the gap between production and demand. Net meat imports by developing countries will increase eightfold during this period to 6.6 million tons.

• About 60 percent of the developing world’s net cereal imports in 2020 will come from the United States. Eastern Europe and the former Soviet Union are forecast to emerge as major net exporters, and the European Union and Australia are projected to increase their net exports as well.

• Food prices will remain steady or fall slightly between 1995 and 2020. The much slower decrease in food prices compared with past trends is due to the continued slowdown in crop yield increases, as well as strong growth in demand for meat in developing countries.

• With increased production and imports, per capita food availability in the developing world will increase to 2,800 calories per day by 2020, an increase of about 9 percent over 1995.

• In the scenario described here, food insecurity and malnutrition will persist in 2020 and beyond. IFPRI projects that 135 million children under five years of age will be malnourished in 2020, a decline of only 15 percent from 160 million in 1995. Child malnutrition is expected to decline in all major developing regions except Sub-Saharan Africa, where the number of malnourished children is forecast to increase by about 30 percent to reach 40 million by 2020. With more than 77 percent of the developing world’s malnourished children in 2020, Sub-Saharan Africa and South Asia will remain “hot spots” of child malnutrition and food insecurity.
Methodology of GSTFC-FPI

The Goa State Task Force Committee (GSTFC) on Food processing industries (hereafter to be called GSTFC-FPI) was notified by the industries department on Dec. 9, 2010 (no. 3.37/2010-IND). The 23 members included 22 official members and including the chairman two non official members.

Vide the above mentioned notification The GSTFC-FPI was given 12 terms of reference (hereafter called TOR) as under:

(i) To draw plan of action and vision document to give and impetus to the development of Food processing sector in the state of Goa

(ii) Formulation of Food Processing Policy for the state of Goa and schemes under the Policy

(iii) Assessment status of various food processing industries

(iv) Identify key reasons for underdevelopment of the processing sector

(v) Evolve strategies for campaigns/marketing to promote setting up of food processing units and consumption of processed foods

(vi) Suggest measures for food safety, standards testing facilities

(vii) establish linkage of technology institutes/Research organizations with industry

(viii) Evaluate current status of infrastructure for entrepreneurs

(ix) Define the role of financial institutions/NGOS, farmers organizations and cooperatives

(x) To motivate farmers for farming clusters so that quantity and quality of raw materials may be produced as per the requirements of processors and market

<table>
<thead>
<tr>
<th>India’s Competitive Advantages in Food Processing</th>
<th>India</th>
<th>Global Rank</th>
<th>Share in Global Production</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arable Land (million hectares)</td>
<td>161</td>
<td>2</td>
<td>-</td>
</tr>
<tr>
<td>Irrigated Land (million hectares)</td>
<td>55</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>Coast Line (km)</td>
<td>8041</td>
<td>19</td>
<td>-</td>
</tr>
<tr>
<td>Major Food Crops (MT)</td>
<td>35</td>
<td>3</td>
<td>4%</td>
</tr>
<tr>
<td>Fruits (metric tonnes)</td>
<td>47</td>
<td>1</td>
<td>10%</td>
</tr>
<tr>
<td>Vegetables (metric tonnes)</td>
<td>82</td>
<td>2</td>
<td>10%</td>
</tr>
<tr>
<td>Rice/Paddy (metric tonnes)</td>
<td>132</td>
<td>2</td>
<td>22%</td>
</tr>
<tr>
<td>Wheat (metric tonnes)</td>
<td>65</td>
<td>2</td>
<td>12%</td>
</tr>
<tr>
<td>Milk (metric tonnes)</td>
<td>88</td>
<td>1</td>
<td>16%</td>
</tr>
<tr>
<td>Sugarcane (metric tonnes)</td>
<td>289</td>
<td>2</td>
<td>21%</td>
</tr>
<tr>
<td>Pulses (metric tonnes)</td>
<td>12</td>
<td>1</td>
<td>21%</td>
</tr>
<tr>
<td>Tea (metric tonnes)</td>
<td>0.88</td>
<td>1</td>
<td>28%</td>
</tr>
<tr>
<td>Edible Oilseed (metric tonnes)</td>
<td>25</td>
<td>3</td>
<td>7%</td>
</tr>
<tr>
<td>Cattle (million)</td>
<td>226</td>
<td>1</td>
<td>20%</td>
</tr>
</tbody>
</table>

Source: Cygnus report, India Food Processing Sector, 2005
(xi) The Task force Committee may constitute as many sub-committees consisting wholly of above members or partly of members or partly of other persons and for such purposes as it may think fit

(xii) Any other relevant agenda with permission of the chairman

**Methodology adopted by GSTFC-FPI**

Considering the voluminous nature of the work as per TOR the following methodology was adopted

1. Study of global trends and practices in food sector and FPI. This required reference to a large number of research papers and reports some of which have been included in Volume V.

2. Study of various policies and schemes of Ministry of Food Processing MOFPI, Govt. of India. These had to be downloaded, printed and studied.

3. Study of food processing policies of states in India-in particular scrutiny of policies of Maharashtra, Gujarat, Haryana, Bihar, Andhra Pradesh, Madhya Pradesh.

4. Study and analysis of previous reports/data/statistics on FPI in state of Goa. This included the report on Betul food processing park.

5. Structured meetings with members and invitees with provision for full videotodumentation for archiving and transparency. Invitees included stakeholders such as NABARD, APEDA, MPEDA, ICAR.

6. Preparation of detail minutes on basis of the transcripts of videotodumentation (the detail agenda notes and minutes are included in Volume II of the report)

7. A decentralized multi stakeholder approach-Most of the states have formulated policies and/or roadmaps by hiring professional consultants (e.g. Bihar). GSTFC-FPI adopted a decentralized approach by forming of multistakeholder subcommittees to give sectoral inputs. In all 14 subcommittees were formed with about 65 members.

8. These were given specific terms of reference, a small budget and full autonomy to meet and discuss. The format to present draft and final reports was circulated and explained.

9. Inclusion of inputs from SC/ST/Women stakeholders in FPI
10. Presentation of reports by subcommittees and discussion (the draft or final reports/suggestions/recommendations are included in Volume IV)

11. Information provided by the state and central government departments/agencies/corporations (important correspondence is included in Volume III)

12. Initiation of urgent departmental action as required in certain cases such as problem of spurious expired imported food products

13. Scrutiny of Betul Food processing park proposal as a case study—for this purpose the stakeholders-local sarpanch, MLA, Goa IDC were invited.

Discussions were also held with members of GSTFC-FPI and subcommittee members and convenors telephonically and by e-mail.

Based on the above methodology the report is presented in five volumes. The present Volume I includes the work as per the terms of reference (TOR) I to X.