Eleventh Five Year Plan

Report of the
Working Group on Food Processing Sector

Ministry of Food Processing Industries
Government of India
November, 2006

Foreword

The Ministry of Food Processing Industry (MFPI) has been supporting a range of initiatives for the growth of food processing industry. However, the response to some of the schemes/programmes of MFPI has not been encouraging. MFPI therefore took the decision to critically review its existing programmes so that they reflect changing economic realities. It was also realised that a paradigm shift is required in implementation of the various schemes to achieve the targets under the Vision 2015. MFPI constituted following five sub-groups on the various sub sectors of food processing industries

- Sub-group on Meat, poultry, fisheries and dairy
- Sub-group on Fruits and Vegetables, Wine and Beer
- Sub-group on Infrastructure
- Sub-group on Taxation and Finance
- Sub-group on R&D, HRD, Labs and Standards

Two rounds of meetings of the sub-groups were held during 25th-28th August and 13th-18th September. Based on discussions with stakeholders in sub-group meetings and consultations with domain/ sectoral experts, a new Action Plan is being proposed for the Eleventh Five Year Plan. While some of the schemes under Tenth Five Year Plan will continue, the effort has been to restructure them with appropriate management/implementation arrangements in Public Private Partnership mode, with strong Project Implementation capabilities and a decentralized approach. The new approach is integrated and not only addresses issue of financial assistance but also issues of Skill development, Entrepreneurship, Institutional Development etc. Further, it is to be a decentralized cluster based approach and also addresses issues like street food safety. The proposed programmes/Schemes are expected to make the Vision 2015 for the industry a reality.

Shri P.I. Suvrathan

Secretary
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Acknowledgement

We are thankful to IL&FS for coordinating our efforts towards preparation of this document in consultation with major stakeholders of the food processing industry and sectoral experts. IL&FS has brought their rich experience in project management and public private partnership in preparation of the detailed strategy for the Eleventh Five Year Plan.

Executive Summary

Overview of the Food Processing Sector

The contribution of agriculture to India's GDP at the time of Independence was 70% and it accounted for 85% of total employment. The share of agriculture in the country's GDP has been gradually declining since then. At present, the contribution of agriculture to GDP is about 25%, but it still engages about 70% of the population. The annual average rate of growth of agricultural GDP has also declined from around 3.5% during mid-eighties to mere 1.5 % during 2006-07.

It is estimated that if the country has to maintain a GDP growth rate of over 8%, the agricultural sector has to grow at the rate of at least 4%. The country has a huge potential for growth in agriculture with about 160 million hectares of arable land and diverse agro climatic conditions, suitable for cultivation of a wide variety of crops.

While the productivity needs a definite improvement it is increasingly becoming evident that only a vibrant food processing sector can lead to increasing farm gate prices and thus increasing income levels, reduction in wastages and increasing employment opportunities.

India currently produces about 50 million tonnes of fruits, which is about 9% of the world's production of fruits and 90 million tonnes of vegetables, which accounts for 11% of the world's vegetable production.

Though India has a strong raw material base, it has been unable to tap the potential for processing and value addition in perishables like fruits and vegetables. Only about 2 percent of the fruits and vegetables in India are processed, which is much lower when compared to countries like USA (65 %), Philippines (78%) and China (23)%

Even, within the country, share of fruits and vegetables processed is much less when compared to other agricultural products such as milk (35%) and Marine Products (26%).

More importantly the lack of processing and storage of fruits and vegetables results in huge wastages estimated at about 35%, the value of which is approximately Rs.33,000 Crore annually.

A developed food processing industry would not only reduce the wastages, but would also increasingly fetch remunerative income to farmers which is another problem before the agriculture sector at present.

At present the food processing sector employs about 13 million people directly and about 35 million people indirectly. In 2004-05, food processing sector contributed about 14% of manufacturing GDP with a share of Rs 2,80,000 Crores. Of this, the unorganized sector accounted for more than 70% of production in terms of volume and 50 % in terms of value.

On the export front, India has 1.5% (INR 360 Bn. in 2003-04) share of global agricultural exports (approximately USD 522 Bn. or INR 24,000 Bn.), despite its leadership in agricultural production

Opportunities for Food Processing

Food products today are the single largest component of household consumption expenditure. The current food consumption in India is estimated at Rs 8,60,000 Crore. Processed food account for Rs.4,60,000 Crore and share of primary processed food (includes packed fruits and vegetables, packed milk etc) is at Rs2,80,000 Crore.

Changing age profile, Increase in income, Social changes (Increasing number of working women), Life style factors, Organized Retail outlets are all factors favouring the growth of the food processing sector

Food processing sector generates significant employment. The multiplier effect of investment in food processing industry on employment generation is 2.5 times than in other industrial sectors, higher than any other sector.

Constraints

While the food-processing sector offers several opportunities, it faces constraints as well, such as:

- Low income and the high share of basic food in the household consumption
- Socio cultural factors such as preference in India for freshly plucked/cooked food, variation in food habits across the country, easy availability of raw materials for cooking, preference for consumption of food at home etc.
- Low productivity, high wastage
- Inadequate infrastructure for sorting, grading, packing etc. in addition to the high cost of raw material (at processor's level)
- APMC Act which restricts sourcing materials from farmers
- Lack of a common policy on Contract farming
- Lack of trained man power for various stages of processing, storage, marketing and branding
- Lack of access to modern technology
- Low share of sale of food products through organized retail, which are the usual drivers of quality, scale and integration.
- Access to Credit for farmers as well as small and medium food processors is a key issue. Over 75% rely on informal credit at very high interest rates leading to increase in cost of production affecting competitiveness
- Inability to attract investment by large corporate houses who complain of unreliable sources of supply of raw material
- Inability to induce investor confidence

- Low inflow of Foreign Direct Investment, in spite of the permission for 100% FDI in the food processing sector (except in food retailing, alcoholic beverages and plantations)
- Inability of Government Schemes to have the desired impact on productivity, technology and market arrivals

Thrust Areas

The vision 2015 of the Government of India for the food processing sector aims at:

- Enhancing and stabilizing the income level of the farmers
- Providing choice to consumers in terms of greater variety and taste including traditional ethnic food
- Providing greater assurance about safety and quality of food to consumers
- Promoting a dynamic food processing industry
- Enhancing the competitiveness of food processing industry in both domestic as well as international markets
- Making the sector attractive for both domestic and foreign investors
- Achieving integration of the food processing infrastructure from farm to market
- Having a transparent and industry friendly regulatory regime
- Putting in place a transparent system of standards based on science

The specific targets would be to increase:

- The level of processing of perishables from 6% to 20%
- Value addition from 20% to 35%
- Share in global food trade from 1.5% to 3%, in the next 15 years

An estimated investment of Rs. 100,000 Crores is required to achieve the above Vision of which Rs. 45,000 Crores is expected to come from the private sector, Rs. 45,000 Crores from Financial Institutions and Rs. 10,000 Crore from Government.

Review of Tenth Plan Schemes

The MFPI has been implementing several schemes for the development of food processing in the country which are as follows:

- Scheme for Infrastructure Development
- Scheme for Technology Upgradation /Establishment /Modernization of Food Processing Industries
- Scheme for Quality Assurance, Codex Standards and Research & Development
- Scheme for Human Resource Development
- Scheme for Strengthening of Nodal Agencies
- Scheme for Backward and Forward Integration and other Promotional Activities

In general, the performance of Tenth Plan Schemes has not been very encouraging. A review of the financial targets and expenditures under various Tenth Plan Schemes shows that the aggregate disbursement under various schemes has been low at Rs. 388 Crore till September 2006 against a budgeted amount of Rs. 650 Crores for all the schemes.

Also, while physical targets may have been achieved under some of the Schemes, the ground realities present a different picture. Ministry of Food Processing Industry (MFPI) has supported development of 54 Food Parks in the country since the Eighth Five Year Plan period, most of them are yet to be operational. Against a physical target of 25 Parks during the 10^{th} Plan, 18 Parks have been sanctioned so far. Of these, only 8 Food Parks may be said to be operational. Even those operational are facing problems of gross under utilization, besides being unable to attract entrepreneurs. Only 28 units are currently in operation in these 8 Parks. Again, only 1 project has been supported under the Scheme for Modernization of Abattoir during the current Plan. And though 18 projects may have been supported under cold chain facilities and 5 under Value Added Centres, only 4 Cold Storages and 2 Value Added Centres are currently operational.

Proposals for Eleventh Five Year Plan

Taking into consideration the outcome of various schemes, a paradigm shift is required in implementation of the various schemes to achieve the targets under the Vision 2015.

Taking note of this, five sub-groups were constituted by the Ministry of Food Processing Industries on the various sub sectors of Food Processing Industries and areas pertinent for the growth of the sector as follows:

- Sub-group on Meat, poultry, fisheries and dairy
- Sub-group on Fruits and Vegetables, Wine and Beer
- Sub-group on Infrastructure
- Sub-group on Taxation and Finance
- Sub-group on R&D, HRD, Labs and Standards

Two rounds of meetings of the sub-groups were held during 25th-28th August and 13th-18th September.

Based on discussions with stakeholders in sub-group meetings and consultations with domain/ sectoral experts, it is proposed to revise the current strategy for the food processing sector.

While some of the schemes under Tenth Five Year Plan will continue during the Eleventh Five Year Plan, they need to be restructured with appropriate management/implementation arrangements in Public Private Partnership mode, with strong Project Implementation capabilities. The new integrated approach not only addresses issue of financial assistance but also issues such as skill development, entrepreneurship, Institutional Development, providing a policy environment which stimulates growth .

Core elements of the proposed strategy are:

- Better project selection, development and implementation
- Decentralized cluster based development, particularly for creation of infrastructure and fostering linkages to retail outlets.
- Industry led capacity building and upgradation of standards
- An integrated food law and science based food standards.
- Strategic intervention with redesigned schemes and strong implementation arrangements at the following points
- Importantly, the Ministry has to be strengthened appropriately, to meet the challenges in implementing various new initiatives proposed for energizing the food processing sector in the country.

The priority areas identified for intervention therefore are:

- Infrastructure development
- The food park scheme is proposed to be modified into a scheme for an Integrated Food Zone/Mega Food park
- Modernization of Abattoirs and setting up of National Meat Board
- Cold Chain, Value Addition and Preservation infrastructure (Cold storages, Reefer vans etc.)
- Irradiation Centres
- Research and development – Products, Technology, Quality and Skills
- Capacity Building – Human Resource Development, Research & Development, Quality, Safety, Related Infrastructure
- Implementation of Food Safety and Standards Act, 2006.
- Establishment of NIFTEM
- Modernization of PPRC, Thanjavur into a National Crop Processing Center
- Upgrading safety and quality of street food and establishing food streets in identified cities
- Wine Sector Development- Establishment of Wine Board

Salient features of Proposed Schemes

Based on the review of Tenth Plan schemes, it is proposed that all existing schemes be continued under the Eleventh Plan with or without modifications. However, certain components under some of the schemes are proposed to be merged or discontinued as follows:

- The components of Packaging Centre, Cold Chain Facilities, Value Added Centres and Irradiation Facilities under the Scheme of Infrastructure Development may be merged into a single component.
- The component of Bar Coding under scheme for Quality Assurance, Codex Standards and R&D not to be continued under the Eleventh Five Year Plan
- The component of Strengthening of Codex Cell under Scheme for Quality Assurance, Codex Standards and R&D to be merged with the scheme for Setting up/ Upgradation of Quality Control/ Food testing Laboratory
- Scheme for Backward and Forward Integration not to be continued under the Eleventh Five Year Plan
- A new scheme for upgrading the safety and quality of street foods is proposed under the Eleventh Plan. It will have two components of 'Safe Food Towns' and 'Food Corner/ Food Court'.

A comparative summary of the revised proposals for Eleventh Five Year Plan vis-à-vis Tenth Plan Schemes are presented below:

Integrated Food Zones/ Mega Food Parks

Existing Scheme under Tenth Plan	Proposed Scheme under Eleventh Plan
Supply driven-not entrepreneur driven	Demand driven
Post marketed	Pre marketed
Stand-alone (no backward and forward linkages)	Strong backward and forward linkages-reliable and sustainable supply chain
No stake holder participation	To be implemented on PPP mode. SPV involving stakeholders to manage the Park-private entrepreneurs holding a minimum of 51% equity
No Project Development Agency	Project Management Agency (PM) (to handhold from concept to commissioning)
No financial closure	Financial closure to be ensured by the Project Management Agency
Targeting small & medium enterprises with a minimum of 20 units for a 30 acre park	No restriction on the number of units-restriction can be on the quantity of material to be handled
Activities confined to park alone	Complementary activities can take place out side the central park by creating the required infrastructure in a well-defined Zone to be finalised after a feasibility study.
Financial assistance 25% limited to Rs.4 Crore inadequate to create the appropriate infrastructure	Higher scale of assistance to meet 75% of the project cost with a ceiling of Rs. 50 Crore per park (Scale of assistance to be 90% in difficult areas). For more details Refer Chapter 2, Section 3.1.

Modernization of Abattoirs

	Existing Scheme under Tenth Plan	Proposed Scheme under Eleventh Plan
Financial Assistance	25% or 33.33% of the cost of plant and machinery/ TCW in general areas and difficult areas respectively with ceiling of Rs. 4.00 crores	The volumes of assistance be increased to 50% and 60% of the cost of plant and machinery/ TCW in general areas and difficult areas respectively with ceiling of Rs. 15.00 crores
Eligibility	The scheme can be availed only by local bodies	Apart from local bodies, JV and private players to be eligible for assistance
Project Management	There is no project development agency to handhold from concept to commissioning.	Project Management Agency to be appointed by MFPI to ensure delivery under the Scheme. For more details refer Chapter 2 Section 3.2

Cold Chain, Value Addition and Preservation Infrastructure Including Integrated Cold Chain And Strategic Distribution Centres

	Existing Scheme under Tenth Plan	Proposed Scheme under Eleventh Plan
Financial Assistance	25% of the cost in General Areas and 33.33% in difficult Areas. The maximum levels are different for different components. (separate ceiling for each component)	50% of the total cost of plant and machinery and technical civil work in general areas and 75% in special category states including UTs of Andaman & Nicobar/ Lakshdweep, subject to a maximum of Rs. 10 Crores for provision of Cold Chain, Value Addition Centres, Value Added Centres and Irradiation Centres No separate ceiling for each component
Cold Chain machinery/ equipments supported	CA/MA, reefer vans, mobile cooling units not assisted.	CA/MA, reefer vans, mobile cooling units also to be assisted under the project. Integrated Cold Chain and Strategic Distribution Centres also to be assisted
Sectors supported	Horticulture produce excluded for support under Integrated Cold Chain Facilities.	Horticulture produce to be included for support under Integrated Cold Chain Facilities. For more details refer Chapter 2 Section 3.3

Setting Up/ Upgradation of Quality Control Laboratory/ Food Testing Laboratory

	Existing Scheme under Tenth Plan	Proposed Scheme under Eleventh Plan
Financial Assistance	Central/ State Government organizations, IITs and Universities are eligible for grant-in-aid amounting to entire cost of the capital equipments required for setting up/ modernization of Laboratories. All other implementing agencies are eligible for grant in aid limited to 33% of the cost of capital equipment required for setting up/ upgradation of such laboratories for general areas and 50% for difficult areas.	Central/ State Government Organizations/ Universities may be considered for financial assistance of entire cost of lab equipments. In addition, they would also be eligible for 33% of the cost of civil works to house the equipments and furniture and fixtures associated with the equipments for general areas and 50% for difficult areas, required for setting up/up-gradation of such laboratories. All other implementing agencies may be considered for financial assistance of 90% of cost of laboratory equipments and 33% of the cost of civil works to house the equipments and furniture and fixtures associated with the equipments for general areas and 50% for difficult areas. For more details refer Chapter 5, Section 4.2

Promoting Adoption of TQM Including HACCP, ISO Standards, GMP, GHP etc.

	Existing Scheme under Tenth Plan	Proposed Scheme under Eleventh Plan
Financial Assistance	Central/State Government Organizations/ IITs and Universities provided financial assistance to the extent of 50% of the total cost of the project in general areas and 75% in difficult areas. The ceilings are Rs.10.00 lakhs and Rs.15.00 lakhs respectively.	All implementing agencies may be provided financial assistance to the extent of 50% of the project cost subject to a maximum limit of Rs. 15 lakhs for general areas and 75% of the project cost subject to a maximum of Rs. 20.00 lakhs for difficult areas respectively.
Pattern of Assistance	Financial assistance currently in the form of grant-in-aid.	The financial assistance in the form of “grant-in-aid” may be converted to “reimbursement”. For more details refer Chapter 5, Section 4.2

Research and Development in Processed Food Sector

	Existing Scheme under Tenth Plan	Proposed Scheme under Eleventh Plan
Financial Assistance	Under the existing Scheme, assistance in the form of grant-in-aid is provided to Central/ State Government Organizations/ IITs and Universities to the extent of 100% of the capital cost. For all other implementing agencies, the grant-in-aid is available up to 33% of the capital cost for general areas and 50% of the capital cost for difficult areas.	Central/ State Government Organizations/ Universities may be considered for financial assistance of 100% of the entire project cost as grant. Private sector organizations may be considered for 50 % of the entire project cost as grant. For more details refer Chapter 5, Section 4.3

Food Corner/ Food Court

	Existing Scheme under Tenth Plan	Proposed Scheme under Eleventh Plan
Financial Assistance	NA	The scheme would provide for grant outlay of up to Rs. 5 Crores for setting up/ upgrading the infrastructure of each food street project. The project expenses would include installation/upgradation of modern food stalls, benches, fountains, water supply and drainage, waste disposal system, public utilities, electrical appliances etc.
Implementation Structure	NA	The scheme would be operated through an implementing agency, which would be eligible to get 5 % of the entire project cost as implementation charges. There would be a high level Advisory Body formed by MFPI to oversee the implementation of the Schemes. The Advisory Body would be constituted of major shareholders including industry associations, food vendors' associations, local bodies and representatives of

	Existing Scheme under Tenth Plan	Proposed Scheme under Eleventh Plan
		Ministries of Urban Development & Poverty Alleviation, Panchayat Raj and Tourism. The Advisory Body may, in turn, constitute a Project Approval Committee for appraisal and approval of project proposals submitted under the said Scheme. For more details refer Chapter 5, sub-section 4.4.2

Safe Food Towns

	Existing Scheme under Tenth Plan	Proposed Scheme under Eleventh Plan
Financial Assistance	NA	The scheme would provide for funding of integrated projects which include bringing together of food vendors, development of training tools, sensitization and training programmes for vendors and introduction of modern food carts among food vendors. A financial assistance at the rate of 25% per cart is proposed to be made available to vendors. There would also be need of additional Rs. 15 Crores for capacity building and project implementation charges.
Implementation Structure	NA	The scheme would be operated through Implementing Agencies (IAs), which would be eligible to get 10 % of the entire project cost as implementation charges. Fore more details refer Chapter 5, sub-section 4.4.1

Estimated Impact on Employment Generation and Growth

The present proposal envisages an outlay of about Rs. 5000 Crores including Rs. 3700 Crores for infrastructure development. A matching private sector investment means a total provision for investment in infrastructure to Rs. 7400 Crore.

Assuming a leveraging ratio of 2.5, a total investment of Rs. 7400 Crores in infrastructure can lead to an investment of about Rs. 20,000 Crores in processing units.

Assuming creation of 140 jobs per Crore of investment in the organized sector, an investment of Rs. 20,000 Crore will lead to creation of 2,800,000 additional jobs.

Further, assuming a reasonable investment turnover ratio of 2, a total investment of Rs. 20,000 Crores over the Plan period would lead to an aggregate turnover/value of production of Rs. 40,000 Crores over the Plan period.

This would enhance the growth rate of the Food & Beverages Industry from the present 7% to around 10.01% over the next plan period.

The income levels of the affected farmers are also expected to go up by 20% over a period of 5 years by the way of better realization, value addition and integration of the supply chain. A variety of traders and industries are likely to be incentivised in the building of the supply chain, such as transporters, cold chain specialists, farmer groups, marketing and processing units and retailers.

However, all this would require a coordinated approach on policy issues. The issues meriting attention are Quantity and quality of raw material for processing, sector's access to bank credit , Need to move towards a single market for agricultural commodities and processed food, Need to remove multiple regulations, Tax structure (Introduction of VAT, Indirect taxes),Transport cost, Rural connectivity, Need to abolish APMC Act etc.

Proposed Financial Outlay

Component	Number of Units	Financial Outlay XIth Plan (Rs Crore)
Technology Upgradation/ Establishment, Modernization		600.00
Food Park PMA cost	30	1500.00 75.00
Modernised Abattoir PMA Cost	50	750.00 75.00
Cold Chain infrastructure Integrated Cold Chain and Strategic Distribution Centres	30	210.00 550.00
R&D Labs etc National level State level General HACCP	 84 5 29 50 500	60.00 74.00 100.00

Component	Number of Units	Financial Outlay XIth Plan (Rs Crore)
Street Food Food street	50,000	38.00 15.00 125.00
NIFTEM		244.00
Meat Board		10.00
Food Authority		50.00
Wine Board		10.00
PPRC up gradation		50.00
Schemes to be implemented without modifications Promotional Activities and Brand Building Human Resource Development Strengthening of Nodal Agencies		 100.00 100.00 130.00
Subvention of interest Zero cost capital fund		30.00 100.00
Implementation costs		10.00
Total		**5006.00**

An estimated investment of Rs. 100,000 Crores is required to achieve the goals as envisaged in Vision 2015 of MFPI. Of this, Rs. 10,000 Crore is expected to come from the Government, over the next two Five Year Plans. Keeping in line with this, the proposed outlay for the Eleventh Five Year Plan is Rs. 5006 Crores.

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Chapter 1: The Indian Food Processing Industry

1 Overview of the Food Processing Sector

The contribution of agriculture to India's GDP at the time of Independence was 70% and it accounted for 85% of total employment. The share of agriculture in the country's GDP has been gradually declining since then. At present, the contribution of agriculture to GDP is about 25%, but it still engages about 70% of the population. The annual average rate of growth of agricultural GDP has also declined from around 3.5% during mid-eighties to mere 1.5 % during 2006-07.

The increase in agricultural production has been achieved largely through increase in per hectare yield (about 70-75 %). In spite of these achievements in yield, productivity of many crops has been stagnating over the years, affecting production. The productivity of many crops is much lower than international standards with the exception of a few crops.

It is estimated that if the country has to maintain a GDP growth rate of over 8%, the agricultural sector has to grow at the rate of at least 4%. Thus, the agriculture sector continues to have a profound influence on the economic growth. The need to accelerate agricultural growth is also important to address issues of food security, nutrition adequacy, and generation of income and employment in rural areas.

