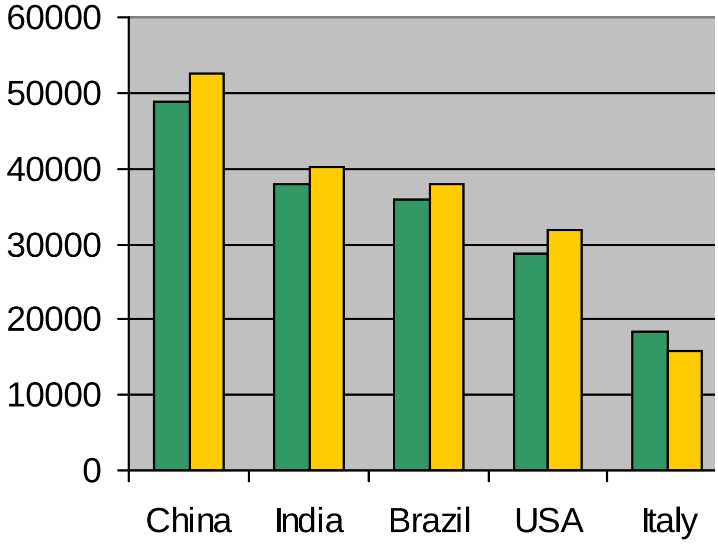
Annexure 1

Major Producers of Fruit



(Production in 000')

(Ref : CII research)

Annexure 2

Growth in capacity & production of Fruits and Vegetables in India

Year	Production 000 tons	Capacity 000 tons	Utilization %
1991	280	894	31.3
1992	360	950	37.9
1993	469	1100	42.6
1994	559	1260	44.4
1995	679	1402	48.4
1996	850	1750	48.6
1997	950	1910	49.7
1998	910	2040	44.6
1999	940	2100	44.8

Source : Ministry of Food Processing, Annual Report 2001

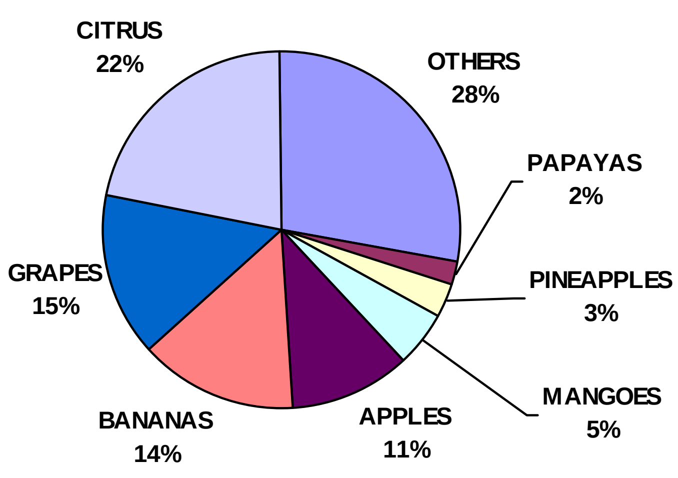
Annexure 3

Major Fruits in the World

Fruit	Production (unit)
Citrus	83,061
Grapes	57,165
Banana	50,596
Apple	42,388
Mango	17,744
Pineapple	11,740
Papaya	5,663
Others	102,921
Total	369,285

(Source: Ministry of Food Processing)

Share of Major Fruits



Annexure 4

Share of major vegetables in processing

Processed product	Tomato	Onion	Peas	Cauliflower	Others
		–	–	–	
Dehydrated products	–	95%	5%	–	–
Frozen products	5%	–	80%	10%	5%

(Ref : CII research)

Annexure 5

Key Statistics

Fruit Juices/ Pulp/ Concentrates

	Units	1994-95	1995- 96	1996-97	1997-98	1998-99	1999-2000
Export Quantity	Tonnes	1990	3536	940	2508	5336	3448
Export Value	Rs Cr	5.3	10.7	3.2	7.6	18.6	11.4
Import Quantity	Tonnes	31	57	443	969	2850	6088
Import Value	Rs Cr	7	6	1.5	3.6	9.8	24.6
Sales Value	Rs Cr	102	161.9	168.2	219.2	305.2	243.8
Market Size (Value)	Rs Cr	102.7	162.5	169.7	222.7	315	268.4
Domestic Consumption (Value)	Rs Cr	97.4	151.8	166.5	215.2	296.3	257

(Ref : CMIE data : year 2001)

Annexure 6

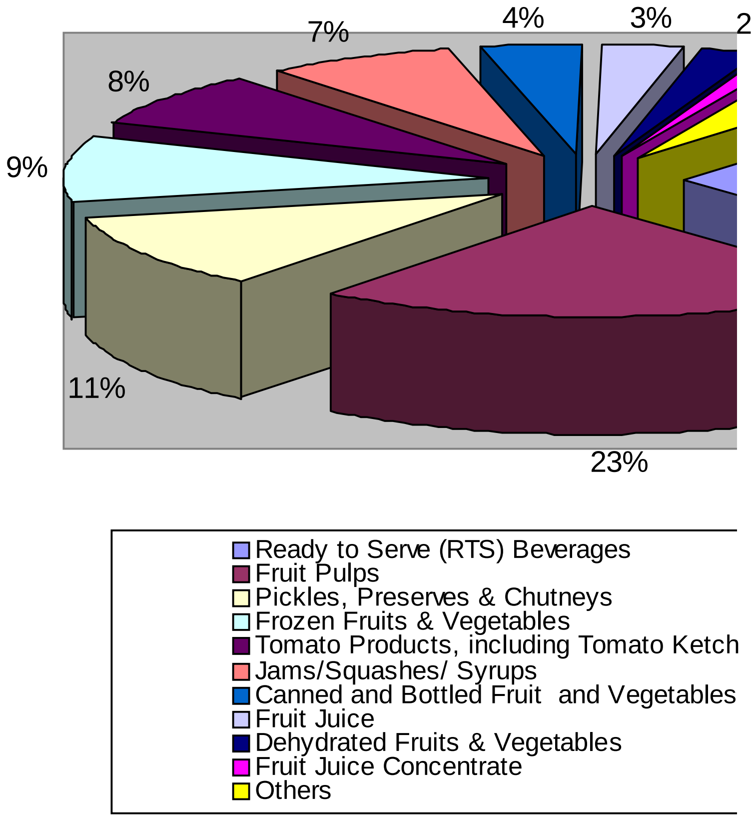
Export of Mango Pulp (including concentrate)

Year	Qty (MT)	Value (Rs. Crores) FOB
1990-91	19,496	27.07
1991-92	23,213	37.95
1992-93	27,506	58.34
1993-94	26,220	57.98
1994-95	34,460	80.71
1995-96	36,023	84.61
1996-97	40,302	105.01
1997-98	45,875	125.31

Source : MONTHY STATISTICS OF THE FOREIGN TRADE OF INDIA (D.G.C.I.S, Calcutta),

Annexure 7

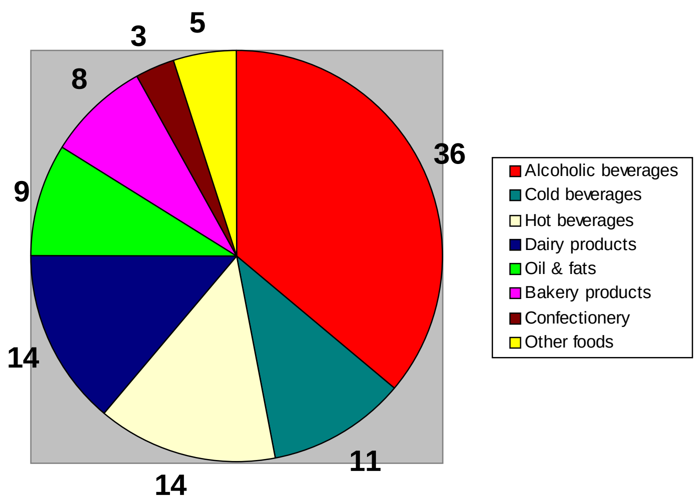
Composition of Fruits and Vegetables Processing Industries