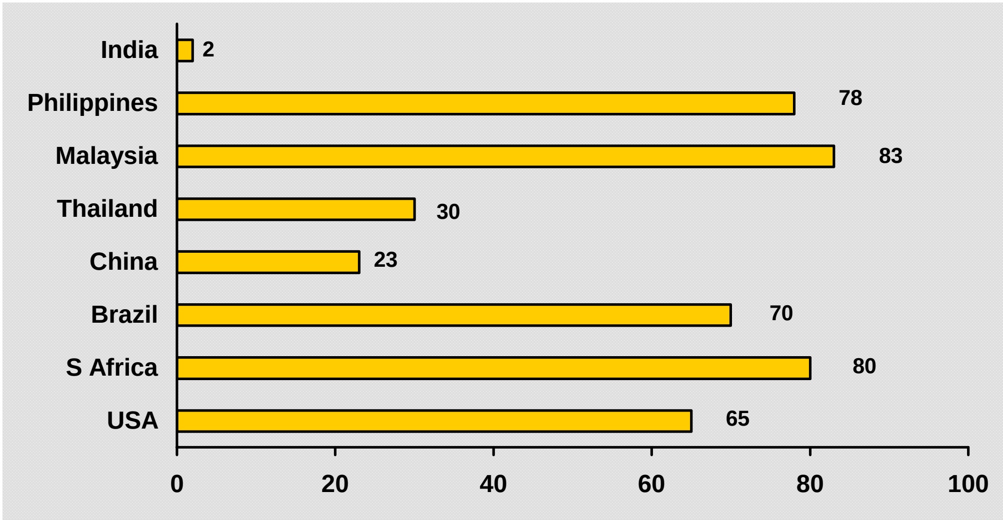
The country has a huge potential for growth in agriculture with about 160 million hectares of arable land and diverse agro climatic conditions, suitable for cultivation of a wide variety of crops.

While the productivity needs a definite improvement to keep pace with increasing demand for agriculture and horticulture produces by the growing population, agriculture development in the country will depend heavily on the agro/food-processing sector. It is increasingly becoming evident that only a vibrant food processing sector can lead to increasing farm gate prices and thus increasing income levels, reduction in wastages and increasing employment opportunities.

India currently produces about 50 million tonnes of fruits, which is about 9% of the world's production of fruits and 90 million tonnes of vegetables, which accounts for 11% of the world's vegetable production.

Though India has a strong raw material base, it has been unable to tap the potential for processing and value addition in perishables like fruits and vegetables. Only about 2 percent of the fruits and vegetables in India are processed, which is much lower when compared to countries like USA, China and others (Fig).

Processing of Fruits and vegetables in some countries



Even, within the country, share of fruits and vegetables processed is much less when compared to other agricultural products such as milk (35%) and Marine Products (26%).

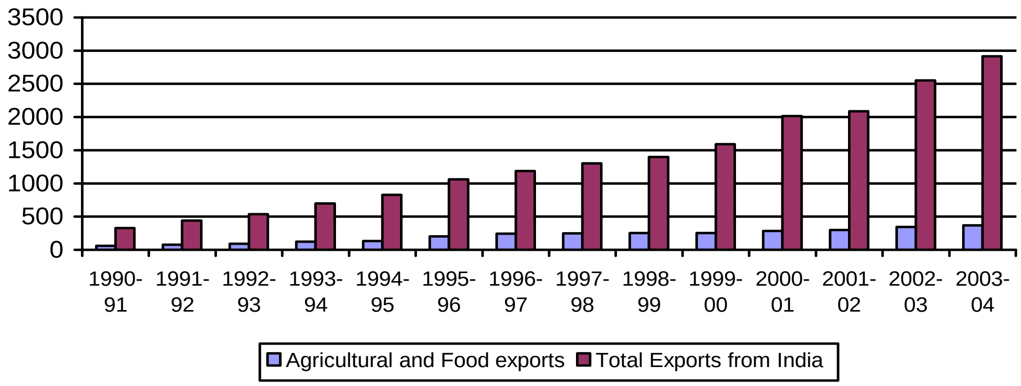
More importantly the lack of processing and storage of fruits and vegetables results in huge wastages estimated at about 35%, the value of which is approximately Rs.33,000 Crore annually.

A developed food processing industry would not only reduce the wastages, but would also increasingly fetch remunerative income to farmers which is another problem before the agriculture sector at present.

At present the food processing sector employs about 13 million people directly and about 35 million people indirectly. In 2004-05, food processing sector contributed about 14% of manufacturing GDP with a share of Rs 2,80,000 Crores. Of this, the unorganized sector accounted for more than 70% of production in terms of volume and 50 % in terms of value.

On the export front, India has 1.5% (INR 360 Bn. in 2003-04) share of global agricultural exports (approximately USD 522 Bn. or INR 24,000 Bn.), despite its leadership in agricultural production (see Fig below).

Exports: India's total vs. Agricultural and Food Products (INR Bn)



Source: Ministry of Commerce, Govt. of India

Indian exports primarily are of commodities (in raw form) and primary processed products, with low price realization. In addition, many products are showing single digit or negative growth.

1.1 Opportunities for Food Processing

Indian agriculture has the unique advantage of a large and varied raw material base for food processing. India can emerge as a leading food processor and supplier in the world if the advantages are leveraged optimally. With a population of 1.08 billion, growing at about 1.6 % per annum, India is a large and growing market for food products. Food products today are the single largest component of household consumption expenditure. The current food consumption in India is estimated at Rs 8,60,000 Crore (Table below) and is rapidly increasing.

Estimated Total Food Market in 2003-04 (Rs. Crore) at current prices

Description	Market Size (Rs. Crore)
Total food Consumption*	8,60,000
Processed foods**	4,60,000
Primary processed food (includes packed fruits and vegetables, packed milk, unbranded edible oil, milled rice, flour, tea, coffee, sugar, pulses, spices and salt)	2,80,000
Value-added foods (includes processed fruits and vegetables-juices, jams, pickles, squashes, concentrate; processed dairy products - ghee, paneer, cheese, butter, ethnic Indian products; branded edible oil; breads, biscuits, snack foods, pasta based foods; processed meat, poultry and marine products;	1,80,000

confectionery and chocolates; alcoholic beverages - beer, spirits, wine; aerated and malted beverages)	

*Excluding consumption of alcoholic beverages and out-of –home consumption

**Excluding out-of-home consumption but including alcoholic beverages and processing in unorganized sectors in dairy (halwais) and grain milling (chakkis)

Source: Vision 2015

The significant shift in India's demographic profile in favour of a younger population, increasing disposable (surplus) incomes and changing socio-economic environment, is set to change the food consumption pattern in favour of processed foods which are convenient, hygienic and of consistent quality.

1.1.1 Factors Driving Demand for Processed Foods

- **Changing age profile-** A relatively larger share of young population which has the ability to spend on processed foods
- **Increase in income-** The middle and upper middle income groups growing at a faster rate than in developed countries resulting in higher spending on food and also switching over to animal protein and processed foods from staples
- **Social changes-** Increasing number of working women
- **Life style factors-** Increasing health consciousness and need for convenience food
- **Organized Retail outlets-** These provide the much needed forward linkages

1.1.2 Employment Generation

Food processing sector generates significant employment. The multiplier effect of investment in food processing industry on employment generation is 2.5 times than in other industrial sectors, higher than any other sector. Even within food processing industry, the employment intensity is significantly higher in the unorganised sector as compared to the organized sector for the same level of investment.

Comparison of employment in organized vs. unorganised sector in F&V processing

	Organized sector	Unorganized Sector
Fixed Investment	Rs10 Million	Rs 0.2 Million
Output per year	500 tonnes	120 tonnes
Total Employment	140	21
Total employment for Rs. 10 Million of Investment	140	1050

Source: Vision 2015 MFPI

2 Constraints

While the food-processing sector offers several opportunities, it faces constraints as well, such as:

- Low income and the high share of basic food in the household consumption expenditure which acts as a deterrent in the growth of processed food sector
- Socio cultural factors such as preference in India for freshly plucked/cooked food, variation in food habits across the country, easy availability of raw materials for cooking, preference for consumption of food at home etc.
- Low productivity, high wastage
- Inadequate infrastructure for sorting, grading, packing etc. in addition to the high cost of raw material (at processor's level)
- APMC Act which restricts sourcing materials from farmers
- Lack of a common policy on Contract farming
- Lack of trained man power for various stages of processing, storage, marketing and branding
- Lack of access to modern technology
- Low share of sale of food products through organized retail, which are the usual drivers of quality, scale and integration. Globally 72 %, or more of food sales, is through organized retail. Share in India is just one percent. The high proportion of unorganized sale leads to low product quality, low hygiene levels and safety
- Access to Credit for farmers as well as small and medium food processors is a key issue. Over 75% rely on informal credit at very high interest rates leading to increase in cost of production affecting competitiveness
- Inability to attract investment by large corporate houses who complain of unreliable sources of supply of raw material
- Inability to induce investor confidence
- Low inflow of Foreign Direct Investment, in spite of the permission for 100% FDI in the food processing sector (except in food retailing, alcoholic beverages and plantations)
- Inability of Government Schemes to have the desired impact on productivity, technology and market arrivals
- Advantages of low price at farm gate for raw materials not available to processors, affecting international competition. As can be seen from Table below, while price of apple in India is low, India is not competitive when it comes to apple juice.

Competitiveness of Indian Apple Juice Sector

Country	Price of Apple Juice (Rs. per kg.)	Price of Apple (Rs. per kg.)
USA	57	26
Argetina	51	20

Germany	48	22
China	33	10
India	50	18

3 Thrust Areas

The vision 2015 of the Government of India for the food processing sector aims at:

- Enhancing and stabilizing the income level of the farmers
- Providing choice to consumers in terms of greater variety and taste including traditional ethnic food
- Providing greater assurance about safety and quality of food to consumers
- Promoting a dynamic food processing industry
- Enhancing the competitiveness of food processing industry in both domestic as well as international markets
- Making the sector attractive for both domestic and foreign investors
- Achieving integration of the food processing infrastructure from farm to market
- Having a transparent and industry friendly regulatory regime
- Putting in place a transparent system of standards based on science

The specific targets would be to increase:

- The level of processing of perishables from 6% to 20%
- Value addition from 20% to 35%
- Share in global food trade from 1.5% to 3%, by 2015

An estimated investment of Rs. 100,000 Crores is required to achieve the above Vision of which Rs. 45,000 Crores is expected to come from the private sector, Rs. 45,000 Crores from Financial Institutions and Rs. 10,000 Crore from Government.

4 Existing Tenth Plan Schemes

The MFPI has been implementing several schemes for the development of food processing in the country which are as follows:

- Scheme for Infrastructure Development
- Scheme for Technology Upgradation /Establishment /Modernization of Food Processing Industries
- Scheme for Quality Assurance, Codex Standards and Research & Development
- Scheme for Human Resource Development
- Scheme for Strengthening of Nodal Agencies
- Scheme for Backward and Forward Integration and other Promotional Activities

The salient features of the various schemes are as presented below:

Scheme/ Component	Salient features
Scheme for Infrastructure Development	
Food Park	Grant in aid of 25% of the project cost upto a maximum of Rs.4 Crore (In NE region quantum of assistance increases to 33.3% of the project cost). Grant covers common facilities like common processing/ packaging, cold storage, food testing and analysis lab, effluent treatment plant, power, water etc.
Packaging Centre	25% of the total cost of plant upto a maximum of Rs. 2 Crore (In NE region assistance increases to 33.3.%)
Integrated Cold Chain Facilities	25% of the total cost of plant upto a maximum of Rs.75 lacs (in NE region assistance increases to 33.3%). Assistance for non horticulture produce, special cold storage with Controlled and Modified Atmosphere facility
Value Added Centre	25% of the total cost of plant upto a maximum of Rs.75 lacs (in NE region assistance increases to 33.3.%). Assistance for enhancing shelf life, documentation etc.
Irradiation Facilities	25% of the total cost of plant upto a maximum of Rs. 5 Crore (in NE region assistance is 33.3.%) for preservation, preventing infestation, sprouting etc.
Modernised Abattoir	25% of the total cost of plant upto a maximum of Rs. 4 Crore (in NE region assistance is 33.3%)
Scheme for Technology Upgradation/ Establishment/ Modernization of Food Processing Industries	
Technology Upgradation/ Establishment/ Modernization of Food Processing Industries	25% and 33.33% of the cost of plant and machinery/TCW in general areas and difficult areas respectively with ceiling of Rs. 50 lakhs and Rs. 75 lakhs respectively.
Scheme for Quality Assurance, Codex Standards and Research and Development	
Setting Up/ Upgradation of Quality Control/ Food Testing Laboratory	Central/State Govt. organizations, IITs and Universities eligible for grant-in-aid limited to the entire cost of the capital equipments required for setting up/ modernization of laboratories. All other implementing agencies eligible for grant in aid limited to 33% of the cost of capital equipment required for setting up/up-gradation of such laboratories for general areas and 50% for difficult areas.
Total Quality Management	For implementation of Hazard Analysis and Critical Control Points (HACCP), ISO 9000, ISO14000, Good Manufacturing Practices (GMP) and Good Hygienic Practices (GHP), Central/State Government Organizations/ IITs and Universities are provided financial assistance to the extent of 50% of the total cost of the project in general areas and 75% in difficult areas. The ceilings are Rs.10.00 lakhs and Rs.15.00 lakhs respectively. Financial Assistance is in the form of grant-in-aid.
Bar Coding	To popularize the concept of bar coding system following National/ International standards and to encourage food processors to affix bar codes on their processed food packages, Central and State Government Organizations, IITs and

Scheme/ Component	Salient features
	Universities are eligible for grant-in-aid of 50% of the registration fees to be paid to EAN-India and 50% of the cost of capital equipment subject to a maximum of Rs. 3 lakhs. All other implementing agencies are eligible for grant-in-aid of 50% of the registration fees to be paid to EAN-India and 33% of the cost of capital equipment subject to a maximum of Rs. 3 lakhs for General Areas and 50% subject to a maximum of Rs. 3 lakhs in Difficult Areas.
Codex Cell	To strengthen/setting up Codex cell in the Ministry as well as at the point of various stakeholders such as Central/ State Government Organizations, National Research Institutions and leading Agricultural Universities, IITs and Universities who can serve as centres of excellence around problem areas of Codex Standards are eligible for grant-in-aid of 100% upto Rs. 10.00 lakhs in general areas and Rs. 15.00 lakhs in difficult areas. All other Implementing Agencies are eligible for grant-in-aid of 33% subject to a maximum of Rs. 10 lakhs for General Areas and 50% subject to a maximum of Rs. 15 lakhs for Difficult Areas.
Research and Development in Processed Food Sector	Assistance in the form of grant-in-aid is provided to Central/ State Government Organizations/ IITs and Universities to the extent of 100% of the capital cost. For all other implementing agencies, the grant-in-aid is available up to 33% of the capital cost for general areas and 50% of the capital cost for difficult areas.
Scheme for Human Resource Development	
Setting up of Food Processing and Training Centre (FPTC)	Central and State Government organizations, educational and training institutions, NGOs, cooperatives are eligible for assistance. The following Grant-in aid is provided ▪ For Single Product Line centre (for any one group of processing activities)- Rs. 2 lakhs for fixed capital costs and Rs. 1 lakh as revolving seed capital ▪ For Multi Product Line centre- Rs. 7.50 lakhs for fixed capital costs and Rs. 2 lakhs as revolving seed capital For training the trainers at recognized institute such as CFTRI- Upto Rs. 0.50 lakh, one time assistance, subject to actuals on TA/DA etc.
Creation of Infrastructure Facilities for running Degree/ Diplomas Courses and Training Programmes for Food Processing Industries	Provides assistance for library, laboratory, pilot plants etc. for running Degree/ Diploma Courses and Training Programmes for Food Processing. HRD institutions such as colleges, universities, technical institutions etc. can avail grant upto Rs. 50 lakhs under the scheme.
Training Programmes sponsored by Ministry of Food Processing Industries	Grants are provided to institutions organizing trainings in the area of food processing. Quantum of assistance depends on number of trainees and duration of training.
Entrepreneurship Development programme	Entrepreneurship Development Programme aims at enabling potential entrepreneurs to take up food processing project. Maximum assistance of Rs. 1 lakh available per EDP. The programme should run for atleast 4 weeks with a follow-up phase

Scheme/ Component	Salient features
	of 12 months and number of trainees should not be less than 20.
Scheme for Strengthening of Nodal Agencies	
Strengthening of Nodal Agencies	Provides support for installation of office hardware, collection of detailed field information, preparation of database, monitoring of assisted projects and coordination of agro food business. Lump sum grant of Rs. 5 lakhs may be availed for purchase of basic office equipment. Further lump sum grant of Rs. 5 lakhs may be considered after a gap of 5 years. Additional grant upto Rs. 1 lakh per year may be provided per Nodal Agency for meeting the expenses for engaging personnel for preparing database, publication of profiles, office consumables etc.
Scheme for Backward and Forward Integration and other Promotional Activities	
Backward Linkage	To increase capacity utilization of Food Processing Industry by ensuring regular supply of raw material through contract farming, incentives in the form of reimbursement will be made available upto 10% of the total purchases made by processors in a year, limited to Rs. 10 lakhs in a year for a maximum period of three years.
Forward Integration	To increase capacity utilization of Food Processing Units by ensuring regular market for their products by establishing linkages with the market. Assistance under the scheme would be available for market survey, test marketing, brand building etc. @ 50% of the cost of campaign subject to a maximum of Rs. 50 lakhs will be provided.
Generic Advertisement	To build awareness among the consumers about the advantages of processed food and their quality assurance mechanism. This would also seek to encourage marketing promotion campaign for new products mix and brand name support. Dissemination of information about the processed food industry through publications, journals, press advertisements would also be carried out through generic advertisement. The Ministry will carry out entire campaign.
Promotional Activities	For seminars/workshops/symposiums, agencies will be eligible for 50% of the cost subject to a maximum of Rs. 1 lakh. However, when the Ministry co-sponsors the event there will be no ceiling on the upper limit. For studies/ surveys/ feasibility reports to assess the potential and other relevant aspects of Food Processing Industries on sectoral and regional basis, the concerned agency would be eligible for assistance of upto 50% of the cost subject to a maximum of Rs. 3 lakhs. However, when the Ministry commissions the study/ survey, there will be no ceiling on the upper limit. The Ministry in close association with APEDA, CFTRI, Industry Associations etc. will participate in national/ international exhibitions/ fairs. In this regard, assistance may be provided for publication of literature, space rentals etc. The quantum of assistance would depend on the merits of proposal. For participation in fairs/ exhibitions abroad, assistance of 25% of

Scheme/ Component	Salient features
	rental space may be provided to government/ government organizations subject to a maximum of Rs. 20 lakhs.
Strengthening of F&VP Directorate	One time grant of Rs. 5 lakhs will be provided per designated agency of State Government for modernisation and e-governance. A provision of Rs. 5 lakhs per annum for each of the 4 sub-regional offices is made to enable them to adopt modern methods including computerization, testing of samples etc.
Strengthening of Industry Associations	Financial assistance based on actuals subject to a maximum of Rs. 2 lakhs will be provided for infrastructure to collect and continuously support information like installed capacity, capacity utilization, production, actual employment generation etc. by all India level industry association.
Food Fortification	Grant @ 50% of the cost of capital equipment and its installation charges upto Rs. 3 lakhs in all area will be provided for fortification of wheat flour, existing industries/ mills will be provided
Performance award	To provide encouragement/ recognition to outstanding achievements of the units in the food processing sectors and for augmenting efficiency through healthy competitive spirit through annual awards. Grant-in-aid will be provided to National Productivity Council which has been designated Agency for the purpose of implementation of the scheme.

5 Review of Existing Schemes

In general, the performance of Tenth Plan Schemes has not been very encouraging. A review of the financial targets and expenditures under various Tenth Plan Schemes shows that the aggregate disbursement under various schemes has been low at Rs. 388 Crore till September 2006 against a budgeted amount of Rs. 650 Crores for all the schemes.

Financial Targets and Actual Expenditures under various Schemes during the Tenth Five Year Plan														
	2002-2003		2003-2004		2004-2005		2005-2006			2006-07			
	BE	Actual exp.	BE	Actual exp.	BE	Actual exp.	BE	RE	Actual Exp.	BE	Actual Exp. (till Sep.06)	Total BE	Total Actual Expenditure
Scheme for Infrastructure Development	29	30.6	29	13.7	34	11.8	49	10	15.7	22	3.5	124	75.3
Scheme for Technology Upgradation, establishment and Modernisation of Food Processing Industries	9	20.1	14	34.9	35	51.1	49	68.4	69.8	97	20.4	223.4	196.3
Scheme for backward and Forward Integration and other Promotional Activities	5	2.6	7	2.6	7	4	7	9	9	10	1	38	19.2
Scheme for Quality Assurance, Codex Standards and Research and Development	10.5	11.9	7.5	4	6	3	10	10	12.4	12	7.9	46	39.2
Scheme for Human Resources Development	4.5	4.5	4.7	4.7	7	6.5	37	19	7.4	16.9	17	52.1	40.1
Scheme for Strengthening of Institutions	9.5	3.3	5.3	4	10	4	10	6	5.4	9	1.5	39.8	18.2
Lump sum provision for North East and Sikkim	7.5	(7.5)*	7.5	(6.45)*	11	(4.94)*	18	13.6		(16.7)*	0.7	56.3	19.59
Total	**75**	**73**	**75**	**63.8**	**110**	**80.4**	**180**	**136**	**119.7**	**166.9**	**52**	**523.3**	**388.3**

* Expenditure incurred under provision for North-Eat is included in the above respective schemes

The following table shows that physical targets have also not been achieved in respect of Scheme for Backward and Forward Integration and other Promotional Activities and Scheme for Quality Assurance, Codex Standards and Research and Development.

Physical Target and Performance of Schemes during the Tenth Five-Year Plan

Name of Scheme/ Programme	2002-03		2003-04		2004-05		2005-06		2006-07		Tenth Plan Target	Tenth Plan Achieve-ment
	Target	Achieve-ment	Target	Achieve-ment	Target	Achieve-ment	Target	Achieve-ment	Target	Achieve-ment		
Scheme for Infrastructure Development	5	14	5	6	5	10	30	12	19	8	25	48
Scheme for Technology Upgradation, establishment and Modernisation of Food Processing Industries	30	72	60	96	90	185	164	266	300	78	644	6970
Scheme for Backward and Forward Integration and other Promotional Activities	39	28	47	50	55	55	55	28	60	17	230	1780
Scheme for Quality Assurance, Codex Standards and Research and Development	23	13	35	18	35	17	20	25.0	18	8	190	81
Scheme for Human Resources Development	55	63	70	278	85	324	115	224	130	47	400	936
Scheme for Strengthening of Institutions	No Target fixed.											