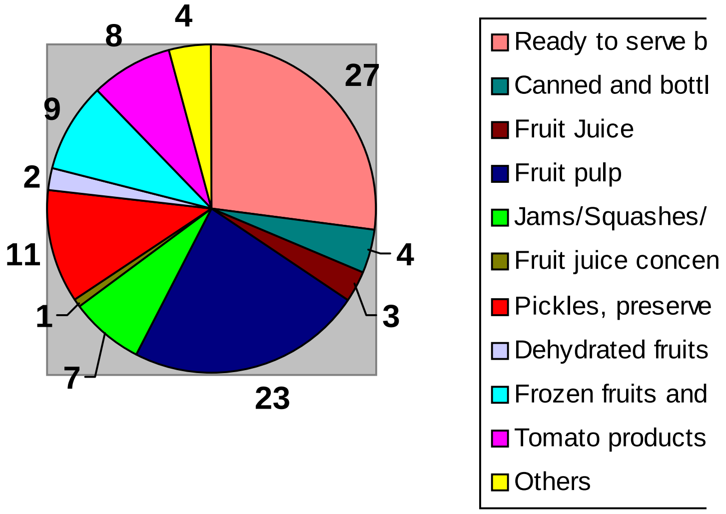
(Ref : CII research)

Annexure 8

India's market for processed food and drink



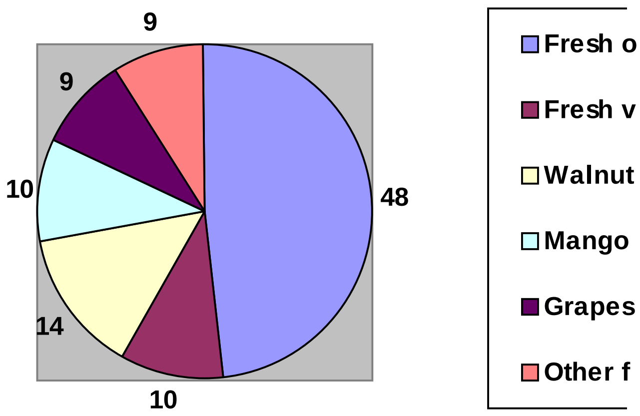
Indian processed fruits and vegetables



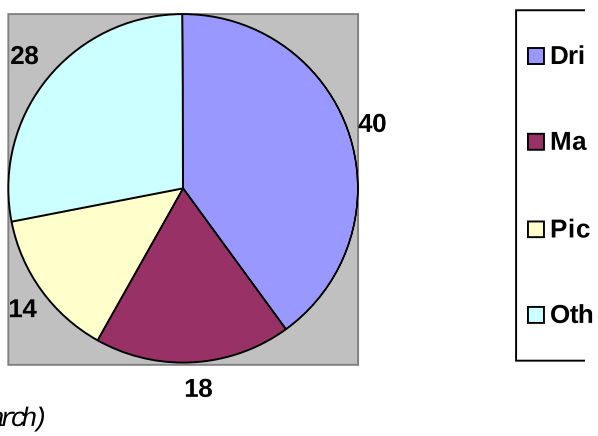
(Ref : CII research)

Annexure 9

Value-composition of fresh F&V exports



Value-composition of processed F&V exports



(Ref : CII research)

Annexure 10

Rise in number of Fruit & Vegetable processors

1991	3925
1992	4057
1993	4132
1994	4270
1995	4368
1996	4674
1997	4932
1998	5112
1999	5198

Scale of operations	No of units	%
Home-scale	2002	39
Cottage -scale	1083	21
Small-scale	834	16
Large-scale	598	12
Re-levellers	681	13