5.1 Review of projects assisted by the Ministry of Food Processing Industries (MOFPI) during the Tenth Plan Period

An evaluation study of food processing units/ government agencies/ other implementing agencies assisted under the various schemes of MFPI during 2002-03 to 2004-05, were carried out in the four zones viz. North, South, East and North-east by independent agencies. Some of the salient findings from the study are as follows:

North India

In all information from 132 units were received and analysed. The food processing units/ government agencies and other agencies were categorized into production (including flour and rice mills, meat processing plants, fruit and vegetable processing and snack food industry), non-production (including those who are either imparting training programmes or have installed pilot plants) and R&D units. The results indicated that:

- Most rice and flour mills have shown high utilization of grants received from MFPI.
- FTPCs and EDPs did not report full utilization of grant. However most of the remaining grants were either committed or in the pipeline for expenditure.
- Non-production and R&D units have also fully expended grants given to them.
- Most production units have established strong backward and forward linkages. However, linkages in R&D units are still weak. Only those R&D units with established commercial activity have established backward and forward linkages
- In a total of 87 production units that were included in the study, direct employment generated was 5846 and indirect employment generated was 114387. Thus 67 direct and 1315 indirect employment per unit were generated.
- Direct employment generation in R&D units were not high as they require government sanctions and need to fulfill other formalities before jobs can be created.
- Barring a few exceptions, most production and non-production units have fully utilised the grant as per the purpose for which it was intended.
- Some rice mills, snack foods and frozen food units are exporting their finished products. Many of these units need continuation of grant to meet international quality standards to compete in the global market.
- Less than 5% of the production units were found to have quality monitoring systems in place.
- Training facilities and infrastructure created with assistance from MoFPI were found to have been effectively utilised for training of farmers, postgraduate students and entrepreneurs in food processing universities.
- Most food processing units did not have any waste management systems.
- Release of installments were delayed in many cases. As a result these units had to take loans to implement the project.
- Other constraints faced by the Food Processing Industries established with grant from MoFPI include difficulties in getting power connection, difficulties in obtaining local licenses etc.

South Zone

Information from all the 167 projects provided assistance (which include processing units, FPTCs, R&D institutions) were received and analysed. The results showed that:

- 62.31% of the grants provided by MFPI went to three sectors viz. rice milling (22.29%), deep sea fishing and fish processing (21.34%) and fruit and vegetable processing (18.68%) sectors.
- 53.71% of the total grants were utilised by units having perishables as raw material while the remaining 46.29% were utilised by the non-perishable sector.

- The employment generated per lakh of grant provided was 2 direct and 8 indirect. Therefore 10 people were employed per lakh of grant provided.
- Milk processing sector created the highest employment of 34 per lakh of subsidy provided. Oil and rice milling sectors also contributed to better employment creation of 14 and 13 respectively per lakh of subsidy provided.

East Zone

- As far as utilization of grants is concerned, majority of the grants provided went to the confectionery sector in Eastern India. Profit margins are generally low, with some units even registering losses. One unit had to close down due to lack of funds resulting from delay in release of installments.
- Most R&D institutes have utilised the grants provided for the purpose of creating infrastructure.
- Employment creation in production units was to the extent of 5 per lakh of grant provided (3 direct and 2 indirect).
- Only 4 of the 24 production units studied were exporting their products.

North Eastern Zone

- Majority of the grants is availed by the 4 states of Assam, Manipur, Mizoam and Tripura.
- Of the 60 production units surveyed, maximum assistance was utilised by the F&V sector (21%), followed by the fisheries sector (13%).
- 80% of the production units surveyed were running successfully.
- Though Infrastructure sector has taken the major chunk of the grants (43%), Infrastructure projects including the 5 Food Parks sanctioned are yet to see the light of the day.
- 85% of the fish processing units are located in Manipur, other states like Assam are yet to take up such projects.
- 32% of the total grants provided were utilised by perishables while the non-perishable sector utilised only 20% of the total grants provided by MFPI.
- Employment generation per Rs. 10 lakh of grant provided is 6.
- A grant of Rs. 4700 lakhs has brought in an additional investment of Rs. 8941 lakhs

The main reasons for poor performance of some of the unit are:

- Lack of entrepreneurship and wrong selection of projects
- No forward linkages and lack of a developed market
- Non availability of bank finance for working capital
- Poor transport facilities
- Prevailing insurgency in the region

5.2 Review of the Food Park Scheme

A comprehensive review of the existing schemes is the pre-requisite for formulation of new scheme/intervention. Two separate studies of the Food Park Scheme were also commissioned by MFPI. A Diagnostic-cum Evaluation Study and Revitalization Plan of 10 Food parks for the Ministry of Food Processing Industries has pointed out following major reasons for the poor functioning of parks:

- Location & Site related problems including cost
- Delay in providing basic infrastructure facilities like Power, Water, Road etc.
- Delay in Financial assistance
- Lack of Entrepreneurial awareness and interest and aggressive promotional efforts
- Lack of a comprehensive project report from the raw material supply chain to the market assessing infrastructure needs at every stage
- Absence of a competent proposal evaluation.

The Study recommended engaging reputed infrastructure development and finance agencies such as IL&FS / IDFC for evaluation of the proposals.

Yet another review pointed out that the financial assistance provided under the scheme has not been adequate and focused enough, either to attract major private investments or to help the small and medium enterprises. The schemes implemented by other Ministries for various sectors carry higher rates subsidy as compared to Infrastructure scheme of MFPI. Activities within the park cannot be as stand-alone as that has happened in the present case. Absence of strong backward linkages, realistic need assessment and inadequate investment have also contributed to lack of success of the scheme.

The study concluded suggesting that the Food Park will be successful only if infrastructure for (1) On Farm Storage (2) Primary Processing (3) Minimal Processing (4) Retail Outlet (5) Mobile Processing Unit (6) Mobile Pre-cooling Unit (7) Packaging Centre (8) Palletisation is provided in the Park.

All these studies have brought out several infirmities in the present system of implementation of the schemes, which include:

- Lack of strong project management capacity
- Unrealistic project planning and appraisal
- Little involvement of the stakeholders.
- Lack of attention to integrating the supply chain
- Neglect of marketing and brand building
- Inability to synergize the potential private investments within the rural sector

6 Proposals for Eleventh Five Year Plan

It is important to note that while physical targets may have been achieved under some of the Schemes, the ground realities present a different picture. Though the Ministry of Food

Processing Industry (MFPI) has supported development of 54 Food Parks in the country since the Eighth Five Year Plan period, most of them are yet to be operational. Against a physical target of 25 Parks during the 10^{th} Plan, 18 Parks have been sanctioned so far. Of these, only 8 Food Parks may be said to be operational. Even those operational are facing problems of gross under utilization, besides being unable to attract entrepreneurs. Only 28 units are currently in operation in these 8 Parks. Again, only 1 project has been supported under the Scheme for Modernization of Abattoir during the current Plan. And though 18 projects may have been supported under cold chain facilities and 5 under Value Added Centres, only 4 Cold Storages and 2 Value Added Centres are currently operational.

A paradigm shift is, therefore, required in implementation of the various schemes to achieve the targets under the Vision 2015.

Taking note of this, five sub-groups were constituted by the Ministry of Food Processing Industries on the various sub sectors of Food Processing Industries and areas pertinent for the growth of the sector as follows:

- Sub-group on Meat, poultry, fisheries and dairy
- Sub-group on Fruits and Vegetables, Wine and Beer
- Sub-group on Infrastructure
- Sub-group on Taxation and Finance
- Sub-group on R&D, HRD, Labs and Standards

Two rounds of meetings of the sub-groups were held between 25^{th}-28^{th} August and 13^{th}-18^{th} September.

Based on discussions with stakeholders in sub-group meetings and consultations with domain/ sectoral experts, and based on the reviews of various schemes carried out by independent agencies, it is proposed to revise the current strategy for the food processing sector. The following strategy is proposed for the Food Processing Industry.

6.1 Proposed Strategy

While some of the schemes under Tenth Five Year Plan will continue during the Eleventh Five Year Plan, they need to be restructured with appropriate management/implementation arrangements in Public Private Partnership mode, with strong Project Implementation capabilities. Also it is proposed to decentralize the Scheme for Technology Upgradation and operate it through Nodal Banks in place of State Nodal Agencies to provide back-ended credit linked subsidy.

The new integrated approach not only addresses issue of financial assistance but also the following issues:

- Skill development,
- Entrepreneurship
- Investment
- Institutional Development
  - Providing a policy environment which stimulates growth

Core elements of the proposed strategy are:

- Better project selection, development and implementation
- Decentralized cluster based development, particularly for creation of infrastructure and fostering linkages to retail outlets.
- Industry led capacity building and upgradation of standards
- An integrated food law and science based food standards.
- Strategic intervention with redesigned schemes and strong implementation arrangements at the following points
    - Food Parks- carefully planned, cluster based, privately driven
    - Abattoirs- publicly owned and privately managed
    - Cold chains- integrated cold chain facilities and strategic distribution centres
    - Street Food- upgrading quality and hygiene in the cities/towns
    - Wine Policy- liberalized, leveraging the agri/horticultural surpluses
    - Testing & certification labs- both public and private
- Importantly, the Ministry has to be strengthened appropriately, to meet the challenges in implementing various new initiatives proposed for energizing the food processing sector in the country.

6.2 Priority Areas for Intervention

The priority areas identified for intervention therefore are:

- Infrastructure development
- The food park scheme is proposed to be modified into a scheme for an Integrated Food Zone/Mega Food park
- Modernization of Abattoirs and setting up of National Meat Board
- Cold Chain, Value Addition and Preservation infrastructure (Cold storages, Reefer vans etc.)
- Irradiation Centres
- Research and development – Products, Technology, Quality and Skills
- Capacity Building – Human Resource Development, Research & Development, Quality, Safety, Related Infrastructure
- Implementation of Food Safety and Standards Act, 2006.
- Establishment of NIFTEM
- Modernization of PPRC, Thanjayur into a National Crop Processing Center
- Upgrading safety and quality of street food and establishing food streets in identified cities
- Wine Sector Development- Establishment of Wine Board

6.3 Framework of Revised Proposals

Based on the review of Tenth Plan schemes, it is proposed that all existing schemes be continued under the Eleventh Plan with or without modifications. However, certain components under some of the schemes are proposed to be merged or discontinued as follows:

- The components of Packaging Centre, Cold Chain Facilities, Value Added Centres and Irradiation Facilities under the Scheme of Infrastructure Development may be merged into a single component.
- The component of Bar Coding under scheme for Quality Assurance, Codex Standards and R&D not to be continued under the Eleventh Five Year Plan
- The component of Strengthening of Codex Cell under Scheme for Quality Assurance, Codex Standards and R&D to be merged with the scheme for Setting up/ Upgradation of Quality Control/ Food testing Laboratory
- Component for Backward and Forward Integration to be discontinued under the Eleventh Five Year Plan

A new scheme for upgrading the safety and quality of street foods is proposed under the Eleventh Plan. It will have two components of 'Safe Food Towns' and 'Food Corner/ Food Court'.

A summary of the framework of revised proposals for Eleventh Five Year Plan are presented below:

6.3.1 Integrated Food Zones/ Mega Food Parks

Existing Scheme under Tenth Plan	Proposed Scheme under Eleventh Plan
Supply driven-not entrepreneur driven	Demand driven
Post marketed	Pre marketed
Stand-alone (no backward and forward linkages)	Strong backward and forward linkages-reliable and sustainable supply chain
No stake holder participation	To be implemented on PPP mode. SPV involving stakeholders to manage the Park-private entrepreneurs holding a minimum of 51% equity
No Project Development Agency	Project Management Agency (PM) (to handhold from concept to commissioning)
No financial closure	Financial closure to be ensured by the Project Management Agency
Targeting small & medium enterprises with a minimum of 20 units for a 30 acre park	No restriction on the number of units-restriction can be on the quantity of material to be handled

Existing Scheme under Tenth Plan	Proposed Scheme under Eleventh Plan
Activities confined to park alone	Complementary activities can take place out side the central park by creating the required infrastructure in a well-defined Zone to be finalised after a feasibility study.
Financial assistance 25% limited to Rs.4 Crore inadequate to create the appropriate infrastructure	Higher scale of assistance to meet 75% of the project cost with a ceiling of Rs. 50 Crore per park (Scale of assistance to be 90% in difficult areas). For more details Refer Chapter 2, Section 3.1.

6.3.2 Modernization of Abattoirs

	Existing Scheme under Tenth Plan	Proposed Scheme under Eleventh Plan
Financial Assistance	25% or 33.33% of the cost of plant and machinery/ TCW in general areas and difficult areas respectively with ceiling of Rs. 4.00 crores	The volumes of assistance be increased to 50% and 60% of the cost of plant and machinery/ TCW in general areas and difficult areas respectively with ceiling of Rs. 15.00 crores
Eligibility	The scheme can be availed only by local bodies	Apart from local bodies, JV and private players to be eligible for assistance
Project Management	There is no project development agency to handhold from concept to commissioning.	Project Management Agency to be appointed by MFPI to ensure delivery under the Scheme. For more details refer Chapter 2 Section 3.2

6.3.3 Cold Chain, Value Addition and Preservation Infrastructure Including Integrated Cold Chain And Strategic Distribution Centres

	Existing Scheme under Tenth Plan	Proposed Scheme under Eleventh Plan
Financial Assistance	25% of the cost in General Areas and 33.33% in difficult Areas. The maximum levels are different for different components. (separate ceiling for each component)	50% of the total cost of plant and machinery and technical civil work in general areas and 75% in special category states including UTs of Andaman & Nicobar/ Lakshdweep, subject to a maximum of Rs. 10 Crores for provision of Cold Chain, Value Addition Centres, Value Added Centres and Irradiation Centres No separate ceiling for each component
Cold Chain	Reefer vans, mobile cooling	CA/MA, reefer vans, mobile

	Existing Scheme under Tenth Plan	Proposed Scheme under Eleventh Plan
machinery/ equipments supported	units not assisted.	cooling units also to be assisted under the project. Integrated Cold Chain and Strategic Distribution Centres also to be assisted
Sectors supported	Horticulture produce excluded for support under Integrated Cold Chain Facilities.	Horticulture produce to be included for support under Integrated Cold Chain Facilities. For more details refer Chapter 2 Section 3.3

6.3.4 Setting Up/ Upgradation of Quality Control Laboratory/ Food Testing Laboratory

	Existing Scheme under Tenth Plan	Proposed Scheme under Eleventh Plan
Financial Assistance	Central/ State Government organizations, IITs and Universities are eligible for grant-in-aid amounting to entire cost of the capital equipments required for setting up/ modernization of Laboratories. All other implementing agencies are eligible for grant in aid limited to 33% of the cost of capital equipment required for setting up/ upgradation of such laboratories for general areas and 50% for difficult areas.	Central/ State Government Organizations/ Universities may be considered for financial assistance of entire cost of lab equipments. In addition, they would also be eligible for 33% of the cost of civil works to house the equipments and furniture and fixtures associated with the equipments for general areas and 50% for difficult areas, required for setting up/up-gradation of such laboratories. All other implementing agencies may be considered for financial assistance of 90% of cost of laboratory equipments and 33% of the cost of civil works to house the equipments and furniture and fixtures associated with the equipments for general areas and 50% for difficult areas. For more details refer Chapter 5, Section 4.2

6.3.5 Promoting Adoption of TQM Including HACCP, ISO Standards, GMP, GHP etc.

	Existing Scheme under Tenth Plan	Proposed Scheme under Eleventh Plan
Financial Assistance	Central/State Government Organizations/ IITs and Universities provided financial assistance to the extent of 50% of the total cost of the project in general areas and 75% in difficult areas. The ceilings are Rs.10.00 lakhs and Rs.15.00 lakhs respectively.	All implementing agencies may be provided financial assistance to the extent of 50% of the project cost subject to a maximum limit of Rs. 15 lakhs for general areas and 75% of the project cost subject to a maximum of Rs. 20.00 lakhs for difficult areas respectively.
Pattern of Assistance	Financial assistance currently in the form of grant-in-aid.	The financial assistance in the form of "grant-in-aid" may be converted to "reimbursement". For more details refer Chapter 5, Section 4.2

6.3.6 Research and Development in Processed Food Sector

	Existing Scheme under Tenth Plan	Proposed Scheme under Eleventh Plan
Financial Assistance	Under the existing Scheme, assistance in the form of grant-in-aid is provided to Central/ State Government Organizations/ IITs and Universities to the extent of 100% of the capital cost. For all other implementing agencies, the grant-in-aid is available up to 33% of the capital cost for general areas and 50% of the capital cost for difficult areas.	Central/ State Government Organizations/ Universities may be considered for financial assistance of 100% of the entire project cost as grant. Private sector organizations may be considered for 50 % of the entire project cost as grant. For more details refer Chapter 5, Section 4.3

6.3.7 Food Corner/ Food Court

	Existing Scheme under Tenth Plan	Proposed Scheme under Eleventh Plan
Financial Assistance	NA	The scheme would provide for grant outlay of up to Rs. 5 Crores for setting up/ upgrading the infrastructure of each food street project. The project expenses would include installation/upgradation of

	Existing Scheme under Tenth Plan	Proposed Scheme under Eleventh Plan
		modern food stalls, benches, fountains, water supply and drainage, waste disposal system, public utilities, electrical appliances etc.
Implementation Structure	NA	The scheme would be operated through an implementing agency, which would be eligible to get 5 % of the entire project cost as implementation charges. There would be a high level Advisory Body formed by MFPI to oversee the implementation of the Schemes. The Advisory Body would be constituted of major shareholders including industry associations, food vendors' associations, local bodies and representatives of Ministries of Urban Development & Poverty Alleviation, Panchayat Raj and Tourism. The Advisory Body may, in turn, constitute a Project Approval Committee for appraisal and approval of project proposals submitted under the said Scheme. For more details refer Chapter 5, sub-section 4.4.2

6.3.8 Safe Food Towns

	Existing Scheme under Tenth Plan	Proposed Scheme under Eleventh Plan
Financial Assistance	NA	The scheme would provide for funding of integrated projects which include bringing together of food vendors, development of training tools, sensitization and training programmes for vendors and introduction of modern food carts among food vendors. A financial assistance at the rate of 25% per cart is proposed to be made available to vendors. There would also be need of additional Rs. 15 Crores for capacity building and project

	Existing Scheme under Tenth Plan	Proposed Scheme under Eleventh Plan
		implementation charges.
Implementation Structure	NA	The scheme would be operated through Implementing Agencies (IAs), which would be eligible to get 10 % of the entire project cost as implementation charges. Fore more details refer Chapter 5, sub-section 4.4.1

The details of proposed modifications and new interventions are given in the following chapters, under reports of the various sub-groups as given below:

Chapter 2: Sub-group report on Infrastructure
Chapter 3: Sub-group report on Meat, Poultry, Fisheries and Dairy
Chapter 4: Sub-group report on Fruits and Vegetables, Wine and Beer
Chapter 5: Sub-group report on R&D, Labs and Standards
Chapter 6: Sub-group report on HRD, PPRC and NIFTEM
Chapter 7: Sub-group report on Taxation and Finance

7 Focus on North Eastern Regions, SC/ ST and Gender

7.1 North Eastern Regions

Development activities in the north-eastern region warrants a special approach considering the various infirmities confronting the region. Remoteness, low level of awareness and literacy and socio-political disturbances in the region act as a deterrent for development activities in general. The case of Food Processing sector is also not different. As most of the activities envisaged in the Eleventh Plan proposals are to be carried out in remote villages, it is proposed to pay special attention to issues such as institution building, group formation, capacity building etc. to ensure community participation. Special programmes for awareness building will be launched with the participation of State Nodal Agencies/ State Governments/ NEC. An increased scale of assistance also has been proposed for all the infrastructure projects to attract investment. The strategy for implementation of the various programmes envisages appointment of a Project Management Agency to support MFPI. In the case of NE region, the scope of work of PMA will be finalized in such a manner so as to address the various issues. Regional level and state level workshops will be conducted and the entrepreneurs identified will be provided exposure and additional support for capacity building. The expenditure for this will be met out of the overall budgetary allocation.

7.2 Scheduled Caste/ Scheduled Tribe (SC/ST)

To encourage participation of SC/ ST in the various programmes aimed at development of Food Processing Sector, special programmes for capacity building of SC/ ST will be formulated. Efforts will be made to identify potential entrepreneurs belonging to SC/ ST category and tailormade EDPs, skill development programmes for workers, study tours etc.

will be organised under the Schemes on HRD and Promotional Activities. In backward regions in general and NE region in particular, a sizeable proportion of the workforce is expected to be from SC/ ST category. Most of the activities under the Food Processing Industry such as management of cold chain infrastructure, packaging etc. require precision, hygiene and skill. These issues will be addressed thorough appropriate training modules to be implemented by Government/ Non-Government Institutes. These programmes will be liberally supported by MFPI on need basis.

7.3 Gender issues

Women form the major workforce in agriculture in general. In the Food Processing Sector participation of women is substantial particularly in upstream activities. In sectors such as marine products, cashew processing, pickle manufacturing, the involvement of women is as high as 90%. Evaluation of Schemes Implemented by Ministry of Food Processing Industries in North Eastern Region in the 10th Plan Period show that 30% of permanent employment generation due to assistance provided by MFPI have been availed by women.

Gender concerns have to be mainstreamed in the development process of the Food Processing Sector. Bulk of the activities related to on-farm and at primary processing level will essentially be handled by women workforce. The focus on skill development, capacity building and empowerment has not been adequate. To address this issue following areas will be given extra focus during the Eleventh Five Year Plan.

- Assisting grassroots level institutions of women aimed at enhancing income and quality of life.
- Gender sensitization programmes for stakeholders including extension functionaries and other implementing agencies
- Redesigned training programmes for women on technology, management, microcredit aimed at the overall development of Food Processing Sector.
- Efforts to promote women entrepreneurs
- Encouraging R&D institutions to develop women friendly technologies for post harvest handling and processing, especially those aimed at reducing drudgery and providing ease of operation
- In view of emerging opportunities for jobs requiring skill in processing, testing in laboratories, special programmes are envisaged to be implemented targeting women
- It will be made mandatory in the infrastructure projects, to provide utilities for women staff workers
- Developing and putting in place a gender friendly charter mark scheme for industries in the food processing sector

8 Estimated Impact on Employment Generation and Growth

The present proposal envisages an outlay of about Rs. 5000 Crores including Rs. 3700 Crores for infrastructure development. A matching private sector investment means a total provision for investment in infrastructure to Rs. 7400 Crore.

Assuming a leveraging ratio of 2.5, a total investment of Rs. 7400 Crores in infrastructure can lead to an investment of about Rs. 20,000 Crores in processing units.

Assuming creation of 140 jobs per Crore of investment in the organized sector, an investment of Rs. 20,000 Crore will lead to creation of 2,800,000 additional jobs.

Further, assuming a reasonable investment turnover ratio of 2, a total investment of Rs. 20,000 Crores over the Plan period would lead to an aggregate turnover/value of production of Rs. 40,000 Crores over the Plan period.

Thus, against the projected output of Rs. 3,09,200 Crores (at the existing long term growth rate of 7 % p.a. for the sector) at the end of XIth Plan period, the proposed interventions would lead to an output of Rs. 3,55,279 Crores.

This would enhance the growth rate of the Food & Beverages Industry from the present 7% to around 10.01% over the next plan period.

The income levels of the farmers participating in the scheme are also expected to go up by 20% over a period of 5 years by the way of better realization, value addition and integration of the supply chain. A variety of traders and industries are likely to be incentivised in the building of the supply chain, such as transporters, cold chain specialists, farmer groups, marketing and processing units and retailers.

9 Supportive Action Required for the Development of the Food Processing Sector

Despite the vast potential of the food processing sector to generate incomes and growth in the country, this has not been realized due to a variety of factors, many of which fall within the ambit of different Ministries and departments of Govt. of India and state governments. They are also in inextricably entangled with the problems of the agricultural sector. While drawing up any action plan for developing the food processing sector in the country, it is essential to keep in mind the context in which the food processing sector is situated and the supportive steps which are required to be taken in a number of other sectors which have direct or indirect impact on the agricultural/ horticultural surpluses available for processing, quality of the inputs required, research and institutional support required to enable the farmer to generate these surpluses, factors affecting the transportation of produce across state borders, formation of a national market etc. This section gives a brief listing of these critical issues, not all of which are amenable to quick solutions. It is, however, essential that a coordinated approach is adopted on all these fronts with clear time lines for action.

9.1 Quantity and quality of raw material for processing

One of the difficulties frequently cited by food processing industries in the country is non-availability of agriculture and horticulture surpluses in the required quantity and quality at the appropriate time. Even where surpluses exist, these are located in pockets from where they cannot be conveniently accessed. The quality of surpluses available is also inadequate. The production of varieties suitable for processing requires large-scale replantation in large areas of land. A coordinated network of research and extension services is required to support such an effort in agriculture and horticulture. This issue is also linked to the review of the activities of ICAR and Agricultural Research Institutions as well as the extension agencies, which have to disseminate the available technologies to the farmers. There is also considerable difference between the best practice and the average in productivity of the farms, pointing to a clear opportunity available for enhancing output and incomes.

9.2 Farmers' Access to Bank Credit

According to reports of the World Bank, not less than 40% credit needs of the small and marginal farmers who contribute the largest component of agricultural employment and output are even now met by the traditional arhtias who provide finance to the farmers right at the farm and well before the harvest, though at high rates reflective of the risks involved. Arhtias have not been replaced by credit agencies in the organized sector, as they have not been able to establish the same level of confidence with the farmers. Any attempt to enhance the spread effects of food processing to the small and marginal farmers have to take into account the need for reasonably priced and accessible credit at the appropriate time of the year. Arrangements need to be developed involving the processors, traders and the farmers along with the financial institutions to support the efforts of the food processors to add value to the produce and raise incomes.

9.3 Need to move towards a single market for agricultural commodities and processed food

The vast Indian market is broken up into smaller local /regional markets and the high cost involved in transporting agricultural commodities and processed food from one part of the country to another involves a considerable drag on the efficiency of the food processing sector. The proportion of internal trade in the Indian economy in 2001-2002 stood at 13.4% of the GDP employing about 36 million people. We have the example of the European community which has over time, built up a common market for all products, a market with no internal custom charges or quantitative restrictions. They have also moved on to a single market where there are no fiscal charges on traders nor any technical barriers to trade. This has set in motion an expansion of the productive potential of the European economy, along with an increase in its competitiveness and efficiency.

According to a study prepared by FAO, one of the major impacts of removing inter state barriers in India would be the realization of better price by the Indian farmers as supply chain between the producer and the consumer would be streamlined. Reducing the transaction cost would help in reduction of the ultimate price paid by the consumer and improve competitiveness of Indian agriculture. Integration of the domestic market for all goods and services is one of the declared objectives of the Government. Government has targeted the entire country as a common or single market for agriculture produce, enabling the farmer to produce on the basis of his comparative advantage and efficiency. The integration of rural mandis with district, state and the national market will also be in line with the objectives of PURA Scheme and help arresting the migration of people from rural to urban areas. Following are some factors, which hinder integration of such a national market for agriculture produce:

9.4 Multiple regulations

The Essential Commodities Act, the Prevention of Food Adulteration Act, the Fruits Product Orders 1955 etc. have also contributed to making internal trade difficult and markets fragmented. The Food Safety and Standards Act 2006 recently passed by the Parliament, needs to be urgently put in place to avoid contradictory provisions in various Acts and develop a harmonized system of standards.

9.5 Tax structure

The complex tax structure and multiplicity of state level taxes

9.5.1 Introduction of VAT

All possible efforts are required to introduce VAT at the earliest.

9.5.2 Indirect taxes

Abolition of all indirect taxes on agricultural products would not only resolve the problem of border taxes but would also be more socially equitable. The taxes on agricultural products decreases the price received by the farmers and increases the price paid by consumers.

9.6 Transport costs

Commercial vehicles moving across borders, face a multiplicity of checks from different authorities relating to road tax, license fee, payment of excise/VAT, essential commodities act, authorized certification, pollution control, security etc. They are also required to obtain fitness certificate and pay road tax on annual basis. The rate of road tax is different in different states. Sometimes the goods carrying trucks from bordering districts of neighbouring States prefer to travel by a longer route so as to avoid the additional expenditure at a particular entry point and have to incur increased fuel cost and undergo longer travel time in that process. Very often it is cheaper to import food items from abroad than transporting from one state to another state within the country. The cartelised nature of road transport further increases the cost of transportation.

9.7 Rural connectivity

Investment in rural roads linking villages to markets and smaller towns has been recognized as the single most important infrastructural improvement which can add to the incomes and employment in the countryside. The Prime Minister's Rural Roads Programme has ambitious target to link villages by functional roads within a time frame. This needs to be adhered to and expedited as fast as possible.

9.8 Need to abolish APMC Act

Government has already taken a decision to abolish the Agricultural Produce Marketing Commodity Act, which, instead of benefiting farmers, is actually harming them. The market fee charges on value of produce sold do not reflect actual cost of the wholesale market and it is seen as another tax on agricultural commodities. As per the Act, waiving of market fees would only apply to specified products sold under contract farming. Direct sales would still be subject to market fee and direct buying from the farmer's premises would require a license from the State Government.

Abolition of APMC Act would facilitate free movement of agricultural produce between different States. It is necessary to ensure that collection of all additional fees and cess in the market be withdrawn and alternative sources of revenue found for the same. Though 18 states have approved amendments to APMC Act, the rules are yet to be notified.

9.9 Harmonization of standards

Another important special measure required to promote trade and agriculture is standardization and harmonizing of the quality standards. This is expected to be achieved by the implementation of the Food Safety and Standards Act, 2006.

9.10 Need to build institutions for the producers

To enable processors and retailers to access the agricultural produce and negotiate on a sustainable basis with the producers, it is necessary to build or revive institutions of farmer producers. This will also enable the farmers to wait for the appropriate price without deterioration of the produce. It is necessary to build institutions like Farmers' Associations, Self-help Groups and Cooperatives as well as private companies so that they can bargain with the processors and retailers for better price and other terms. Realisation of the economies of scale in procurement, technology and market are also better ensured by producer's groups. It will also facilitate group specialization in clusters.

9.11 Negotiable warehouse receipt system

Development of instrument based secondary market of negotiable warehouse receipt system is important for providing liquidity in the marketing system. Banks are presently reluctant to provide loans against warehouse receipts issued by the Central Ware Housing Corporation when the holder is not the person in whose favour the receipt was originally issued. Due to the above shortcomings, the usage of the ware house receipt as a financial instrument has not picked up. There is need to arrange a more secured system of accrediting ware houses so that they could provide certification about quality and quantity of the goods, credits and standards of the goods stored so that warehouse receipt would have better credibility and financial viability. The amendment to the Warehousing Act, pending in Parliament needs to be expedited.

9.12 Retailing in food processing

The Indian supply chain for food products has been characterised by extensive wastage and poor handling. An efficient supply chain and distribution structure is an important means for raising the income levels of the farmers on the one hand, and increasing affordability of these products, on the other. Most organized retailers in India are regional and use single formats such as conventional stores, super markets, hypermarkets, etc. In contrast, most international retailers have multiple format models. In India, food companies are much larger in size than the organized food retailers in India, unlike in developed countries. The key impediments to food retailing include lack of infrastructure, technology and capital. The entry of organized retailers into food distribution has in other parts of the country given a boost to value addition, rate of processing, investment and employment. There is also evidence to suggest that development of large scale format associated with the entry of foreign direct investment into retail sector will translate into higher employment and incomes all around as in countries such as China, Japan, Singapore and Malaysia.

9.13 Availability of power in the countryside

If the potential of the food-processing sector is to be fully realized, much higher investments are required in pre-cooling and controlled atmosphere components at the farm level, since deterioration of produce sets in within 5 hours of harvesting. In the absence of such investments, by the time the produce reaches the market, it has already undergone irretrievable deterioration. Provision of controlled atmospheric facilities, grading and packing houses at the farm level enable the farmers to hold on to their produce without letting them deteriorate. It will also enhance their bargaining power with the processors and the retailers. Any strategy for higher investments in the cold chain has to consider this issue. Since there are hundreds of towns with adequate purchasing power and there is practically unlimited demand for fruits and vegetables from the middle classes, the proposed structure of the cold chain would need to be attuned to decentralized distribution of processed food in the small and medium sized towns of the country. Such a strategy is likely to reduce the requirements of funds for investment in the cold chain and also the requirements of cooling and hence energy.

9.14 Introducing labour flexibility in food processing

One of the significant features of the food-processing sector is the availability of raw material for small parts of the year when crop is harvested. Leechies are available for 15 days in a year while mango is available for 3-4 months. This necessitates the food processing units to procure the maximum crop while the harvesting is being done and then processed it for use through out the year. Investments, therefore, have to be undertaken for the whole year, though the rate of utilization varies from month to month. It is essential, therefore, that flexibility in employment is given to food processing units so that they can quickly take on additional employees to meet changes in taste and demand and availability of raw material.

10 Proposed Financial Outlay

Component	Number of Units	Financial Outlay XIth Plan (Rs Crore)
Technology Upgradation/ Establishment, Modernization		600.00
Food Park PMA cost	30	1500.00 75.00
Modernised Abattoir PMA Cost	50	750.00 75.00
Cold Chain infrastructure Integrated Cold Chain and Strategic Distribution Centres	30	210.00 550.00
R&D Labs etc National level	 84 5	60.00 74.00

Component	Number of Units	Financial Outlay XIth Plan (Rs Crore)
State level General HACCP	29 50 500	 100.00
Street Food Food street	50,000	38.00 15.00 125.00
NIFTEM		244.00
Meat Board		10.00
Food Authority		50.00
Wine Board		10.00
PPRC up gradation		50.00
Schemes to be implemented without modifications Promotional Activities and Brand Building Human Resource Development Strengthening of Nodal Agencies		 100.00 100.00 130.00
Subvention of interest Zero cost capital fund		30.00 100.00
Implementation costs		10.00
Total		**5006.00**

An estimated investment of Rs. 100,000 Crores is required to achieve the goals as envisaged in Vision 2015 of MFPI. Of this, Rs. 10,000 Crore is expected to come from the Government, over the next two Five Year Plans. Keeping in line with this, the proposed outlay for the Eleventh Five Year Plan is Rs. 5006 Crores.

Chapter 2: Report of the Eleventh Five Year Plan Sub-Group on Infrastructure for Agro/Food Processing

1 Overview of Infrastructure for Food Processing Industry

Inadequate infrastructure is one of the major factors standing in the way of expansion of agro-food processing industries in the country. One of the major constraints experienced in the post harvest handling of all perishable agricultural commodities is the absence of an efficient cold chain, including on farm storage facility. Though several schemes are being implemented by various Ministries and agencies, the initiatives so far have not been successful. The cold storage capacity today caters to less than 10% of the produce, this too of rudimentary nature, with over 80% designed only to handle potatoes.

This not only leads to wastage of perishable produce but also adversely affects the supply of raw material to food-processing industries. The wastage adds up to the cost of raw material ultimately affecting the competitiveness of Indian food processing industries. Inadequate and fragmented supply chain prevents linkages of farmers to the market, depriving them of the opportunities offered by the emerging retail boom. There is an urgent need for technology induction facilitating use of Controlled Atmosphere /Modified Atmosphere Chambers, IQF facilities etc to be linked to the farm or collection hubs through reefer vans and ensuring an end to end cold chain.

Similarly infrastructure for primary processing and secondary processing also needs to be strengthened under a sustainable management arrangement. Several programmes have been under implementation during the Tenth Five Year Plan for supporting infrastructure development. A review of the schemes are given below.

2 Review of Tenth Plan Schemes for Infrastructure Development

The Ministry of Food Processing Industries (MFPI), Government of India, has been operating a Scheme for Infrastructure Development that includes the following components:

- Food Parks
- Packaging Centers
- Modernized Abattoir
- Integrated Cold Chain Facility
- Value Added Centers and Irradiation Facilities.

The salient features of the various components of Scheme for Infrastructure Development are presented in the table below:

Components	Salient features
Food Park	Grant in aid of 25% of the project cost upto a maximum of Rs.4 Crore (In NE region quantum of assistance increases to 33.3% of the project cost). Grant covers common facilities like common processing/ packaging, cold storage, food testing and analysis lab, effluent treatment plant, power, water etc.
Packaging centres	25% of the total cost of plant upto a maximum of Rs. 2 Crore (In NE region assistance increases to 33.3.%)
Integrated cold chain facility	25% of the total cost of plant upto a maximum of Rs.75 lacs (in NE region assistance increases to 33.3%). Assistance for non horticulture produce, special cold storage with Controlled and Modified Atmosphere facility
Value added centre	25% of the total cost of plant upto a maximum of Rs.75 lacs (in NE region assistance increases to 33.3.%). Assistance for enhancing shelf life, documentation etc.
Irradiation facilities	25% of the total cost of plant upto a maximum of Rs. 5 Crore (in NE region assistance is 33.3.%) for preservation, preventing infestation, sprouting etc.
Modernized Abattoir	25% of the total cost of plant upto a maximum of Rs. 4 Crore (in NE region assistance is 33.3%)

The table below gives the physical and financial progress of the various Infrastructure Developments schemes during the 10th Plan (till September, 2006).

Physical and Financial Progress of Infrastructure Development schemes during 10th Plan priod

	Physical Target	Physical Achievement	Financial Achievement (in Rs. lakhs)
Food Parks	25	18	2002-03- 3064.00 2003-04- 1370.00 2004-05- 1182.00 2005-06- 1565.00 2006-07- 353.36
Packaging Centres	05	01	
Cold chain Facilities	24	18	
Value Added Centres	10	05	
Irradiation Facilities	05	04	
Modernization of Abattoirs	05	01	
Total	**74**	**47**	**7434.36**

2.1 Review of Scheme for Food Park

The scheme for establishing Food Parks is in operation since 8th Five Year Plan with periodic revisions in successive Five Year Plans. Though the Ministry of Food Processing Industry (MFPI) has supported development of 54 Food Parks in the country during this period, most of them are yet to be established. Against a physical target of 25 Parks during the 10^{th} Plan, 18 Parks have been sanctioned so far. Of these, only 8 Food Parks have been established. Even those established are facing problems of gross under utilization, besides being unable to attract entrepreneurs. Only 28 units are currently in operation in these 8 Parks.

The Scheme for Food Parks targets providing common facilities like common processing/ packaging, cold storage facilities, food testing and analysis lab, effluent treatment plant, power, water etc.

Ministry of Food Processing Industries had commissioned reputed external agencies to carry out diagnostic study cum evaluations of the Food Park scheme. The findings point out that the State Industrial Development Corporations or PSUs implement the scheme in the traditional industrial estate mode with unsustainable management and implementation arrangements. This has resulted in valuable real estate being acquired but utilized at low levels of efficiency. The scope for commercial development of these locations for promotion of the food processing industry is yet to be utilised. Major reasons for the poor functioning of parks are:

- Location and site related problems including cost and unsuitability of locations
- Delay in providing basic infrastructure facilities like power, water, road etc.
- Delay in release of financial assistance
- Lack of entrepreneurial awareness, interest and aggressive promotional marketing efforts
- Poor management and implementation capabilities
- Absence of strong backward linkages
- Weak linkages with the market

The studies have also pointed towards the lack of:

- A comprehensive project report from the raw material supply chain to the market, assessing infrastructure needs at every stage
- Lack of funding for components such as internal roads, drainage, environmental control facilities and solid waste management facilities etc, which are also important infrastructure needed in the park.
- A competent proposal appraisal
- Failure to identify the various components of the supply chain

Studies further observed the need for providing higher scale of assistance for building infrastructure items in the pattern of schemes like Industrial Infrastructure Upgradation Scheme (IIUS) under the Department of Industrial Promotion Policy, Ministry of Commerce and Industry, Textile Center Infrastructure Development Scheme and Scheme for Integrated

Textile Parks (SITP) under the Ministry of Textiles and Scheme for Pack Houses, Cold Storages and Mobile Processing Units under National Horticulture Development Board, Ministry of Agriculture. These schemes carry higher rates of subsidy as compared to MFPI's Infrastructure Schemes.

The evaluation also suggested that the park will be successful only if infrastructure for (1) On Farm Storage (2) Primary Processing (3) Minimal Processing (4) Retail Outlet (5) Mobile Processing Unit (6) Mobile Pre-cooling Unit (7) Packaging Centre (8) Pelletisation etc. are provided on a cluster basis, without insisting on all common facilities to be provided within the acquired area of the Park.

2.2 Review of Scheme for Modernization of Abattoirs

A specific scheme targeting infrastructure for the meat processing industry is Modernisation of Abattoirs**.** The main objectives of the scheme are as follows:

- Scientific and hygienic slaughtering
- Stunning, causing least pain to the cattle/ minimizing transportation of animals
- Better by product utilization/value addition
- Providing chilling facility to prevent microbial activity in slaughtered animals

The response to this scheme has not been encouraging. The reasons for low response to the scheme include:

- 25% or 33.33% of the cost of plant and machinery/ TCW in general areas and difficult areas respectively with ceiling of Rs. 4 Crores translates to very low levels of assistance. The average cost of modernization of a medium sized abattoir is estimated to be Rs. 20 Crores.
- The scheme can be availed only by local bodies, which are generally cash starved.
- The experience of Department of Animal Husbandry in this area has also been similar with very few local bodies being in a position to avail of this facility.
- The Scheme is mainly supply driven. No promotional activities are undertaken to educate and build capacity of stakeholders.
- There is no project development agency to handhold from concept to commissioning.
- Local bodies are not in a position to combine regulation with management.
- Difficulties in modernizing and relocating existing abattoirs.

2.3 Review of Scheme for Cold Chain, Value Addition and Preservation Infrastructure (including Packaging Centre and Irradiation Centres)

The Tenth Plan schemes for Packaging Centre, Integrated Cold Chain Facilities, Value Added Centre and Irradiation Facilities have had a low response. Only 12 cold storage/ chains, 3 Value Added Centres, 1 Packaging Centre and 4 Irradiation Facilities have been supported under the four components during the Tenth Plan so far. The weaknesses identified in these schemes are as follows:

- The levels of assistance provided under the current scheme at 25% of the cost of plant and machinery and TCW in General Areas and 33.33% in difficult areas, subject to a maximum of Rs. 2 Crores are very low, since the total costs of these facilities are in the range of Rs.10-30 Crores.
- Keeping in view the National Horticulture Board's Capital Subsidy Scheme for cold storages, the MFPI's assistance is limited to:
- Cold storages for non-horticulture produce
- Where the cold storage is an integral part of the processing unit or of the common facilities in the food park
- Special type of cold storages with Controlled Atmosphere/ Modified Atmosphere facility
- Integrated solution for cold chain facility from farm gate till consumer is missing. Since pre-cooling units, mobile refrigerated transport including reefer vans etc. have been excluded from the scheme, complete cold chain facilities without any break cannot be supported under the scheme.
- Exclusion of horticulture produce for assistance under the scheme has created a gap. Since 1999-2000, NHB along with NABARD, NCDC and NAFED have been able to provide assistance for cold chain facilities to the tune of Rs. 273 Crores only, while the total need for investments for cold chain facilities for horticulture produce is envisaged at Rs. 2245 Crores during the Tenth Plan.
- Another important reason why large-scale investments have not taken place in India's cold chain infrastructure is that to be viable, investments in cold chain are expected to require not less than 100 days in a year whereas the typical inflow for raw material from agriculture is within the range of 30-40 days for each product.
- The failure to build supply chain from the farm to the consumer has prevented any incentive to invest in cold chain. Fruits and vegetables are largely distributed and consumed in the immediate vicinity of production centres, requiring little cooling. It is only when production is surplus to requirements that processing is resorted to.

3 Proposals for Eleventh Five-Year Plan

3.1 Integrated Food Zone/ Mega Food Park

In view of the experience gained in the implementation of the Food Park Scheme, and taking the recommendations of the evaluation studies into consideration, it is proposed that the Food Park Scheme may be revised/ restructured with the following objectives:

- Provide state of the art infrastructure for food processing in the country on a pre identified cluster basis
- Ensure value addition of agricultural commodities including poultry, meat, dairy, fisheries etc.
- Establish a sustainable raw material supply chain for each cluster
- Facilitate induction of latest technology

- Foster interagency linkages for pooling of resources for activities complementary to food processing
- Quality assurance through better process control and capacity building
- Address issues of small farm size and small and medium nature of processing industries through a cluster approach with stakeholders managing the supply chain.

3.1.1 Cluster based approach

The Integrated Food Zones/ Mega Food Parks have to be selected very carefully on the basis agricultural and horticultural surpluses available. Infrastructure available for transportation as well as processing has also to be kept in mind. A mix of products and crops have to be taken up to increase the viability of Food Park. The supply chain has to be clearly delineated and the points at which grading and processing units have to be established also need to be finalized. All these can be done only by a professional management agency specifically selected and tasked with this job. The SPV, which is sought to be established to manage the Food Park, has to be supported by appointing a Project Management Agency to ensure that these components are put in place.

In this scheme there will be provision for a centralized infrastructure to take care of the processing activities, which require cutting edge technology like testing laboratories, effluent treatment, packaging etc. which are capital and technology intensive. Under the umbrella of such a park, primary-processing centers for processing of intermediate products and even finished products with minimal processing can be established. These could also be a platform for technology feedback to address several issues such as introduction of appropriate varieties for processing and handling of produce to meet the processing requirements.

The Food Park can be established for any sector on need basis such as Fruits and Vegetables, Dairy, Meat & Poultry, Wine etc. Subject to feasibility, such centers can facilitate organic farming and processing of organic food. In zones which offer potential for organic farming, exclusive food parks could be set up for value addition and marketing. These centers can also serve as sourcing hubs for retail chains for fresh produce/minimally processed products.

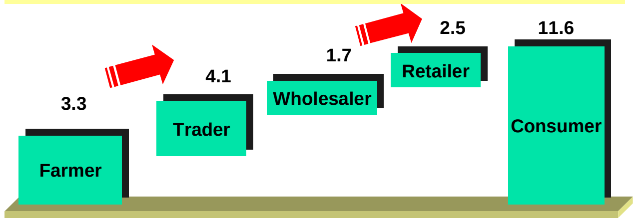
The Integrated Food Zone/ Mega Food Park could be implemented in already identified AEZ (about 60) or clusters identified by the National Horticulture Mission/ Technology Mission. The clusters in the service area of the proposed park could be mapped (in all sectors such as fruits and vegetables, dairy, fisheries, animal husbandry, poultry, oil seeds, spices, wine etc) to evolve detailed implementation plans. Such an approach can help in the much needed synergy among agencies complementary to the Park.