(Source : Ministry of Food Processing, Annual Report 2001)

Annexure 11

Processing capacity in India

	Capacity Level MT/Year	**No. of Licenses**
Large Scale	Above 250	371
Small Scale-B	100-250	332
Small Scale-A	50-100	334
Cottage Scale	10-50	702
Home. Scale	Less than 10	1776
Re-levellers	–	578
Total		4132

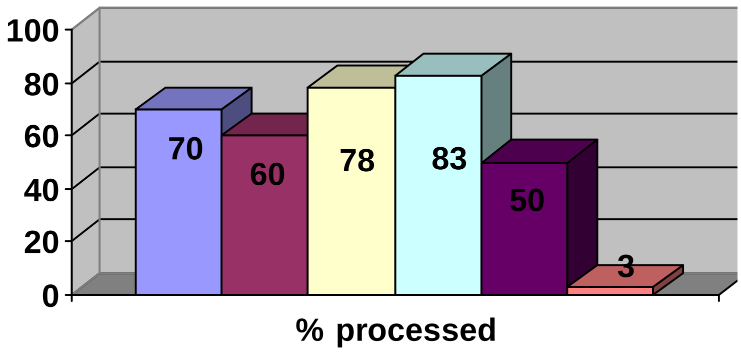
(Source: All India Food Preserves Association data)

Annexure 12

Fruit and Vegetable Processing Capacity of Major Countries

Country	% processed
Brazil	70%
USA	60-70%
Philippines	78%
Malaysia	83%
Israel	50%
India	<4%

Procesing Capacity as a Percentage of Produ



Ref: TIFAC Vision 2020, Indian Food Packer, AIFPA Publication, Vol 55

Annexure 13

World Production of Select Tropical Fruits & India's Share

Qty in Million Tonnes

Fruit	World	India	% share of India
Bananas	58.6	10.2	17%
Mangoes	23.5	12.0	51%
Papayas	4.8	0.5	10%
Pineapples	12.1	1.1	9%

Source : FAO Production Yearbook 1998.

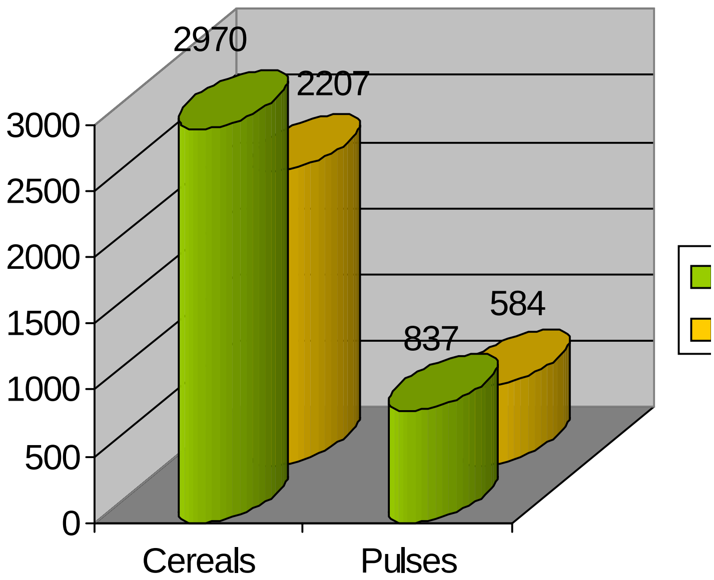
World Trade In Processed Tropical Fruits

	In US$ million
Canned Pineapple	739
Pineapple Juice	372
Tropical Fruit Juices,	
Concentrates and Pulp/Puree *	225
Dried/Dehydrated Tropical Fruit	65
* Excluding Pineapple Juice	

SOURCE: ITC (UNCTAD/WTO).