3.1.2 Supply Chain Management

The feedback from the industry regarding the limited success of the food parks indicates lack of reliable raw material supply as a major constraint. While supply chain management is important for all industries, it is of paramount importance as far as the food processing industry is concerned. Production is relatively unorganized and this calls for appropriate backward linkages to be established simultaneous with establishment of processing facilities. Bulk of production of fruits and vegetables occur in small and marginal holdings. In such a situation, it is extremely essential to have aggregation of the produce at the village level itself before being transported to the park, which is centrally located.

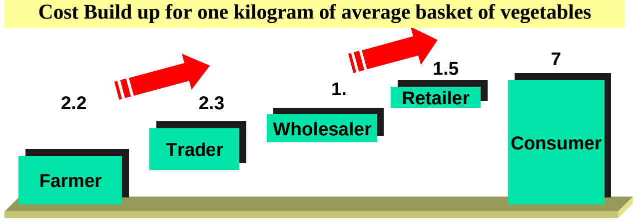
At present, the share of producer in the value chain is less than 30%. As per a study conducted by NIAM, while the consumer pays an amount of Rs.11.6 for a kg. of fruit, the price realized by the farmer is only Rs.3.3 (28%). The trader at the village takes Rs.4.1 (35%), the wholesale dealer takes Rs.1.7 (15%) and the retailer takes Rs.2.5 (22%). All these margins are without any value addition to the product (Fig 4).

Fig 4 Cost Build up for one kilogram of average basket of Fruits



❖*Farmers get only 28.5% or less price of retail sale price in case of Fruits*

Cost Build up for one kilogram of average basket of vegetables



❖*Farmers get only about 30 % or less price of retail sale price in case of Vegetables*

Studies have reported that there are 6-7 intermediaries in the supply chain for fruits and vegetables in India as against 2-3 in developed countries. This reduces the farm gate price and the income levels.

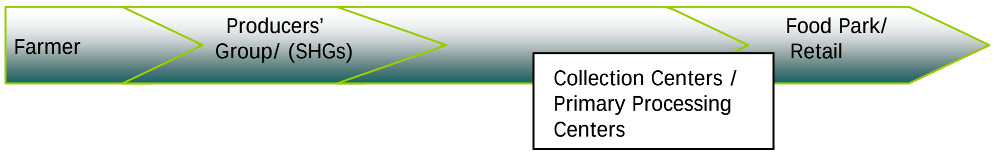
For addressing this issue, appropriate institutional development at grassroots level, with involvement of small and marginal farmers is essential. The concept of self help group or Neighborhood Group has been found effective in the food/ vegetable production system. Each group may compromise of 10-20 farmers. These groups can be the first point of aggregation of the produce, and can also act as an agency for transfer of technology for adoption of best practices to improve productivity and quality to meet the market needs. These organizations will be stakeholders in the Food Park. The model has already been tried in the plantation sector with a fair degree of success.

In the model for supply chain management, the fruit/vegetable producers' society/association is the next suggested level. Fruit/vegetable producers' society/association would be a cluster of 20-30 self help groups, which would also provide these groups with basic minimum facilities for handling the fruits and vegetables produced by its members.

Around 10-20 such clusters are to be organized in the service area of Food Parks to ensure regular supply of raw materials to the parks. The same concept can hold good for poultry and dairy sector.

The Mega Food Park /Integrated Food Zones will therefore have three tiers in the supply chain (backward linkage) viz.:

- Producers' Groups comprising of 20-30 SHG (Each SHG_10-20 Farmers)
- Collection Centres/Primary Processing Centres **(products specific Clusters)** for each Producer Group with pre cooling facilities. Depending on the need sorting, grading & packing facilities will be provided at these centers. These centers will have facilities for transfer of technology as well as information kiosks, supply of inputs etc . About 20 such clusters will feed the Food Park.
- Food Park (Central Processing Facility)



The Supply Chain

The Food Park Scheme will be implemented by a SPV, ideally a private limited company in which the stakeholders will be the investors in the park, producers' agencies, retailers, Service Providers, State Government Agencies, financial institutions etc. The backward linkages in the jurisdiction of a park will be organised under an appropriate institutional arrangement- a Producers Company (registered under Section 25) or a Society under Charitable Societies Act. Under the proposed arrangement, it is estimated that approximately 4000-5000 farmers will get directly involved in the supply chain. The Producers Company or the Society will be a shareholder in the SPV formed for implementing the Food Park. Alternatively the Producers Company with the equity participation of about 20 fruit/vegetable producers' Society/ Association (cluster), large farmers, traders etc. can be promoted by the SPV of the Park and the SPV can have equity participation in the Producer Company.

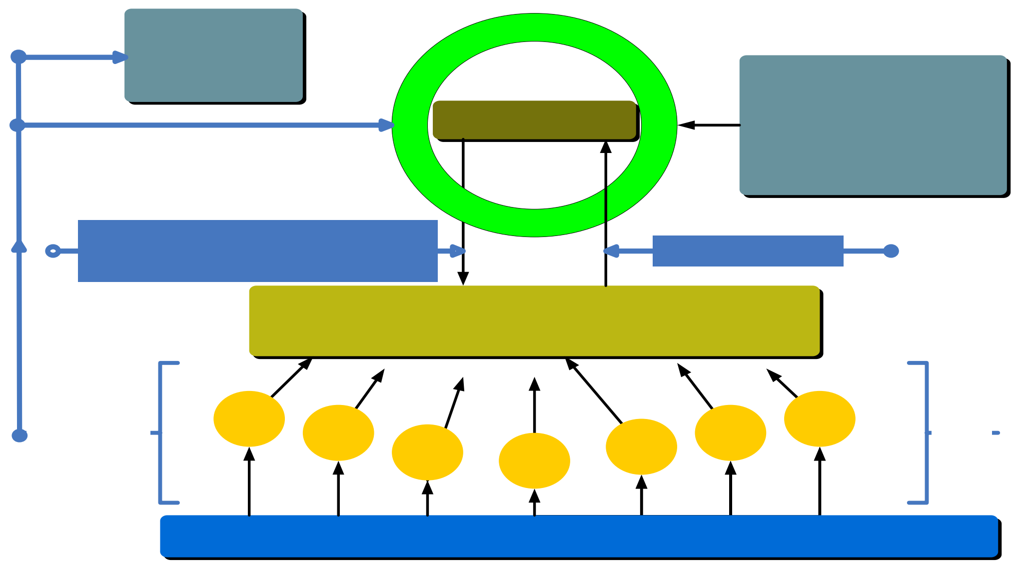
The facilitating of formation of self-help groups of farmers will require intensive extension efforts. The SPV proposed to be formed for implementing the Food Park may not be in a position to carry out this task directly. These functions can be discharged by the State Agricultural / Horticultural Departments, or specific agencies created by the State Government or Central Government for the purpose. Identifying NGOs to carry out the tasks outlined can be considered as an option. The capacity building of the extension workers and technologists will be the responsibility of the SPV. These farmers' producer companies can also make arrangements for bulk supply of inputs, access to technology, organise programs for capacity building etc.

One of the major constraints in the sector is lack of good planting materials. The farmers' producer companies can address this issue. Nurseries can be run on a commercial scale including adoption of biotechnology and micro propagation techniques. An information kiosk can be provided at the fruit/vegetable producers' society/ association level to provide market information.

The institutional arrangement proposed would address the concerns raised in the context of contract farming by farmer organizations. The Producer Company can directly deal with entrepreneurs/ corporates investing in the park for the supply of appropriate varieties by changing the cropping pattern, if need be.

SPV also can enter into contracts with the retailers. While the demand for fresh products can be met through the primary processing/ collection centers, the demand for intermediate/ fully processed food products can be met by the units in the park. If the scheme is tailored and marketed properly, the retailers themselves also can become equity partners in the SPV of the parks.

A diagrammatic representation of the framework of the Integrated Food Zone/Mega Food Park is given below



3.1.3 Eligibility criteria and financial assistance

Integration of the various activities with economies of scale involves higher investments. Considering the requirements of investment in infrastructure which are not likely to come from formal sources, there is a need to revise the scale of financial assistance, eligibility criteria and management arrangements of the project.

Salient factors justifying the revision of rates of financial assistance are summarized below:

- Availability of raw material is seasonal lasting only for a few weeks/ months. eg. Mango is available for four months in a year and litchi for 15 days. This necessitates a range of products to be handled requiring higher investment. Larger capacities are required to be created to meet the requirements of the peak season.
- For ensuring viability, integration of processing of by products is required, which again calls for additional investment
- There is need for technology induction and quick adaptation to changing tastes
- Some of the essential items required for the park and vital to the success of the scheme, such as back-up power supply, precooling facilities, reefer vans etc. are not covered under the present scheme

The scheme will be eligible to be availed by all categories of entrepreneurs and emphasis will be on the economies of scale and viability of the scheme.

3.1.4 Basic facilities proposed to be provided in the park

General Infrastructure

- Common infrastructure like roads, water supply (bore well, over head tank, distribution lines, water treatment plant)
- Administrative building, conference room, Guest House, Bank, Post Office, Shopping Complex
- Internet
- Electric sub station, DG Sets

Technical Infrastructure

- Basic refrigeration plant with puff insulated panels – 18,000 MT
- Weigh bridge
- CA Chamber- (Imported equipment)
- Pressure Ventilation- (Imported equipment)
- Incubation Chambers
- IQF facility
- Variable Humidity Store (Additional Equipment) 6,000MT
- Pre-Cooling Units
- Effluent Treatment Plant
- Packaging R&D & quality control lab
- Training Facility

*List illustrative-to be finalized on a need basis

3.1.5 Special Economic Zone (SEZ) in the Food Processing Sector

SEZ offers a good opportunity for leveraging the potential of the domestic market as a source of raw material of agri-horticultural produce and as a market for large quantities of processed products. Providing the benefits of SEZ will reduce the cost of production and significantly increase competitiveness of processed food items. Since food processing units are not typically spread over a large area, prescribing the minimum size of 1000 hectares for the food SEZ is bound to discriminate against small food processors. Procurement of land is the costliest item and large chunks of land are not be available in prime agricultural areas. It is, therefore, proposed that the minimum size of the SEZ for food processing industry may be reduced to 10 hectares to bring smaller food processing units within the ambit of the SEZ scheme.

If given favourable conditions by the way of low taxation and other benefits which are available to the SEZ, the Food Zone is likely to trigger complementary private investments in the various components of the supply chain. Each food park is expected to attract investments in cold storages, transport services, reefer vans, grading centres, on farm cooling arrangements, laboratories and testing centres as well as other supporting services. Considerable amount of processing in the unorganized sector is also likely to be upgraded by the introduction of modern techniques and facilities. This will not only increase employment and investment in these areas but also incentivise formation of institutions and arrangements through which the various stakeholders such as farmers, processors, retailers and traders can interact with each other to build and manage the supply chain. Keeping in view the significant benefits which are likely to accrue by investments in the Food Park, it is proposed that tax and other benefits which are currently available to the SEZ may be made available to the Food Parks also. To start with, it is recommended that the first 10 mega Food Parks under the revised format proposed above may be accorded SEZ benefits. This will enable them not only to source large quantities of agricultural and horticultural raw material from the domestic market but also competitively supply processed food products as well as fresh products in the neighbouring towns and villages. This is likely to set off a process of inclusive growth directly benefiting to the farmers and the supportive services in the rural and semi-urban areas.

3.1.6 Estimated cost of setting up of common infrastructure in an Integrated Food Zone /Mega Food park

Sl No	Item	Cost (Rs Crores)
1	Primary Processing Centres - 10 Land, Built up area with Puff Panels, State Power, Generator, Electricity Equipments Ripening Chambers, Grading-treatment, Packing Lines- 7.5 MT/hr- 3 lines, Pre-cooling chambers- 300 MT Refrigeration system, Reefer Vans 10 Nos, Ordinary Vans- 8 Nos., Internet	48.70
2	Common Infrastructure- High Tech Cold Store Basic refrigeration plant with puff insulated panels- 30,000 MT CA-(Imported equipment), 16OOO MT Pressure Ventilation (Imported equipment), 6OOO MT Variable Humidity Store (Additional Equipment), 9000MT Pre-Cooling Units Building infrastructure, Power DG Sets, Fork Lift, Crates, Pallets, Incubation center	22.54
3	Common Infrastructure- General Land, Buildings (Administrative block), Internal Roads, Weigh Bridge, Training Facility, Guest House, Bank, Post Office, Furniture, Drainage Water Supply, Road, Electricity, Gensets, ETP, etc including pre operative costs	50.00
	Total	121.24

3.1.7 Proposed Framework

The broad differentiation between the present approach and the proposed initiative is as given below.

Existing Scheme under Tenth Five Year Plan	Proposed Scheme under Eleventh Five Year Plan
Supply driven- not entrepreneur driven	Demand driven
Post marketed	Pre marketed
Stand alone (no backward and forward linkages)	Strong backward and forward linkages- reliable and sustainable supply chain
No Project Management Agency (PMA)	PMA to handhold from concept to commissioning
No financial closure	Financial closure to be ensured by the PMA
Targeting small & medium enterprises with a minimum of 20 units for a 30 acre park	No restriction on the number of units- restriction can be on the quantity of material to be handled
Activities confined to park alone	Complementary activities can take place out side the central park by creating the required infrastructure in a well-defined Zone to be finalized after a feasibility study.
No stake holder participation	To be implemented on PPP mode SPV involving stakeholders to manage the Park- Private entrepreneurs holding a minimum of 51% equity
Financial Incentives, 25% limited to Rs 4 Crore, inadequate to create the appropriate infrastructure	Higher scale of assistance to meet 75% of the project cost with a ceiling of Rs.50 Crore per park (Scale of assistance to be 90% in difficult areas)

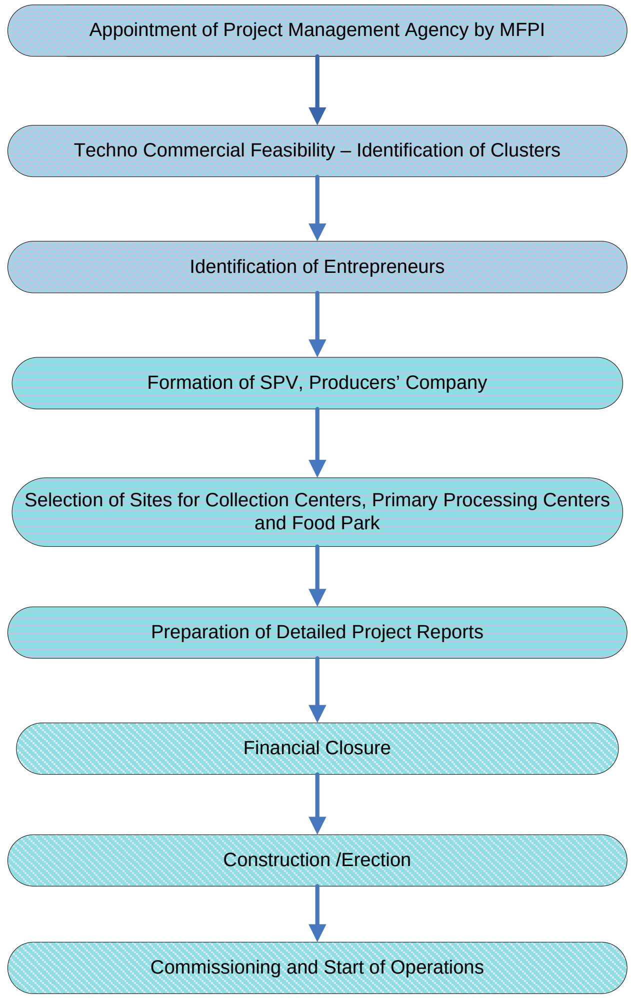
3.1.8 Project Implementation

As Park Projects are complex in nature and involve multi-disciplinary skills, it is proposed to appoint reputed and experienced consultants as Project Management Agencies (PMA), with experience in development and financing of industrial cluster infrastructure on PPP basis, to be engaged by the MFPI, indicating clear deliverables. The PMA's role will be from conceptualization to commissioning of the project including:

- Project development
- Pre feasibility study
- Facilitating formation of SPV, which is expected to be a corporate entity with users/ entrepreneurs having majority stake
- Establishing linkages with agencies- government, non-government or international
- Harnessing resources to support activities that are vital for the sustainability of the project, besides financial closure of the project
- Providing general advisory services to the Government and the SPVs for effective implementation of the project.
- PMA will also ensure that:
- The Park to be managed by the SPV which would be provided with operational autonomy so that they do not become surrogate Public Sector Enterprises or be controlled by Central/State Governments.
- SPV will be entrepreneur driven and will engage professionals to manage the day-to-day affairs.
- The main source of revenue to the park will be user fee. In case of loans availed by SPV for development of park, the repayment will be done by way of collecting the charges from the occupiers.
- PMA will also suggest a risk management strategy.
- The SPV is to function as a nodal point for the skills and resources available in the project area and provide a mechanism for participation by farmers, processors, retailers and Government
- The cost of engaging the PMA is to be borne by the Government (in addition to the grant to the SPVs).

A few successful models with world class technology to meet international quality standards with due importance to Sanitary and Phytosanitary Standards (SPS) and Hazard Analysis and Critical Control Point (HACCP) can act as nuclei for development and will facilitate fringe processing units. The higher scale of assistance and the additional expenditure on account of engaging the PMA will be more than justified by the degree of success the proposed model can ensure. It has also been found that location of a few large mother units can encourage others to join and leverage the strengths of the park.

Flow chart of Implementation



3.1.9 Action Plan

It is proposed to set up 30 parks during the 11th Plan Period (at least two in North East). Seasonality of raw material availability and uncertainty of quality and quantity introduce much higher risks in the food processing sector. The cost of establishing an Integrated Food Zone/ Mega Food Park is estimated to be Rs. 120 Crores. Considering the higher risk involved in food processing sector, the revised norms propose that the grant from GoI for one park will be 75% of the project in General Areas and 90% in Difficult Areas limited to Rs. 50 Crores. Total financial outlay proposed for 30 Parks is Rs.1500 Crore. In addition, project management charges are estimated to be Rs. 75 Crore i.e. 5% of the project cost. This would include the fees for the PMA, cost of preparation of DPR, supervision charges for civil works and the cost of organizing SHGs/ neighbourhood groups and their capacity building etc., to be carried out by NGOs or any other agency engaged to do so.

This will also align the food park scheme with similar initiatives in other Ministries. The proposed implementation schedule and funds required are indicated below:

Year	No. of Parks	Grant (Rs. Crore)
2006-07 (advance action)	5	5.00
2007-08	5	345.00
2008-09	5	250.00
2009-10	5	250.00
2010-11	5	250.00
2011-12	5	400.00
Total	30	1500.00

3.1.10 Advance action

Advance action is proposed for setting up 5 parks during the current financial year, involving identification of location, products and investors, formation of SPVs, selection of the managing agencies and building supply chains and capacity of farmers to produce for the market. The existing agencies of state government and the GoI will be fully involved in the effort. The estimated expenditure for above is Rs. 5 Crores.

3.1.11 Estimated Impact

Investment

Investments of Rs. 120 Crores for the common infrastructure in the Park, can bring in a total investment of about Rs. 300 Crores. Thus providing a grant of Rs.1500 Crore for 30 parks can trigger an investment of Rs.9000 Crore across the country.

Employment

Each Park is expected to provide direct employment for 1000 persons and indirect employment to 5000 persons. Thus the total employment to be generated in 30 parks is estimated to be 30000 direct and 150000 indirect. (without taking into consideration the employment generated at farm level).

Farmer processor linkages

The proposed model can build farmer-processor linkages, which has been the key to success in food processing in countries such as Brazil. The suggested framework will also help in aligning the supply chain from ‘farm to plate’ to meet the requirements of the international market, introduction of sustainable standards and brand building. Parks can serve as sourcing hubs for retail chains. They can also be a destination for investment through FDI if marketed efficiently

3.2 Abattoirs

The proposed scheme will address the weaknesses in the Modernisation of Abattoirs scheme in its current form.

- The Abattoirs will be most appropriately located outside the city limits, since the existing abattoirs of municipalities do not have in most place enough land for expansion or modernization. It will also avoid the need to transport animals by road or by train.
- It has been estimated that 300-400 animals would require to be slaughtered in a day for a medium size abattoir to be viable. The location of Abattoir will therefore be carried out on a purely commercial basis, based on availability of animals, nearness to markets etc.

- The volumes of assistance be increased to 50% and 60% of the cost of plant and machinery/ TCW in general areas and difficult areas respectively with ceiling of Rs. 15.00 Crore per abattoir.
- The land for Abattoirs will be contributed by the Panchayats. This will enable the local bodies to participate in the venture and also be assured of a stream of income.
- The scheme will be implemented with the involvement of local bodies (Municipal Corporations and Panchayts) and will have flexibility for facilitating involvement of private investors.
- Higher levels of utilization of by products to be carried out under the revised scheme.
- Along with modernization of existing slaughterhouses, wherever the old sites are unsuitable because of neighborhood/ religious/ political problems green initiatives to be undertaken through relocations or otherwise.
- Capacity building and training to be carried out for hygienic and scientific slaughtering.
- Export and commercial processing of meat could also be included to enhance the viability of the scheme. It is proposed to link the modernized abattoirs to cold chain and retails outlets so that the benefits of hygienic slaughter of animals are available to consumers.

3.2.1 Implementation Mechanism

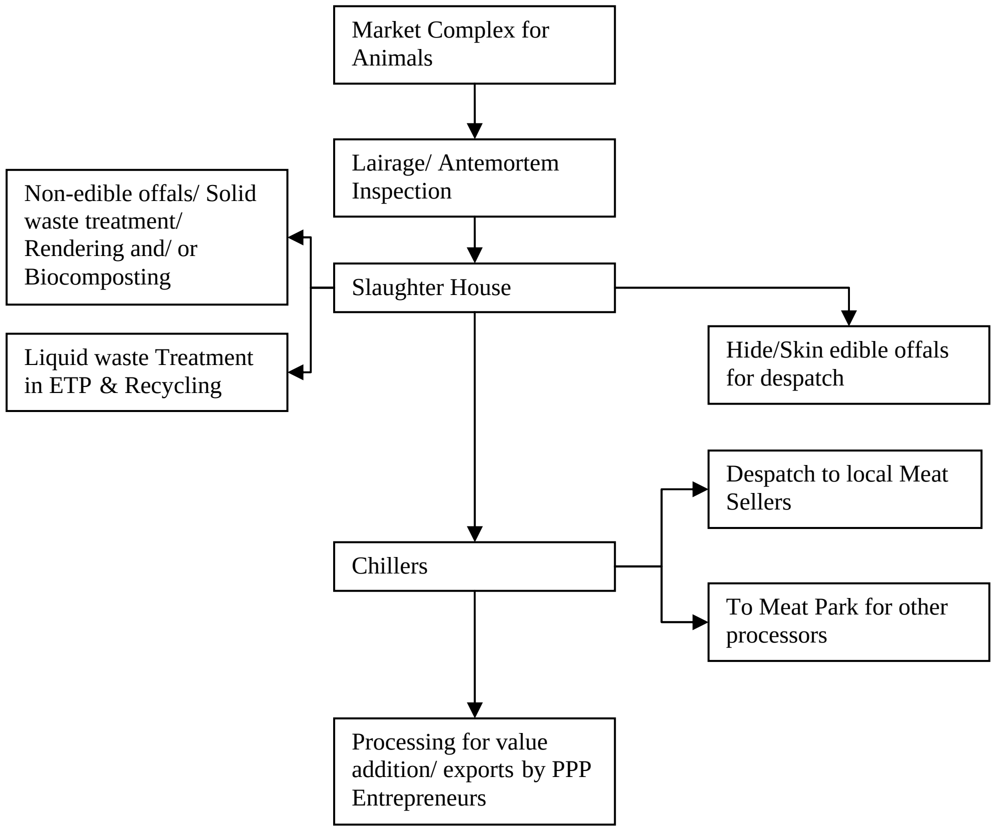
The implementation of the Scheme will be under PPP mode. The private investors can be competitively selected on the basis of subsidy to be claimed.

Project Management Agency to be appointed by MFPI to handhold from concept to commissioning stage in view of the tardy progress of projects under the Tenth Plan Scheme. The PMA's role would include the following:

- Identification of private investors (pre marketing the park)
- Harnessing resources to support activities that are vital for the sustainability of the project
- Designing the scheme and selecting the investor and the means of finance. Bidding can be on the basis of the subsidy demanded.
- Providing general advisory services to the Government and the SPVs for effective implementation of the project.
- Regulatory functions will be discharged through local bodies.

3.2.2 Proposed Arrangement for Establishment of a Modernized Abattoir

The following flow diagram gives the proposed arrangement for establishment of a modern slaughterhouse complex.



3.2.3 Proposed Framework

The following framework is proposed for implementation of the Modernisation of Abattoirs Scheme under the Eleventh Five Year Plan.

Existing Scheme under Tenth Five Year Plan	Proposed Scheme under Eleventh Five Year Plan
25% or 33.33% of the cost of plant and machinery/TCW in general areas and difficult areas respectively with ceiling of Rs. 4.00 Crores	50% and 60% of the cost of plant and machinery/TCW in general areas and difficult areas respectively with ceiling of Rs. 15.00 Crores
Only local bodies eligible	Local bodies, or through JV or Private basis.
Only modernization of existing slaughterhouses.	Modernisation of existing slaughter houses, green initiatives through relocations or otherwise.

3.2.4 Policy Issues

Constitution of the Meat Board: An Apex Body under the Ministry, representing all stakeholders needs to be constituted to promote finance, support R&D and quality/safety issues in the meat-processing sector. This agency will monitor the demand and supply situation and will work towards improving the framework of meat trade to the benefit of consumers, producers and exporters.

Constitution of a National Meat Board (NMB)

It is proposed to set up a National Meat Board for overseeing the growth and further promotion of Meat and Poultry sector in the country. This has been considered necessary because of a felt need for a focused intervention in meat and poultry sector. One of the reasons identified for slow and unregulated growth of the sector is that of multiplicity of authorities for regulation of the sector. Setting up of NMPB would address this key weakness by acting as the apex agency for the sector and focusing on overall development of the sector.

The following will be the mandate of the board (i) lay down polices for healthy development of the sector (ii) evolve standards of hygiene and quality. (iii) support R&D (iv) organize capacity building efforts (v) implementation of scheme on modernization of abattoir

3.2.5 Action Plan

- 50 abattoirs will be supported under the Modernisation of Abattoirs scheme during the Eleventh Five Year Plan. Grants from GoI for moderninisation of 1 abattoir will be Rs. 15 Crore (50% and 60% of the cost of plant and machinery/ TCW in general areas and difficult areas respectively with ceiling of Rs. 15 Crore)
- As bulk of operations will be carried out by local bodies that are cash starved, O&M cost to be provided under the scheme @50% of total O&M costs on a reducing basis. A suitable fee also will be levied towards O&M costs from the users of the facility. The requirement of funds will be Rs. 75 over a period of 5 years.
- The financial outlay for the scheme will be Rs. 825 Crore
- A plan outlay of Rs. 10 Crore is being proposed for the Meat Board for next FYP for promotional activities relating to marketing, hygiene standards, brand promotion and testing laboratories

3.2.6 Advance Action

As an advance action, 5 abattoirs may be implemented under the proposed framework by March 2007. The total investment during the current financial year is estimated to be Rs.25 Crore. The advance action involves identification of the five abattoirs, preparation of DPR, consultation with stakeholders, identification of the project management agency etc.

3.3 Scheme for Cold Chain, Value Addition and Preservation Infrastructure (including Packaging Centre and Irradiation Centre)/ Integrated Cold Chain and Strategic Distribution Centres

With over 35 urban agglomerations, which will have more than 10 lakh population, there is a clear opportunity for a decentralized and town centred approach to investments in cold chain infrastructure in the country. Instead of heavy investments in cold chain linking the remote farms to the super markets and malls in the metropolis, investments in cold chain could be also of the nature of cold areas nearer the farms, grading centers, packing centers and controlled temperature areas which will enable the farmer to store his crop after proper grading and cleaning to await a better price from the processors and the retailers. Enabling the farmer to hold on his crop without deterioration is the single biggest step, which can contribute to value addition at the farm level and higher price realization by the farmers. This is particularly important because within 4-5 hours of cropping, deterioration sets in fruits and vegetables.

3.3.1 Scheme for Cold Chain, Value Addition and Preservation Infrastructure (including Packaging Centre and Irradiation Centre)

Keeping the above in view, the following revisions are proposed in the Scheme for Cold Chain, Value Addition and Preservation Infrastructure (including Packaging Centre and Irradiation Centre)

- Components of Integrated Cold Chain, Value Added Centre, Packaging Center and Irradiation Facilities to be integrated to a single scheme to allow flexibility in project planning
- Cold Chain/ Packaging Centre/ Value Added Centre to come up independently or as integrated projects
- Considering the low levels of assistance at present, it is proposed to increase the assistance to 50% of the total cost of plant and machinery and technical civil work in general areas and 75% in special category states including UTs of Andaman & Nicobar/ Lakshdweep, subject to a maximum of Rs. 10 Crores.
- To provide integrated and complete cold chain facilities without any break, from the farm gate to the consumer, Pre-cooling facilities at production sites, reefer vans, mobile cooling units also to be assisted under the project.
- Horticulture produce also to be included for support under Integrated Cold Chain Facilities.
- DPR with feasibility report required for availing assistance.
- Evaluation/ Review/ Monitoring to be carried out in association with specialized Agency to be appointed by the Ministry.
- 5% of the project costs could be used for Implementation/Evaluation/ Review/ Monitoring. These costs shall be in addition to the aforesaid stipulated grant-in-aid
- Project Management Agency to be identified for developing and implementing each project

3.3.2 Scheme for Integrated Cold Chain infrastructure and Strategic Distribution Centres

- The Ministry proposes to work with the Container Corporation of India, Railways, Airport Authority of India and private infrastructure companies to establish Integrated Cold Chain and Strategic Distribution Centres (SDC) in a network of towns, airports and seaports on the trunk routes, highways and consumption centres.
- The nerve centre of the integrated cold chain infrastructure will be SDC. The SDCs, each with a capacity of 10,000 to 20,000 tonnes will be located near airports, seaports and

consumption centres. They will form the last point for export of processed foods and also provide the much-needed forward linkage to the supermarkets and malls in the metropolises.

- SDCs to have infrastructure facilities like material handling equipment, refrigeration, IQF/ Blastfreezing, ancillary equipments, x-ray, weigh bridge, substation, electric system, cold/CA/MA/ specialized storage etc. to handle a wide range of perishables/ processed food products.
- Food Parks and processor units to feed into the Integrated Cold Chain and Strategic Distribution Centres though the regular cold chain facilities.
- Assistance in the form of subsidy to be provided@ 50% in case of public sector agencies and 25% in the case of private sector. Assistance to be provided for Reefer containers as well as the entire cost of technical civil works and infrastructure facilities to be provided for SDCs.
- The cost of setting up one SDC of 20,000 tonnes is Rs. 160 Crore. Therefore the cost of setting up 6 SDC will be Rs. 960 Crore. The total cost of 600 reefer containers will be Rs. 42 Crore. 5% of the project cost to be provided as PMA cost. Assuming assistance level @ 50%, the total outlay for the scheme is proposed to be Rs. 550 crore.
- Locations to be selected based on catchment areas, availability of other infrastructure and viability.

3.3.3 Implementation Mechanism

- DPR with feasibility report required for availing the assistance.
- Project Management Agency to be identified to assist the MFPI in appraisal and implementation of the project.
- Evaluation/ Review/ Monitoring to be carried out through specialized Agency to be appointed by the Ministry.
- 5% of the project costs could be used for Appraisal/ Implementation/ Evaluation/ Review/ Monitoring through professional agencies. These costs shall be in addition to the aforesaid stipulated grant-in-aid.

3.3.4 Proposed Framework

The proposed framework under which the revised scheme for cold chain facilities will function is as follows.

Existing Scheme under Tenth Five Year Plan	Proposed Scheme under Eleventh Five Year Plan
25% of the cost of plant and machinery and technical civil works for setting up of irradiation facilities in General Areas and 33.33% in Difficult Areas. The maximum levels are different for different components. For Integrated Cold Chain facilities there is a common ceiling of Rs. 75 lakhs in both	50% of the total cost of plant and machinery and technical civil work in General Areas and 75% in special category states including UTs of Andaman & Nicobar/ Lakshdweep, subject to a maximum of Rs. 10 Crores for provision of Cold Chain, Value Addition Centres, Value Added Centres and Irradiation

Existing Scheme under Tenth Five Year Plan	Proposed Scheme under Eleventh Five Year Plan
General Areas and Difficult Areas. For Value Added Centres it is Rs. 50 lakhs in General Areas and Rs. 75 lakhs in Difficult Areas. For Packaging Centers it is Rs. 2 Crores and for Irradiation Facilities it is Rs. 5 Crores.	Centres (Average take off per unit estimated at Rs. 7 Crore) No separate ceiling for each component
Reefer vans, mobile cooling units also to be assisted under the project.	CA/ MA, reefer vans, mobile cooling units also to be assisted under the project.
Horticulture produce excluded for support under Integrated Cold Chain Facilities.	Horticulture produce to be included for support under Integrated Cold Chain Facilities.

3.3.5 Action Plan

The proposed outlay to support cold chain infrastructure projects during the next five years is Rs. 210 Crores at an average rate of Rs.7 Crore per unit.

A provision of Rs. 550 Crore is proposed for supplementing the initiatives of Contatiner Corporation of India, Railways and other private investors in establishing a network of Integrated Cold Chain and 6 Strategic Distribution Centres on the main trunk routes, highways and consumption centres, specifically targeted to meet the demands of food processing industry.

4 The Proposed Financial Outlay for Scheme for Infrastructure Development

Component	Physical target	Proposed Outlay (Rs. Crore)
Food Park	30	1575
Cold Chain	30	210
Integrated cold chain and Strategic Distribution Centres	6	550
Abattoirs	50	825
Total		**3160**

Chapter 3: Report of the Eleventh Five Year Plan Sub-Group on Meat, poultry, fish and dairy products

1 Overview of the Meat, Poultry, Fish and Dairy products

Meat, Poultry, Fish along with Dairy products are integral part of Indian agriculture. They not only provide nutrition but also supplement income level of the farmers. While dairy and poultry are relatively well developed sectors, meat and fish processing remain underdeveloped. As growth in food grains production has slowed down over the years even as dependency level remains high, development of meat, poultry, fish and dairy sectors must be accorded high priority to provide better employment and income levels to the population dependant on agriculture.

1.1 Meat Products

- In India, meat products are dominated by buffalo meat production, with an estimated production of 1.9 million tonnes. Mutton and lamb meat production in India, on the other hand, is stagnating around 0.1 million tonnes. Most of the large units are confined to buffalo meat production for exports. The sector is dominated by unorganized units with around 25000 unregistered slaughterhouses an estimated 4000 registered slaughterhouses. Quality and hygiene remain areas of concern in domestic market.
- India is home to around 50 % of the world’s buffalo population. Since the growth of buffalo meat for domestic consumption is low (less than 2%), the potential for its export increase is substantial. Also, buffalo meat in the country is very competitively priced as the meat industry in India is largely a by-product of the dairy industry wherein livestock, which have completed its useful contribution, are used for meat.
- India’s export market is largely confined to Malaysia, Philippines, Mauritius, UAE and other gulf countries though there have been increase in sales to Africa and CIS countries recently. There exists huge opportunity for India to develop its buffalo meat exports as existing leaders in industry like Europe and North America face issues of reduction in agriculture subsidy and disease prone livestock.
- A big advantage for India is its livestock health status. India has always been free from the dreaded Mad Cow Disease (BSE) and has been free from Rinderpest since 1995. There has not been a single incidence of Contagious Bovine Pleuro Pneumonia (CBPP) in India during the previous 12 years. Foot and Mouth Disease (FMD) remains the only issue of concern, though being controlled through various measures.
- A major programme to control FMD is presently being implemented by Central Government in 54 districts across the country. Uttar Pradesh and Maharashtra, leading states in the industry in meat production, have covered most of the balance districts in their states under Assistance to States for Control of Animal Diseases (ASCAD)
- The sector is characterized by crude and unhygienic processing as far as domestic market is concerned. Modernisation of slaughterhouses is therefore top priority for the sector.

1.2 Poultry

- Poultry meat industry all over the world is growing fastest among all the meat categories. Consumers are increasingly preferring poultry meat to bovine meat due to health reasons. In fact, beef consumption has declined significantly in US over the last two decades, losing about 25% of the market share to pork and poultry. Increasing consumer preference for poultry meat can be attributed to growing consumer concerns related to health, hygiene, quality, safety, consistency, convenience and variety, red meat-borne illnesses (e.g. "mad cow" disease), and price-competitiveness vis-à-vis red meat.
- In India, too, poultry is the fastest growing segment at over 15% per annum, compared to the overall meat industry growth rate of 5% per annum. The estimated production is at 1.5 million tonnes, out of which around one third is from the organised sector.
- Per capita consumption of poultry meat is among the lowest. Low consumption of poultry products is attributed to socio-cultural and religious factors, high prices and low per capita income. High prices in turn are caused by high feed costs, low meat yield, inefficiencies, small scale operations and lack of modern processing facilities. Feed costs, which form 70-75% of the total cost, are almost four times as high as those of other countries, e.g., Brazil. A principal cause of these high costs is low yields of feed ingredients such as maize. Another reason why feed costs have remained high is the reservation of this sector for small-scale units. These units suffer from poor economies of scale and typically lack the resources to invest in modern technologies
- Further, majority of the poultry producers still belong to the unorganized sector with backyard rearing of birds numbering anywhere between 25 and 250. The current processing capacity remains low at around 25000 birds/hour. Also, most of integrated operations are concentrated in south and west of the country, with north and east lagging behind.
- The contribution of processed meat to the total value of meat production is therefore negligible. In developed countries, almost 100% of broilers produced are processed and sold as value-added products in the form of portions, boneless and further processed products. Even in countries like Thailand, Indonesia and Malaysia, most chicken sold is processed and branded. In India, however, poultry meat is a commodity product, and only about 2-3% of the total poultry meat produced is sold in the processed and branded form. Major reasons for this are consumers' preference for live chicken and inadequate infrastructure like lack of cold chains etc.
- Most of the poultry meat produced in India is consumed domestically. Only a very small amount of this is exported. High costs of production of Indian poultry products make them uncompetitive in the international market. Indian poultry meat is over 50% costlier than the average world price.
- The need for the industry is modernization of broilers (processing capacities) and an efficient supply chain. Investment in research on genetics, nutrition, automation, ambience and food safety are also necessary to increase yield and food value, shorten lead times for production of broilers and ensure preservation of the quality of meat products for longer periods. Poultry farms can be encouraged to enter into contract farming of corn, maize etc. required for processing of feed for chicks and broilers. Also,

better disease control and vaccines would be crucial not only in stimulating domestic demand but also developing exports.

1.3 Fish products

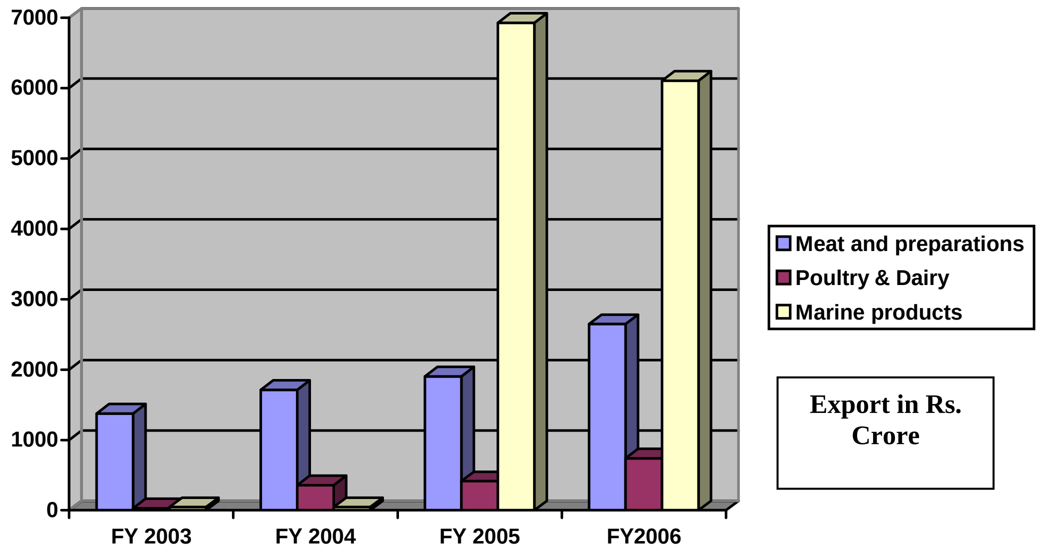
- The Fisheries sector has been regarded as a powerful income and employment generator. It is a large source of livelihood for economically backward population of the country and a stimulator for a number of subsidiary industries like boat building, fishing gears, fish processing etc. It is great source of cheap and good animal protein and an important source of foreign exchange.
- Potential of fish production from marine and inland sources has been estimated at 3.9 million tonnes and 4.5 million tones per annum respectively. The present fish production from marine and inland sources are at around 3 and 3.5 million tonnes respectively. India is ranked 7th among the fish producing countries of the world.The share of marine fish is coming down in total fish production from 60 % in 1990-91 to around 45 % presently.
- In terms of shrimp production, India occupies the 5th position in the world and in aquaculture, it is the largest producer after China.
- India has a share of 2.58% of the world seafood trade. During the year 2005-06, the exports of marine products from the country stood at 512164 MT with a value of US $1644.21 Million. Over 60% of the exports in the country is contributed by the mechanized sector and 7% by the traditional sector. The deep sea sector has a negligible contribution.
- The need of the hour is to give boost to inland fisheries. Most of the efforts till now have concentrated on aquaculture for increasing the productivity, training and welfare of fishermen, landing and berthing facilities etc. Post-harvest processing facilities and marketing linkages though remain the weak link. As spoilage of fish starts right from the time it is caught, the proper storage, preservation and prompt disposal and transport services are essential.
- Strengthening of post-harvest infrastructure such as storage facilities, ice plants, cold chains, roads and transportation, etc., as well as effective marketing system in identified areas are the vital requirements for the development of this sector. This would ensure high profit margins to the producers enabling fisheries and aquaculture development.
- Fish processing remains entirely export oriented as domestic market has a distinct preference for wet markets. Underutilisation of processing facilities and little value addition have to be addressed.

1.4 Dairy Products

- India is the leading producer of milk in the world with an estimated production of around 91 million tonnes. Over 70 per cent of the milk produced in the country is by small, marginal and landless farmers.
- While production in the sector is characterized by large number of small rural households, collection and processing of milk is more organized and is being done by large entities in cooperative and private sector. Dairy processing offers huge opportunities of further value addition.

2 Processing – the weak link

Across all these sectors, except for dairy, processing activity is very weak. There is little value addition and exports are also much below potential, as shown below.



A look at the above table shows that Marine products are the biggest export item even as export of poultry and dairy remain quite low. Also, while both Meat & Preparations and Poultry & Dairy Products are showing some growth, Marine Products are showing signs of stagnation and decline.

3 Existing Tenth Plan Schemes

- Promotion of Meat, poultry, fish and dairy processing units are presently being covered under general schemes of the Ministry as well as some specific schemes targeted at these segments.
- Scheme for Technology upgradation/establishment/modernization of Food Processing Industries provides assistance for setting up/ expansion/ modernisation of food processing units, which include meat, poultry, fish, and dairy processing units.
- It provides grant upto 25 % and 33.33 % of the plant & machinery and technical civil works in General Areas and Difficult Areas respectively (subject to a maximum of Rs. 50 lakhs and 75 lakhs respectively).
- Scheme for Infrastructure Development which provides grant for Food Park and Packaging Centre also caters to all food processing units including units relating to meat, poultry, fish and dairy. In addition, under this Scheme, there is a separate component catering to modernization of Abattoirs. The grant available is upto 25 % and 33.33 % of the plant & machinery and technical civil works in General Areas and Difficult Areas respectively (subject to a maximum of Rs. 4 Crores for modernizing the existing abattoirs). However, assistance for modernization of abattoirs is confined to local bodies.

- There are also other Schemes targeting Human Resources Development, Quality standards, R & D etc. for all food processing units.

4 Review of Existing Schemes

While response to most of the Schemes of MFPI has been below expectations, this has been more discouraging for meat, poultry and fish processing units, as shown below.

Items	Proposals Received	Proposals Approved	Amount (Rs. lakhs)
Meat and Poultry Products	77	21	763.95
Deep sea fishing & fish processing	111	59	1763.10
Milk Processing	141	53	1214.58
Sub	329	133	3741.63
Others	N.A	973	20887.88
Total		1106	24629.51

During last Five Year Plan, only 21 meat and poultry units have availed assistance under various schemes (till 31.08.06). The other two sectors of dairy and deep sea fishing and fish processing did performed relatively better with 53 and 59 units availing assistance respectively.

There has been virtually no progress in respect of Scheme for Modernization of Abattoirs during entire Tenth Plan period with only 1 unit availing assistance against a targeted 5.