Annexure 14

YIELD OF FOOD GRAINS – INDIA VIS-A-VIS WORLD (In kg/ha)



(Ref : CII research)

Annexure 15

Key Statistics (India)

Break Fast Cereals

	Units	1994-95	1995- 96	1996-97	1997-98	1998-99	1999-2000
Production	Tonnes	2707	2242	2325	5084	5356	5885
Export Quality	Tonnes	24	48	78	734	337	201
Export Value	Rs Crore	1	3	5	2.4	1.4	1.4
Import Quality	Tonnes	850			41	5	33
Import Value	Rs Crore	1.3			1		1
Sales Value	Rs Crore	11.2	10.5	11.2	48.3	49.3	52.7
Market Size (Value)	Rs Crore	12.6	10.5	11.2	48.4	49.3	52.8
Domestic Consumption (Value)	Rs Crore	12.5	10.3	10.7	46.0	48	51.4

(Ref : CMIE data : year 2001)

Annexure 16

Key Statistics

Wafers and Chips etc

	Units	1994-95	1995- 96	1996-97	1997-98	1998-99	1999-2000
Production	Tonnes	4685	5344	5203	5091	6858	5101
Export Quantity	Tonnes	106	171	114	100	7	271
Export Value	Rs Cr	4	6	7	3		1.7
Import Quantity	Tonnes						129
Import Value	Rs Cr						5
Sales Value	Rs Cr	39.4	59.7	60.1	65.7	126.8	111.6
Market Size (Value)	Rs Cr	39.4	59.7	60.1	65.7	126.8	112.1
Domestic Consumption (Value)	Rs Cr	39	59.1	59.4	65.4	126.8	110.4

(Ref : CMIE data : year 2001)

Annexure 17

Key Statistics

Sauces/ Ketchups/ Jams

	Units	1994-95	1995- 96	1996-97	1997-98	1998-99	1999-2000
Export Quantity	Tonnes	7741	10940	4943	4507	6208	7347
Export Value	Rs Cr	20.1	30	18.9	17.2	21.9	24.8
Import Quantity	Tonnes	8	24	11	170	490	675
Import Value	Rs Cr	1	2	1	1.1	2.8	3.7
Sales Value	Rs Cr	131.8	155.4	171.7	152.1	191.2	201.2
Market Size (Value)	Rs Cr	131.8	155.5	171.8	153.2	194.1	204.9
Domestic Consumption (Value)	Rs Cr	111.7	125.5	152.9	136	172.1	180.1

(Ref : CMIE data : year 2001)

Annexure 18

Key Statistics

Biscuits

	Units	1994-95	1995- 96	1996-97	1997-98	1998-99	1999-2000
Production	Tonnes	652276	672710	621192	607842	704451	780252
Export Quantity	Tonnes	1273	2599	4949	4637	2130	3392
Export Value	Rs Cr	5.2	9.3	16.9	18.7	9	15.2
Import Quantity	Tonnes	561	863	587	1169	1406	1333
Import Value	Rs Cr	1.2	2.2	1.2	3.2	4.6	5.1
Sales Value	Rs Cr	2100	2400	2350	2500	2800	3200
Market Size (Value)	Rs Cr	2101.2	2402.2	2351.2	2503.2	2804.6	3205.1
Domestic Consumption (Value)	Rs Cr	2096	2392.9	2334.3	2484.4	2795.6	3189.9

(Ref : CMIE data : year 2001)

Annexure 19

Key Statistics

Bread

	Units	1994-95	1995- 96	1996-97	1997-98	1998-99	1999-2000
Export Quantity	Tonnes	64	18	4	2	175	228
Export Value	Rs Cr	2	1			1.1	1.6
Import Quantity	Tonnes				1		2
Sales Value	Rs Cr	127.1	141.3	155.4	165.5	170.6	165.9
Market Size (Value)	Rs Cr	127.1	141.3	155.4	165.5	170.6	165.9
Domestic Consumption (Value)	Rs Cr	126.9	141.2	155.3	165.5	170.6	164.3

(Ref : CMIE data : year 2001)

Annexure 20

Agencies Involved in Agri-Marketing

APEDA

APEDA stands for the **Agricultural and Processed Food Products Export Development Authorit**y. APEDA is an autonomous organization attached to the Ministry of Commerce of the Government of India. The main function of APEDA is to build links between Indian producers and the global markets. APEDA undertakes the following development programmes:

Development of data bases on products, markets and services

Publicity and Information Dissemination.

Inviting official and business delegations from abroad.

Organizing of product promotions abroad and visits of official and trade

delegations abroad.

Organization of seminars, workshops and awareness programmes on exports as well as latest farming processes.

Participation in International Trade Fairs in India and abroad.

Organization of buyer-seller meets and other business interactions

Information dissemination through APEDA's newsletter, Feedback Series and Library.

Distribution of Annual APEDA Awards.

Provides recommendatory, advisory and other support services to the Trade and Industry.

Problem solving in Government Agencies and Organizations, RBI, Customs, Import/ Export Procedures, problems with Importers through Indian Missions abroad.

APEDA also offers financial assistance under various schemes, which seek to promote and develop agro exports. Some of the activities that are eligible for financial assistance are:

??Strengthening of market intelligence and data base through studies and

surveys

Quality upgradation

Development of infrastructural facilities

Research and Development

Development of packing quality

Human resource development

Upgradation of meat processing facilities.

Under agricultural produce, the following categories of produce have been

APEDA has an extensive database of Indian exporters of agricultural produce from all major cities and large towns. APEDA also regularly publishes an informative journal on a quarterly basis. This journal, called **APEX Update** lists all the recent developments in India, seminars and workshops and exhibitions to be held in the future as well as a section on foreign importers interested in trade with India.

NAFED

National Agricultural Co-operative Marketing Federation of India Ltd. (NAFED) was set up on 2nd October, 1958. Nafed functions as the National Apex body of Cooperative Marketing in the country. It functions in coordination with 27 State level Marketing Federations, 16 State level special commodity Marketing Federations, 10 State level Tribal Co-operative Development Co-operations/ Federations, 172 District and Regional Marketing Societies. This network of primary co-operative marketing societies covers all important primary and secondary markets in the country.

Nafed promotes co-operative marketing of agricultural produce for the benefit of farmers through its own branches and the co-operative marketing network spread in the entire length and breadth of the country. Nafed undertakes internal trade covering a wide range of agricultural, horticultural, tribal and allied produce. It is a nodal agency for procurement of selected oilseeds and pulses under Price Support Scheme of the Government of India. It also implements Market Intervention Scheme in respect of horticulture and other crops for rendering market support to the farmers as and when warranted and decided by the Government of India.

Nafed covers stock of Agro-products from farmers in regulated markets during season directly by eliminating middleman. Nafed has established modern plants for pre-cooling- cum-cold storage, grading-cum-waxing, cleansing-cum-processing and modern warehouses at different parts of the country for post harvest handling of agro-products/ processing for marketing within and outside the country.

Nafed and its associate shippers export around 5 Lakhs Metric Tonnes of onion valued over Rs. 3000 million annually mainly to Middle-East, Far East, Sri-Lanka, Bangladesh, Nepal, Mauritius, Saudi Arabia, etc. Nafed's infrastructural, promotional and developmental activities serve the interests of onion farmers, consumers, exporters, importers, and the country's export at large. The Minimum Export Prices (MEP) of onion for different destinations is fixed regularly by NAFED.

During the year 1996-97, Nafed's total turnover was of the order of Rs. 6429 million, out of which contribution of export of various agro-based commodities was of the order of Rs. 3856 million.

State-Level organizations

MARKFED

It is the name of the state-level marketing organizations in states like Madhya Pradesh, Andhra Pradesh and Punjab. In Andhra Pradesh, it is a federation of Marketing Co-operative Societies. They have the main object of helping the farmers to secure better price for their produce by taking care of their market needs and providing agricultural inputs. Against this objective, the Markfed's present activity consists of sale of farm inputs like chemical fertilizers, pesticides & seeds, maintenance of godowns & procurement of Agricultural commodities through its member societies.