5 Constraints Analysis

- One of the reasons for low response to the schemes is presence of multiple authorities for the sector. For dairy processing, there is National Dairy Development Board, which acts as the apex agency for dairy development and processing activities in the country. In addition, there is Department of Animal Husbandry, Ministry of Agriculture, which is engaged in overseeing progress in dairy, poultry, fish and meat. APEDA is also promoting exports in these identified sectors with its own schemes. Finally, MPEDA has its own range of schemes targeted at promoting processing in the fishery sector.
- It has been observed that regulations like Meat Food Products Order (MFPO)/ Licensing requirements may also be coming in the way of more meat processing units being set up in the organised sector. MFPO is also not comprehensive, as it covers frozen meat but does not apply to chilled products. No review of the MFPO has been carried out after discussing with stakeholders. The existing procedure for inspection and monitoring is also archaic.
- Small unregistered slaughtering houses are a big constraint in the growth of meat sector and have to be regulated. Due to their large numbers, it has not been possible to regulate these units with the limited infrastructure available with the state and central governments.

- Modernisation of Abattoirs, which should be clearly the first priority in meat sector, has also lagged behind. Barring a few attempts in the private sector, most of the attempts at modernization of abattoirs have failed and it is being realized that present Scheme's stress on local bodies like municipalities may not be the right strategy to modernize and manage Abattoirs.
- Fish processing is another area, which is not showing enough progress. Surprisingly, fish processing capacity in the country is grossly underutilized and there is need for modernization/upgradation of facilities, rather than addition of capacity.
- In the seafood sector, testing of water quality parameters, antibiotic residues, pesticides and a host of other pharmacologically active substance for which the maximum residue limits have been prescribed calls for substantial investment for installation of equipments like ICP, HPLC, GC, HPLC MSMS etc. It is virtually impossible for seafood units to set up these facilities on their own.
- More than quantum of subsidy, which is also less compared to some of the other Schemes by Govt. of India (e.g. IIUS, SITP), there is need of project development in these sectors. As these sectors are mostly unorganized, issues like information dissemination to the prospective entrepreneurs need to be given priority. This component is mostly missing in the present scheme.
- For any successful strategy, technical and financial issues have to be addressed comprehensively. Credit availability has always been difficult for entrepreneurs engaged in identified sectors and has hampered response to the Schemes.

6 Action Points

- The starting point has to be identification of priorities for MFPI. For a sector like dairy, higher level of processing has to be promoted. Stress here has to be on value addition in coordination with NDDB and other agencies.
- Meat, poultry and fish processing may be considered priority areas considering low level of organised interventions in these sectors. Also, these sectors have a huge potential, which lie untapped.
- Modernisation of Abattoirs must be regarded top of the agenda for 11th FYP, as this alone can make a significant turn around of the meat sector. The modernization process has to be carried out with a new strategy. Public Private Partnership (PPP) approach will be adopted which is already a success in various infrastructure projects across the country.
- It is proposed that Ministry may take up 50 projects of modernization of Abattoirs all over the country during next FYP
- It may also be examined whether Rural Abattoirs are more feasible as it is increasingly being seen that any abattoir project in urban areas faces strong resistance from neighbouring communities. The location of Abattoir will therefore be carried out on a purely commercial basis, based on availability of land and animals, nearness to markets etc.

- Also, mutton and lamb meat, which is mostly consumed in domestic market, stands largely ignored by the large players in industry. Consequently, this has fallen almost entirely in the unorganized sector raising serious issues of hygiene and food standards. This component needs more attention in promoting infrastructure for processing.
- Poultry processing, though relatively well organised, also suffers from lack of adequate infrastructure. Modern broilers and cold chain facility can further accelerate the growth of poultry meat, as people increasingly prefer lean meat for health reasons.
- It is proposed to constitute a dedicated Board to guide the healthy development of this sector. While there are multiplicity of authorities to oversee different components of the sector, there is little coordination in efforts and often this sector has taken a back seat in the priorities in these agencies.
- Modernisation of Fish processing and value addition in the sector may also be given due importance and for this there is need of a coordinated effort with MPEDA. MPEDA is coming out with a scheme called 'Technology Up-gradation Scheme for Marine Products' (TUSMP) which will provide credit linked interest subsidy for modernization of fish processing facilities. Under the TUSMP scheme of MPEDA the beneficiaries have been grouped into three categories:

    Category I - New processing units set up for production of low / high-end value added marine products. Eligible for a maximum of Rs.100 lakh as interest subsidy on capital loan @ 5 percentage points.

    Category II - Processing units already engaged in production of value added products and going for expansion for low / high end value added products by acquisition of required machinery. Eligible for interest subsidy (on term loan as well as working capital) @ 5 percentage points subject to a maximum of Rs. 75 lakh.

    Category III - Processing units engaged in production of traditional block freezing and interested in going for low / high end value added products. Eligible for interest subsidy (on term loan as well as working capital) @ percentage points subject to a maximum of Rs. 75 lakh.

Once the scheme is approved by the Ministry of Commerce, MPEDA will give assistance only for Technology Up-gradation specifically for the production of value added products. MFPI may join such efforts to strengthen the impact on the industry.

- Across the sectors, but more in meat, poultry and fish processing, adoption of food standards like HACCP have to be encouraged.
- Further, the possibility of a dedicated venture capital fund may also be considered to cater to the above sectors.
- A Technology Bank for the sectors may also be considered which would be a repository of information on all available processing technology and may also facilitate technology transfer both within and from outside the country.
- Across the sectors, there would need to be stress on project development and capacity building inputs for entrepreneurs, most of who are small and unorganized.

- Possibility of a Project Management Agency may also be considered which can be entrusted with the task of project development and facilitating implementation of projects identified for assistance. Project development process may involve identification of entrepreneurs, a feasibility study of the projects and coordination efforts needed for smooth implementation of projects.
- Finally, identification of prominent meat/fishery/poultry clusters may be done and an integrated cluster development strategy may be formed during next FYP.

7 Proposals for Eleventh Five-Year Plan Schemes

7.1 Scheme for Technology Upgradation/ Establishment/ Modernization of Food Processing Industries

The existing scheme for Technology Upgradation/ Establishment/ Modernization of Food Processing Industries provides assistance to implementing agencies engaged in the setting up/ expansion/ modernization of food processing industries covering all segments including F&V, milk products, meat, poultry, fishery, oil seeds and other such agri-horticultural sectors. A summary of sectoral utilization under the Scheme for Technology Upgradation/ Establishment/ Modernization of Food Processing Industries (upto 31-08-06) can is presented in the Table below.

Detail	Proposals received	Proposals approved	Amount (in Rs. lakhs)	% Utilization by sector
Bakery products	122	42	920.57	3.7
Consumer industries	201	43	995.2	4.0
Deep sea fishing and fish processing	111	59	1763.1	7.2
Flour milling	181	69	1526.16	6.2
F&V	786	203	3976.36	16.1
Grain processing	42	2	1.73	0
Meat and poultry products	77	21	763.95	3.1
Milk processing	141	53	1214.58	4.9
Oil milling	294	69	1995.12	8.1
Others	619	242	6429.62	26.1
Pulse milling	147	43	509.98	2.1
R&D	267	65	2044.9	8.3
Rice milling	687	122	2358.08	9.6
Sect. Economic Services	256	73	130.16	0.5
Total	3931	1106	24629.51	

As can be seen from the table, sectors based on perishable raw material including deep-sea fishing and fish processing, F&V products, meat and poultry products and milk processing have utilised only 31% of the total assistance provided under the scheme during the Tenth Five Year Plan (till 31.08.2006). Almost two-thirds of the assistance under the scheme has been utilised by sectors based on raw materials with longer shelf life including flour milling, oil milling, pulse milling, rice milling and consumer industries among others.

Considering the current high levels wastages of perishables (wastages in F&V are estimated at 35%), the capital intensive nature of Food Processing Industries based on agriculture and the potential of the sector for generating rural employment, it is proposed that the level and quantum of assistance under the scheme for the following sectors be increased:

- Deep sea fishing and fish processing
- F&V
- Meat and poultry products
- Milk processing

The increase in levels of assistance for industries based on meat, poultry and fish is also justifiable based on the fact that these units are mostly export oriented where quality issues and issues like FMD are very crucial. To encourage adoption of international quality standards by these units would require higher levels of assistance.

Therefore to incentive upgradation/ establishment and modernization of units based on perishables, it is proposed to increase the assistance level to 50% of the cost of plant and machinery and technical civil works subject to a maximum of Rs. 3 Crores in General Areas and 75% upto Rs. 4 Crores in Difficult Areas.

7.1.1 Decentralized Approach

With a view to provide for improvement of processing capabilities it is planned to implement the scheme for Technology upgradation/expansion/ modernization/ through a decentralized approach. Grant under the Scheme shall be available for such projects where term loans or working capital loans have been sanctioned by Nodal Banks/PLIs. The Lending Institutions may follow their own norms regarding promoter’s contribution, rate of interest, period of repayment, security etc. while appraising the project. In order to ensure efficient running of the unit in a professional manner, the Lending Institution may stipulate conditions relating to broad-basing of the Board, appointment of professional management, senior technical/financial experts etc., as considered necessary. With effect from the date of notification of the revised scheme, the existing State Nodal Agencies (SNA) will not entertain any new application under the old procedure and the applicants will be advised to submit their applications for assistance to the Banks/PLIs.

To begin with, it is proposed that the following would be Nodal Banks for operation of the Scheme:

- State Bank of India
- Canara Bank
- Punjab National Bank
- Andhra Bank
- Central Bank of India

- Bank of Baroda
- State Bank of Bikaner & Jaipur
- UCO Bank
- Bank of India
- SIDBI

The Nodal Banks may co-opt other Co-operative/Commercial/ Regional/Rural Banks/Financial Institutions as Primary Lending Institutions (PLIs). The MFPI will place funds with the Nodal Banks towards reimbursement of grants to the units on a quarterly basis in advance.

The Government shall constitute an Empowered Committee under the Chairmanship of the Secretary, MFPI to lay down norms and guidelines for operationalizing the scheme, providing directions for its effective implementation, periodically reviewing its functioning and taking necessary corrective measures/policy decisions. Such guidelines will be in addition to those laid down by the Nodal Banks/PLIs for assessing the techno-economic feasibility, commercial viability and bank-ability of the proposals submitted by prospective units under the scheme.

The Government shall also constitute a Technical Advisory cum Monitoring Committee under Chairmanship of Joint Secretary, MFPI to take decisions/provide clarifications on any issues raised by SNAs /Nodal Banks/Primary Lending Agencies etc. and coordinate and sort out any inter-bank and Lending Institution - Nodal Banks issues. It will refer issues involving policy matters to the Empowered Committee for a decision along with its recommendations. The Committee will encourage that the food products under the Scheme, meet the minimum standards of human safety, hygiene and product specifications under the relevant rules and regulations (FPO, MFPO, MMPO, PFA etc.) The Committee will also review the progress of the scheme and critically analyze the operation thereof and sort out administrative and operational bottlenecks. The committee shall also set up technical bench marks over a course of time.

7.2 Policy Issues: Constitution of a National Meat Board (NMB)

It is proposed to set up a National Meat Board for overseeing the growth and further promotion of Meat and Poultry sector in the country. This has been considered necessary because of a felt need for a focused intervention in meat and poultry sector. One of the reasons identified for slow and unregulated growth of the sector is that of multiplicity of authorities and lack of promotional component in the present schemes being operated for the sector. Setting up of NMB would address this key weakness by acting as the apex agency for the sector and focusing on overall development of the sector.

As experienced in the case of Commodity Boards (Rubber Board, Tea Board, Coffee Board etc.) and other autonomous organizations like NDDB and National Fisheries Development Board, a Board structure including all stakeholders has been proved to be effective in undertaking a holistic view of a sector and devising an integrated approach to promote it. This becomes possible due to elements of autonomy and empowerment available to a Board. NMPB should be therefore successful in revitalization of meat and poultry sector in the country.

The following will be the mandate of the board (i) lay down polices for healthy development of the sector (ii) evolve standards of hygiene and quality. (iii) support R&D (iv) organize capacity building efforts (v) implementation of scheme on modernization of abattoirs on PPP basis.

8 Proposed Financial Outlay*

Component	Proposed Outlay (Rs. Crore)
Technology upgradation/ Establishment/ Modernisation of Food Processing Industries**	600
National Meat Board	10
Total	**610**

*Outlay for Scheme for Modernization of Abattoirs included in the Chapter on Infrastructure for Food Processing Industries

**Including all sectors of food processing

Chapter 4: Report of the Eleventh Five Year Plan Sub-Group on Fruits and Vegetables, Wine and Beer

1 Overview of the Fruits and Vegetables Sector

India with its wide variability of climate and soil, produces a wide range of horticultural crops including fruits and vegetables. Fruit and vegetable crops have been identified as a means of diversification for making agriculture more profitable, through efficient land use, optimum utilization of natural resources and creating skilled employment for rural masses especially womenfolk. Recent efforts have been rewarding in terms of increased production and productivity and availability of much larger volumes of fruit and vegetable crops. As a result India has emerged as the second largest producer of fruits and vegetables in the world.

1.1 Fruits

A large variety of fruits are grown in India. India produces over 46 million tonnes of fruits accounting for around 10% of the world's production. The country ranks first in mango, sapota and acid lime, and in recent years recorded the highest productivity in grape. Some important fruits of India can be seen in the table below:

Tropical and sub-tropical	Mango, banana, citrus, pineapple, papaya, guava, sapota, jackfruit, litchi and grapes
Temperate	Apple, pear, peach, plum, almond and walnut
Arid Zone	Aonla, ber, annona, fig, phalsa

The area and production of major fruit crops can be seen in the table below.

Area under and Production of Major Fruit Crops

Crop	Area (In Million Ha)	Production (In Million Tonnes)	Percentage in total production
Banana	0.62	16.45	35.3
Mango	1.56	10.64	22.8
Citrus	0.56	4.58	9.8
Papaya	0.07	1.82	3.9
Guava	0.19	1.68	3.6
Apple	0.25	1.42	3.0
Pineapple	0.08	1.26	2.7
Grapes	0.06	1.10	2.4
Litchi	0.05	0.42	0.9

Source: Ministry of Agriculture, GoI

Mango is the most important fruit covering 39 percent of the area accounting for almost 23 percent of total fruit production in the country. India's share in the world production of mango is about 54 percent. Banana ranks second in area covering about 13 percent of total area. Banana contributes nearly one-third of the total fruit production. Citrus ranks third in area and accounts for about 10 percent of the country's fruit production. Apple is another major fruit in the country with production of about 1.42 million tonnes. There has been steady increase in the area, and production of arid zone fruits particularly aonla, ber and pomegranate as a result of identification and development of suitable varieties and production technologies.

1.2 Vegetables

Table: Area and Production of Major Vegetable Crops

Crop	Area (In Million Ha)	Production (In Million Tonnes)	Percentage in total production
Potato	1.41	24.00	24.9
Brinjal	0.50	7.80	8.1
Tomato	0.52	7.42	7.7
Cabbage	0.27	5.70	5.9
Onion	0.52	4.85	5.0
Cauliflower	0.27	4.70	4.9
Okra	0.36	3.42	3.5

Source: Ministry of Agriculture, GoI

Vegetables constitute the most important item of food next only to cereals and milk. India produces almost 100 MT of vegetables. Important vegetable crops grown in the country are potato, tomato, onion, brinjal, cabbage, cauliflower, okra and peas. India occupies the first position in the production of cauliflower, second in onion and third in production of cabbage in the world.

Brinjal is a major vegetable crop, and is available, like potato and onion, almost throughout the year. It contributes about 8.1 percent of the total production of vegetables followed by tomatoes (7.7 percent) and cabbage (6 percent). Among root and tuber crops, India ranks fifth in the world in area and production of potatoes and tops with 24 percent share in total vegetable production.

2 The Fruit and Vegetable Processing Sector

The premier position in production though is not reflected when it comes to processing and value addition in fruits and vegetables. Fruits and vegetables have a very short shelf life. The level of processing that they undergo may be primary, when fresh fruits and vegetables are just packed and branded or secondary when they are converted to pulps, juices, pickles, concentrates etc. Currently, only 2 percent of the fruits and vegetables in India go through the processing route. Secondary processing is even lower at 1.3%. The current wastages in fruits and vegetables are estimated at about 35%, the value of which is approximately Rs.33,000 Crore annually. In the absence of pre cooling arrangements in the farm, the farmer is not in a position to grade and store his produce in anticipation of a better price. As soon as the crops are harvested, they have to be rushed to the market or sold to the first available buyer or *arhtia* leading to a decline in prices during harvest time. Even when the crop is harvested and it is to be transported to the market, this is done in the most rudimentary fashion. In the absence of reefer vans and trucks, horticultural and agricultural produce is transported in sacks resulting in damage to fruits. It has been estimated that nearly 30-40% of the fruits get damaged during the transportation considerable reducing the realization by farmer. Aggregation of produce is also done at various points by a number of dealers leading to further weeding out of damaged fruits. Processing is undertaken only if fruits and vegetables are surplus to the requirements. The quantity and quality available for processing, therefore, varies depending on the size of the crops and the requirements of consumption. The practice of producing solely for processing is to a large extent absent.

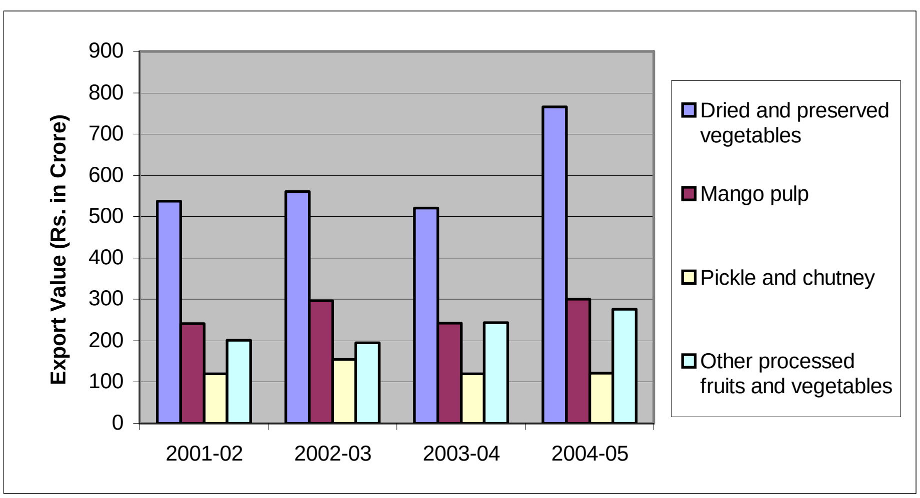
This compares poorly with processing levels for fruits and vegetables of 23 percent in China, 30 percent in Thailand and 65 percent in USA. Even, within the country, share of fruits and vegetables processed is much less when compared to other agricultural products such as milk (35%) and Marine Products (26%).

The installed capacity of fruit and vegetable processing industry in 2005 was 2.12 million tonnes only as against a total production of fruits and vegetables of almost 140 million tonnes. Over the last few years a positive growth has been seen in the ready to serve beverages, fruit juices and pulps, dehydrated and frozen fruits and vegetable products, tomato products, pickles, convenience veg-spice pastes and processed mushrooms. However, the domestic consumption of value added fruits and vegetables remain low compared to primary processed foods in general and fresh vegetables and fruits in particular.

2.1 Exports

On the export side, India has negligible share in global exports of processed fruit and vegetable products. Growth in exports of processed fruits and vegetables has also been slow, at 7% in the last decade (Fig. 2 shows growth in exports of processed fruits and vegetables in the last few years). Processed fruits and vegetables to the tune of 589977 MTs valued at INR 1462.72 crores, were exported from India in the year 2004-05.

Growth in Export of Processed Fruit and Vegetable Products (2001-02 to 2005- 06)



China's Rising Profile in the Global Market for Fruits and Vegetables

China has raised its profile in global fruit and vegetable markets. The export value of China's fuits and vegetables (including fresh fruit, fresh vegetables, processed fruit and vegetables, fruit and vegetable juices, pulses, and tree nuts) during 2002-04, were more than double the value from a decade earlier, from $2.3 billion to $5.1 billion. Chinese fruit and vegetable exports are mainly processed products, accounting for 60 percent of the total value of fruit and vegetable exports in 2002-04 and about 12 percent of global trade.

Since 2003, China's apple exports have surpassed those of the United States and have made inroads into major U.S. export markets in Asia. China's export markets for fruits and vegetables are mainly in Asia. More than 40 percent of processed fruit and vegetable exports by value go to Japan. China's apple juice exports, in contrast, have a worldwide market with most juice exports shipped to countries outside Asia.

China's export competitiveness arises from:

- Market oriented reform policies that encourage fruit and vegetable production.
- Low production costs
- Growing processing industry- investment by vegetable and fruit processing companies encouraged by often providing tax breaks, inexpensive land, or other concessions. Environmental and other regulatory compliance costs for food processors in China are also much lower than in the United States and other developed countries.

3 Opportunities for Fruit and Vegetable Processing Industry

India has moved away from subsistence levels of production of fruits and vegetables to a stage where surpluses are available though in specific pockets. India's share in some of the agricultural and horticultural produce in the world is as follows:

Fruit/ Vegetable	Percentage share in global production
Mangoes	54%
Cauliflower	30%
Bananas	23%
Green peas	36%
Onions	10%

Surplus production has brought in localised marketing difficulties accompanied by increases in levels of wastage to the tune of 35%. As a result farmers have not been getting remunerative prices for their produce. Further by 2010, the National Horticulture Mission targets to increase the production of fruits and vegetables to 260 MT from the current 140 MT. To gainfully utilize the increased production of fruits and vegetables, they need to be processed for domestic as well as export markets. Not only will this increase the income level to farmers, but also increase the shelf life of vegetables and fruits thereby reducing wastages.

4 Issues in Focus

4.1 R&D

Lack of varieties suitable for processing: Varietal constraint is one of the major factors associated with several fruits and vegetables. Many varieties of fruits and vegetables are unsuitable for either export or processing. Cases in point are Nagpur oranges and Mangoes from Malihabad.

Malihabad Mangoes

Malihabad in Uttar Pradesh, just 30 kms. away from Lucknow is the mango capital of India. Malihabad grows traditional varieties of mango for last 300 years. However, Malihabad mangoes represent lost business, since there is hardly any processing or exports of these mangoes, reasons being:

- Mangoes grown here have a short shelf life, which prevents their transport over long distances.
- They are too sweet for the international palate

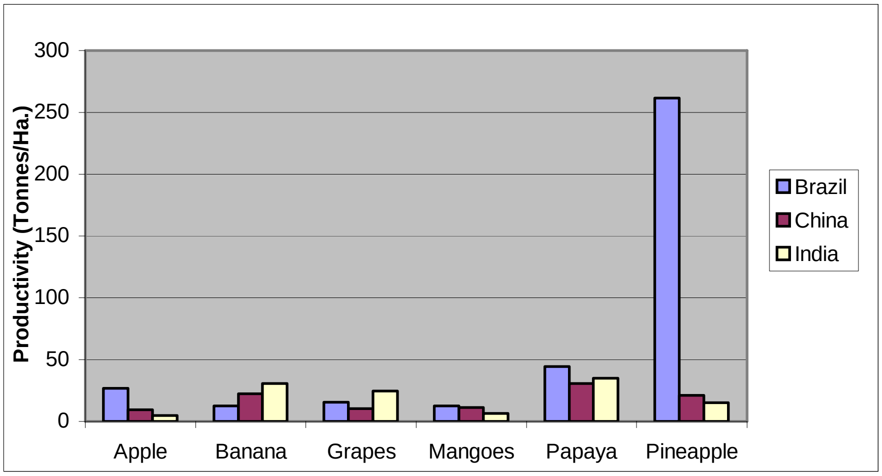
The main reason for lack of suitable processable varieties is the disconnect between R&D, market and extension machinery of the government. As a result, R&D is carried out in isolation, without alignment to market requirements. Further, due to ineffective extension machinery, farming systems and technologies, they are not effectively disseminated and commercialized. Often, research has also failed to offer scaleable models.