H P M C

HPMC, the **H.P. Horticultural Produce Marketing And Processing Corporation Ltd** was established in 1974 by the Himachal Pradesh Government with the objective of facilitating marketing and processing of fruits and vegetables to help farmers in getting remunerative prices for their produces. Apples, Oranges, Pears, Plums and Peaches are the main fruits being marketed and processed.

The entire set-up of HPMC is indeed a well-oiled machinery in place. Here is a glimpse of their facilities:

Post-harvest Infrastructure

Cold-chain having Pre-cooling units, refrigerated vans and cold storage's coupled with a chain of Grading/Packing Houses of the Corporation provide services to the farmers enabling post-harvest management on scientific lines.

Marketing outlets for Fresh Fruits & Vegetables

Marketing outlets of Hpmc in all the Metropolises and big cities of India provide wide choice to the farmers to consign their fruits to the place where best prices prevail.

Processing Plants

Processing Plants produce juices, pulps and concentrates of the fruits. They have Bucher Guyer Press, Falling Film Evaporator and Centritherm Concentration Units, Aroma Recovery, Westfalia Separator, Automatic Pulper line, Spiraflo Sterilisation, Asceptic Bulk Packaging, Canning Line and Tetra Pack Filling Machine.

Marketing of Processed Products

HPMC has more than 400 booths all over India to effect sale of consumer products - juices, jams, squashes, canned fruits etc. in addition to a well-knit distributors' net-work to provide quality fruit products at reasonable price to the consumers.

Newly Created Infrastructure

(i) Asceptic Packaging System

  (a) Asceptic bulk packaging system, spout design, steam sterilisation and versatile range of bags;

  (b) Tetrapack Filling System

(ii) Spiroflow equipment:

Capacity - 1000 litres per hour

(iii) Cool Chain:

  (a) Two pre-cooling units based at the cold storage's in the catchment areas;

  (b) Two refrigerated trucks linking pre-cooling units with cold storage's in terminal markets as well as the transit cold storage at Parwanu.

  (c) A 3,000 tonnes capacity cold storage under construction at Parwanu. This will primarily serve as a transit cold storage to regulate flow of fruit to markets for shipment.

  (d) A 6,000 tonnes capacity cold store under construction at Kolkata.

Annexure 21

Hazard Analysis and Critical Control Point

Seven Principles of HACCP

- Conduct a hazard analysis
- Identify critical control points
- Establish critical limits for each critical control point
- Establish critical control point monitoring requirements
- Establish corrective actions
- Establish record keeping procedures
- Establish procedures for verifying that HACCP system is working as intended

WHY HACCP ?

As a member of WTO, India is Signatory to the Sanitary and Phytosanitary (SPS) agreement and hence has to adopt for international trade, the standards, guidelines and recommendations issued by the Food Hygiene Committee of the Joint FAO/WHO Codex Alimentarius Commission which advocates the adoption of HACCP. Industries in the countries exporting to WTO member nations would now have to adopt HACCP, from dates specified by each importing country. The Indian Standard on Food Hygiene - Hazard Analysis and Critical Control Point (HACCP) - System and Guidelines for Its Application, IS 15000:1998 is technically equivalent to the above mentioned Codex document. For food industry in India, adoption of HACCP is becoming imperative to reach global standards, demonstrate compliance to Regulations/Customer requirements besides providing safer food to our millions.

Highlights

- Mandatory for export from certain sectors of food industry to some countries
- Pro-active system for assuring safe production of foods

- Emphasis prevention rather than inspection
- Addresses all types of Hazards - Microbiological, Physical and Chemical
- Can be integrated into a more general quality assurance plan
- Can be implemented in tiny, small, medium and large scale enterprises

Benefits of HACCP

- Reduces contamination
- Reduces recall/product destruction
- Provides market protection
- provides preferred supplier status
- demonstrates conformance to international standards and regulations, and requirements of overseas markets
- Transforms commodities into branded products
- International acceptance

HACCP Certification

BIS offers two Certification schemes to the food industry.

- Food Safety Certification against IS 15000:1998
- HACCP based Quality System Certification provides for two Certification through one audit Certification of Quality System against IS/ISO 9000 and Certification of HACCP against IS 15000:1998

How to Obtain Licence ?

- Establish a documented quality system and/or HACCP implementation plan and ensure its effectiveness
- Submit application on prescribed peroforma along with the questionnaire and necessary fees
- Submit the quality manual and/or concerned documents, when asked for

- Arrange auditing by BIS Assessment Team
- Take corrective actions on non-conformities observed by assessment team and get them verified to obtain the Licence!!!
- The licence will enable the company to compete effectively in national and international markets
- BIS Quality System Certification Scheme is accredited by Road Voor Accreditatie (RvA)

Other Services Offered by BIS

- Awareness Programmes for food industry
- In-house training
  - a) Implementation of HACCP as per is 15000:1998, and
  - b) Operation of Quality System as per ISO 9000 and HACCP as per IS 15000:1998
- Custom-made training programmes for the industry
- Technical Information Services on Standards and Certification matters
- Pre-certification services

Annexure 22

Potential for Trade i
(C

Country	Dried / Preserved Veg.	Pickles / Ethnic foods	Processed F and Vegetal
European Union			
Belgium	✓	✓	
France	✓		
Germany	✓		
Netherlands	✓	✓	✓
Poland			
Spain	✓	✓	
Switzerland	✓		
Africa			
Congo			
Ethiopia	✓		
Kenya	✓		
South Africa	✓		✓
Tanzania	✓		
Uganda			✓
Middle East			
Bahrain			
Oman			
Saudi Arabia	✓		✓
UAE			✓

Yamen	✓		
Asia			
Bangladesh			
China			
Philippines			✓
Sri Lanka	✓		✓
Singapore	✓		✓
Thailand			
LAC			
Argentina	✓		
Brazil	✓		
Mexico			
Russia			✓
Canada	✓	✓	
Mauritius			

*CII Study
** Other than Dried and Preserved Fruit and Vegetables
*** Includes Buffalo Meat only

Annexure 23

India's Exports : Agro-

Values in Rs. lakhs

Country	Dried / Preserved Veg.	Pickles / Ethnic foods	Processed Fru and Vegetabl
Argentina	210.82	10.53	--
Austria	61.75	13.88	6.44
Bahrain	384.23	58.60	13.71
Bangladesh	**8395.82**	6.18	148.8
Belgium	**1131.07**	**1177.3**	19.31
Brazil	143.76	7.61	--
Canada	**1843.43**	726.62	224.29
Chile	15.4	18.9	--
China	62.3	10.85	4.1
Colombia	--	--	5.4
Congo	--	--	--
Denmark	72.4	117.65	--
Finland	116.25	10	94.6
France	**1212**	831.3	53.93
Germany	**2304.3**	855.6	670.5
Mauritius	122.3	1.83	89.3
Mexico	--	--	--
Netherlands	**1322.82**	**111.9**	**1528.6**
Oman	61.65	112.9	96.63
Pakistan	343.79	1.4	17.8

Poland	293.9	36.7	85.5
Philippines	75.5	46.4	**1348.3**
Russia	314	25.9	**379.53**
Saudi Arabia	**1432.5**	589.5	**1142**
Singapore	754.46	104.57	431.4
South Africa	343	52.63	87.4
Spain	960	661	--
Sri Lanka	12310.5	27.3	598
Switzerland	1336.8	44.35	155.32
Tanzania	4.7	6.13	0.13
Thailand	34.3	128.8	54.3
UAE	--	--	2192.5
Yamen	780	--	83.5

*Only prominent product categories included

**Other than Dried and Preserved Fruit and Vegetables

***Includes Buffalo Meat only