Nagpur Oranges

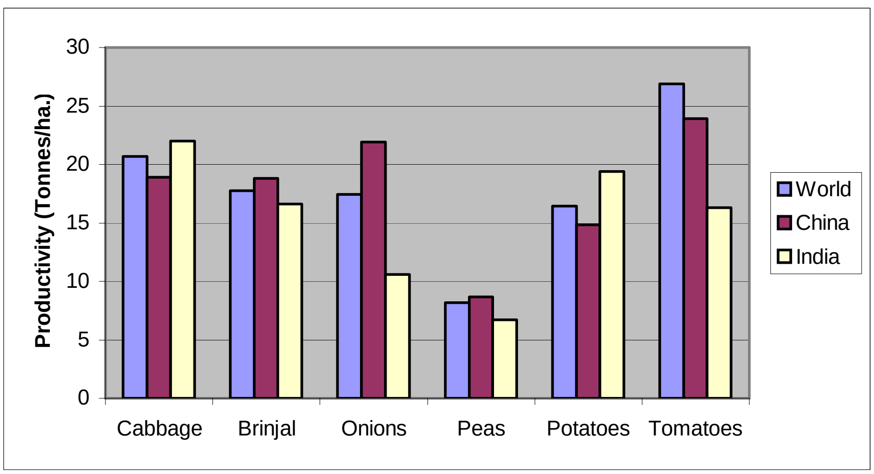
Oranges from Nagpur is an instance where though there are gluts at harvest time, processing has not taken off due to want of processable varieties. The oranges from Nagpur have high bitterness level and pip content which renders them unsuitable for export or processing.

Low productivity levels: Indian yields are lower when compared to other key producers of F&V like Brazil and China (Fig 3&4). Exceptions can be seen in the case of Grapes and Banana, where the yields are amongst best as a result of introduction of new high yield varieties and their adoption by farmers. However in fruits like mango, farmers continue to grow low yielding varieties.

Productivity of fruits: Comparisons between Brazil, China and India



Productivity of vegetables: Comparisons between world, China and India



Short Production Season for Vegetables and Fruits: Short production season for Fruits and Vegetables restricts availability of raw material for F&V processing industry. Due to this seasonal nature, assets remain idle over long periods of time. Stretching the production season of many fruit and vegetable crops will have the potential to dramatically affect availability of raw material for F&V processing industry. Increased use of technologies to stagger flowering, varietal changes etc. will become necessary to achieve these.

Packaging: Another area of concern for R&D is the packaging sector. Cost of packaging currently forms 35-40% of the end product cost. High quality packaging calls for expensive raw material and machinery. Research on packaging therefore needs to focus on arriving at low cost solutions besides permitting import of packaging material, machinery at low rates of duty.

4.2 Marketing

4.2.1 Domestic Marketing

Sale of F&V as most other agricultural commodities is regulated under the Agriculture Produce Marketing Committees Act (APMC Act). In most states, the APMC Act did not allow transactions outside the *mandi*. Even in states that allow transactions outside the *mandi,* the Act stated that while procurement may be direct, companies needed to pay a *mandi* tax even if the *mandi* infrastructure is not utilized.

The APMC Acts of different states have become a stumbling block for markets seeking to scale up operations. Hypermarkets seeking to source bulk quantities of food and grocery have to work through intermediaries in APMC markets, and cannot deal with the farmer directly. Further, marketing of farm produce under the Act was controlled by '*arhatiyas,*' or commission agents.

The market fee charges on value of produce sold do not reflect actual cost of the wholesale market and it is seen as another tax on agricultural commodities. As per the Act, waiving of market fees would only apply to specified products sold under contract farming. Direct sales would still be subject to market fee and direct buying from the farmer's premises would require a license from the State Government.

Abolition of APMC Act would facilitate free movement of agricultural produce between different States. It is necessary to ensure that collection of all additional fees and cess in the market be withdrawn and alternative sources of revenue found for the same. Though 18 states have approved amendments to APMC Act, in most of the states, rules are yet to be notified.

States such as Madhya Pradesh, Rajasthan and Uttar Pradesh had amended the APMC Act, permitting companies such as ITC Ltd to set up its e-choupal network to procure goods. The Karnataka government has already permitted the National Dairy Development Board (NDDB) to set up an 'integrated produce market' at Bangalore for marketing fruits, vegetables and flowers. Maharashtra is also in the process of amending the APMC Act on lines of provisions in the Model Act. It would take some time for the other states to implement the model APMC Act, primarily because of their reluctance to change the existing supply lines and fear of loss in revenue collection.

4.2.2 Export Marketing

Indian exports primarily comprise of F&V in the raw form and primary processed products, with low price realizations. Processed fruit and vegetables have shown a low CAGR of 7 percent. Key barriers to exports include:

Price competitiveness	Wide fluctuations in prices of Indian F&V products as compared to South America, which offers more stable prices.
Distance	Freight cost and shelf life are key constraints to success in export markets for many F&V
Phytosanitary requirements	In the post WTO period, especially since 1996-97, the complexity of SPS regime has significantly constrained market access in developed countries for

	Indian F&V products.
Climate and seasonality	Subject to seasonal fluctuations and short season of availability
Small size of industry and participants	There is a need to have a certain turnover to be viable as an export operation. Indian exporters lack scale and hence competitiveness. This leads to low investments in upgrading skill and quality, product innovation and brand building
Fragmented nature of the industry	The industry is fragmented. Hence, exporters are unable to establish themselves as long-term players
Raw material supply and quality inconsistencies	Quality raw material for processing value added F&V meeting international standards is not available. Even when available, the cost of raw material is very high
Certification	Increased compliance costs and lack of established quality parameters.
Lack of market intelligence and statistical data	Lack of information about international requirements to a large number of producers
Packaging	Poor packaging due to high costs and low innovation in packaging

New Zealand fruit and vegetable industry

New Zealand could be described as a horticultural heaven, combining natural advantages with human innovation and expertise and world leading technology to produce and export an array of premium fruit and vegetable products. The top five horticultural exports are kiwifruit (27%), apples (20%), wine (14%), total fresh vegetables (12%), total frozen/processed vegetables (12%). Onions (41%) and squash/Kabocha (27%) dominate fresh vegetable exports. The two main exports, kiwifruit and apples, are both world leaders. This international success has been achieved through:

- A programme of continuous research and development- continuing stream of new varieties that anticipate and meet the changing needs of consumers. New Zealand was first to the world market with products such as Braeburn and Royal Gala (now grown the world over) and ZESPRI™ Gold. Research is also producing fruits with greater health benefits and consumer convenience, such as citrus fruit with easily peeled rind, seedless ness and increased size.
- More recently world class innovation in marketing and branding.

New Zealand is a major exporter of processed fruit and vegetables. Leading edge technology such as snap freezing vegetables to protect them from nutrient loss and to retain flavour gives this sector a competitive advantage. New Zealand is pioneering the development of organic fresh and processed fruit and vegetables. Organic exports exceed $70 million annually, with major products being kiwifruit, processed vegetables and apples.

4.3 Infrastructure

Inadequate infrastructure has been identified as a major constraint in the growth of fruit and vegetable processing industries. 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.

Government of India has been implementing several schemes for facilitating creation of infrastructure for food processing including the following components relevant for F&V processing sector:

- Food Parks
- Packaging Centers
- Integrated Cold Chain Facility
- Value Added Centers and
- Irradiation Facilities.

A review of these schemes and proposals for their revisions, based on reasons for their poor take off are presented in Chapter 2 of this report.

4.4 Tax Regime

High incidence of taxation in processed agricultural products not only acts as a disincentive for investment in the sector but also affects the competitiveness of the food products in the country. Though primary agricultural commodities including fruits and vegetables are mostly exempted from tax, processed food commodities are subject to a Central Sales Tax of 4 %. Under Value Added Tax (VAT), levied by State Governments, most processed food products are taxed at 12% to 13%. Apart from VAT other state taxes such as entry tax, octroi etc are also levied on food products.

Though there has been a substantial rationalization of taxes in fruit and vegetable processing sector in the country, notably since 2001-02 when Central Excise Tax (CET) on processed fruits and vegetables were reduced from 16% to 0%, high taxes/ duty on raw material for packaging, packaging machinery and raw materials still affects the growth of the food-processing sector in general and F&V processing industry in particular. Packaging materials such as glass bottles, jars, caps and closures, plastic jars, shrink-wrapping are at present levied 16% CET. The existing Import Duty on raw material for packaging (Prime tin plate, aluminum foil, paper board etc is very high (25 to 44%). Similarly, machinery for packaging attracts 20-25% duty. Cold chain infrastructure is the lifeline for the sustenance of food processing for perishables such as F&V. CET on the cold chain equipment is currently a high 16%.

5 Review of existing schemes and proposals for their revision

5.1 Scheme for Technology Upgradation/ Establishment/ Modernization of Food Processing Industries

The existing scheme for Technology Upgradation/ Establishment/ Modernization of Food Processing Industries provides assistance to implementing agencies engaged in the setting up/ expansion/ modernization of food processing industries covering all segments including F&V, milk products, meat, poultry, fishery, oil seeds and other such agri-horticultural sectors.

Assistance under the scheme is provided in the form of grant of 25% of the cost of plant and machinery and technical civil works subject to a maximum of Rs. 50 lakhs in General Areas and 33.33% upto Rs. 75 lakhs in Difficult Areas.

On a review of the Scheme for Technology Upgradation/ Establishment/ Modernisation of Food Processing Industries, it is seen that sectors based on perishable raw material including deep-sea fishing and fish processing, F&V products, meat and poultry products and milk processing have utilised only 16% of the total assistance provided under the scheme during the Tenth Five Year Plan (till 31.08.2006). Against 786 proposals received, approval has been accorded to 203 projects. The total grant utilised was Rs. 39.76 Crore. On the other hand, almost 85% of the assistance under the scheme has been utilised by sectors based on raw materials with longer shelf life including flour milling, oil milling, pulse milling, rice milling and consumer industries among others.

Considering the current high levels wastages of perishables (wastages in F&V are estimated at 35%), the capital intensive nature of Food Processing Industries based on agriculture and the potential of the sector for generating rural employment, it is proposed that the level and quantum of assistance under the schemes for supporting F&V sector may be increased.

Increasing the levels of assistance would also align the scheme with similar schemes under National Horticulture Mission and Technology Mission for the Integrated Development of Horticulture in North Eastern States, Sikkim, Uttaranchal and Jammu and Kashmir.

Therefore to incentive upgradation/ establishment and modernization of units based on perishables it is proposed to increase the assistance level to 50% of the cost of plant and machinery and technical civil works subject to a maximum of Rs. 3 Crores in General Areas and 75% upto Rs. 4 Crores in Difficult Areas.

A financial outlay of Rs. 600 crores is proposed under the scheme for the Eleventh Five Year Plan.

6 Strategy

The following strategy is recommended for Schemes proposed for the Eleventh Plan.

6.1 R&D

- Linkages are needed between R&D institutions, farmers, extension machinery and industry. Based on preferences of Indian consumers and export demands, R&D institutions need to address parameters of varietal relevance including physical, chemical, taste, flavour & spoilage. Research needs to be able to further offer scaleable models, which are effectively disseminated, commercialized and adopted by farmers.
- R&D also needs to focus on stretching the production season of many fruit and vegetable crops. This can contribute to increase availability of raw material over longer periods, resulting in utilization of assets over longer season, and resultant increase in overall profitability.
- SHG or Neighborhood Groups (each group with 10-20 farmers) proposed in the Food Park Scheme in the food/ vegetable production system can act as agency for transfer of

technology, adopting best practices to improve productivity and quality to meet the market needs.

- These new varieties can be introduced, in association with private sector players to overcome the limitations of traditional extension machinery and provide an assured market to farmers for their produce.
- Research on packaging needs to be stepped up to arrive at cost-effective superior packaging technology, which enhances shelf life, protects food, is internationally acceptable and has no deleterious effect on the environment and health

6.2 Market-Domestic and Export

Review of the provisions of the APMC Act to facilitate direct contacts between the farmers and the processors. Draw up rules and regulations for implementation in the states.

- Brand building, market intelligence and a continuous watch on areas of emerging competitiveness
- Indian food standards to be aligned with international standards like Codex to the extent possible.
- Training in GMP, GHP, HACCP

6.3 Infrastructure

- Foster public-private partnerships for infrastructure creation and technology upgradation
- Involve Project Management Agencies to assist the Ministry in implementation of the Projects
- Cluster approach to be adopted to deal with the fragmented holdings and SMEs which dominate the sector
- Facilitate development of integrated cold chain (from farm to market) by providing incentives to private investment.

6.4 Taxation

- On Food processing equipment, plant and machinery manufactured locally Central Excise Tax may be reduced from 16% to 8%.
- To encourage investment in cold chain infrastructure, investments in it may be given a tax holiday for 5 years. Cold chain equipment may be exempt from CET. Customs duty on cold chain may also be reduced from 12.5% to 5%.
- It is suggested to reduce excise duty on OTS cans for food products from 16-8%.
- A single flat tax rate under VAT may imposed on all food items across states. This needs to be taken up with the Empowered Committee of Finance Ministry.
- Current income tax exemption of 100% in the first 5 years and 25% in the next 5 years may be continued for newly set-up food processing plants in general and F&V plants in particular.

Organic Food

The agencies involved in various aspects of organic farming in the country include APEDA, MPEDA, National Centre of Organic Farming in the Ministry of Agriculture and number of agricultural experts and farmers' groups operating in various parts of the country. According to a survey, about 5000 organic farmers were operating in India in 2004 managing 37000 hectares of land, which is only 0.03% of total agricultural area. India's share of world market in organic food is less than 0.1%. The major problems faced by organized farmers are initial lower yields, no price incentives, no separate markets for organic produce, besides high cost of certification. Some of the major organically produced agricultural crops in India include plantations, spices, pulses, fruits, vegetables and oilseeds.

There is a growing demand of organically produced commodities in advanced countries, which attract price premiums ranging from 10 – 100%. This points to a window of opportunity, which is yet to be exploited to the maximum potential by India's exporters and producers of agricultural commodities.

At present, there are 6 accreditation agencies approved by the Government of India for the certification of organic food. These include APEDA, Coffee Board, Spice Board, Tea Board, Coconut Development Board and Coco and Cashew Nut Board. There are 11 certification agencies accredited under the National Programme for Organic Production.

The Ministry proposes to constitute a small group from the various players in the organic area to draw up and monitor a framework for development of organic food industry on a systematic basis. It will endeavour to pull together the various disjointed efforts by different agencies, outline a series of milestones to be achieved by industry and other stakeholders for quality upgradation and certification and address the issues hindering expansion of the area and production of organic produce.

7 Action Plan

It is proposed to identify fruits and vegetables, with potential for processing, in specific geographical areas. The effort would be to put in place a model supply chain, which will try and address the supply chain constraints by bringing R&D institutes, extension machinery, farmers, traders and processors together This will enable the farmer to integrate production with market demand by ensuring that research and market information and incentives reach the farms.

Production centres for some fruits and vegetables where model supply chains may be developed are indicated below:

Mango	Ratnagiri in Maharashtra, Malihabad and Saharanpur in UP, Chittoor in AP, Dharmagiri in TamilNadu, Malda in West Bengal and Darbhanga in Bihar
Banana	Jalgaon in Maharashtra, Khandwa and Khargone in Madhya Pradesh

Litchi	Muzafarpur in Bihar, Baruipur in West Bengal & Dehradun in Uttaranchal
Pineapple	Tripura, Siliguri & Jalpaiguri in West Bengal, Goa
Guava	Allahabad and Lucknow in U.P.,
Grape	Nasik and Sangli in Maharashtra, Rangareddy in Andhra Pradesh and Bangalore , Kolar and Bijapur in Karnataka
Mandarin orange	Nagpur in Maharashtra, Coorg in Karnataka and Shillong in Meghalaya
Aonla	Pratapgarh and Varanasi in U.P.
Potato	Burdwan and Hooghli in West Bengal and Farukhabad in U.P.
Onion	Nasik in Maharashtra

8 A Supportive Policy for the Development of Wine Industry

The mandate of MFPI includes assistance to food processing industry units including wine industry units for setting up of new units and expansion/upgradation of existing units. Ministry proposes to promote wine industry, which will benefit the farmers and investors due to its enormous potential in domestic and foreign markets. It is proposed that wine be treated differently from hard liquor and preferential treatment should be given to wine industries on account of potential value addition to grapes/ farm products, promoting agricultural diversification and offering higher income to farmers, opportunities for employment generation, possibilities of weaning people away from hard liquor and countering large wine imports. Government of India no longer gives licenses for manufacture of alcohol, which is carried out by state governments under Excise Act. The present restrictions on supporting creation and expansion of alcohol capacity has prevented the Ministry from assisting the wine manufacturing units.

India's wine market is growing at about 30% a year. At present, annual consumption of wine in India is 6 bottles per one thousand populations against a world average of 5000 bottles per one thousand. There is substantial growth in the imported wine market with Indian importers importing hundreds of brands from countries like Australia, USA, France, Bulgaria etc. The market for Indian wine both in India and abroad is encouraging. Promotion of wine industry will provide benefits to the farmers growing raw-material like Grapes, Banana, Apples, Plums and other fruits like Jamun, Pomegranate, Guava etc.

The Grape growers in Maharashtra and Karnataka contribute almost 80% of the total Grape production in the country. In 2004-05, 6000 tonnes of Grapes were crushed for making wine in Maharashtra alone. The total Grape production in the country is about 1,200,000 MT. Besides Grapes, Banana, Apples and Plums, which are also used for manufacturing wine, are available in plenty in Indiain states such as Himachal Pradesh, Andhra Pradesh, Uttaranchal etc.

National Wine Board. It is proposed to set up an autonomous industry driven "National Wine Board" for which a detailed project report has been prepared. For the purpose of setting up of National Wine Board, a provision of Rs. 10 Crore is being included in the 11^{th} Plan. The functions of the Board would be the following:

- To coordinate various developmental, operational, logistical and infrastructural activities related to wine production.
- To draw up schemes for orderly growth of the industry, quality upgradation and competitiveness.
- To lay down standards, accreditation and certification of wine manufacturing units.
- To explore and promote entry of Indian wine into domestic and world markets and support and lead industry efforts in this direction.
- Coordinate and guide the R&D efforts to promote value addition to horticultural produce.
- To lead capacity building and training to meet the emerging skill gaps in the sector.
- Upgrade capability of industry to meet the challenges of international trade.

MFPI had proposed to provide financial assistance under its Plan Scheme to wine industry. However, certain ambiguities in the policy framework prevailing in the alcoholic beverage sector have inhibited MFPI from providing financial assistance so far.

Under the Industrial Development and Regulation Act, 1951, for industry engaged in manufacturing of alcohol and potable alcohol, Government of India issues compulsory licensing. However, since 1997, when the Hon'ble Supreme Court ruled that industries engaged in manufacture of alcohol meant for potable purposes, shall be under the exclusive control of the States in all respects including establishment of distillery, levy of excise duty etc., the Central Government have not been issuing or assigning any license for potable alcohol.

Separately, in 1975, the Union Cabinet decided to ban creation of additional capacity for distillation or brewing alcoholic drinks, except in 100% export oriented cases.

States like Maharashtra, Karnataka and Himachal Pradesh have taken steps to encourage wine industry and gives preferential treatments to wine industry by liberalizing their excise regime, reducing excise duties etc. Maharashtra has abolished excise duties on wine whereas an excise duty of Rs.1013 per case has been levied on other alcoholic beverages. Karnataka has excise duty of Rs.4 per bottle on wine whereas 40-50% excise duty levied on other alcoholic drinks. Similarly, in Himachal Pradesh, excise duty is Rs.13.50-18 per case for wine and Rs. 155-337 per case for others.

9 The Proposed Financial Outlay

The initiatives in the F&V sector have been covered under the Chapters on Infrastructure, HRD and Taxation. Therefore no specific outlay under these items is proposed here. An outlay of Rs. 10 Crore is being earmarked towards the setting up of National Wine Board.

Chapter 5: Report of the Eleventh Five Year Plan Sub-Group on R&D, Labs, Standards and Upgrading Quality of Street Food

1 Background and Context

Trade issues in agriculture and food products have occupied the centre stage now and are a critical factor in WTO negotiations. As the developed countries are forced to lower the barriers, they would be increasingly taking recourse to quality issues for blocking exports from developing countries. Adoption of quality standards by food processing industry is of paramount importance. This is not only important for exports but also for domestic market.

Any such effort has to be all encompassing and quality standards have to be maintained at every level of production chain. The importance of creating a network of laboratories and adherence by the industry to Good Hygiene Practices (GHP), Good Manufacturing Practices (GMP), Hazard Analysis and Critical Control Points (HACCP) etc. is now well recognized. This would require a stringent bar–coding system and strengthening of infrastructure for Codex standards in the country. The networking of laboratories assumes importance, since these laboratories will be operating according to protocols and procedures which make common standards and validation possible.

There are approximately 280 food testing laboratories in the country. Standing Committee on Agriculture has recommended that immediate steps should be taken to establish at least one fully equipped lab with trained manpower in each district of the country so that provisions of Food Safety and Standards Bill, 2006 are properly implemented.

All Food labs need not be the same level. While majority of them should have basic analysis facilities, they may in turn be linked to referral labs which may be state of the art labs catering to most of the requirements. This is important because there are varied demands from food processing units and labs have to be designed to meet such needs. The lab network has to ensure that (a) domestic produce reach minimum acceptable levels domestically as well as for exports (b) all imports coming into the country are of the requisite standards and (c) the standards set by international fora, like Codex does not hurt domestic economic interests; and (d) the level of contaminants, additives, and pesticide residues in domestic production also has to be monitored regularly.

Further, with recognition of Codex as benchmark under the SPS Agreement under WTO, adoption of Codex International recommendations has gained importance for member countries. WTO members are now required to submit scientific justification for food import restrictions based on national regulations that are stricter than Codex Standards. If food control authorities and those involved in international trade are to maintain their credibility with consumers and the food industry, it is essential that decisions taken in the name of consumer protection should be consistent, transparent, based on sound scientific evidence, and derived from the use of recognised and acceptable risk analysis procedures.

Internationally, Hazard Analysis and Critical Control Points (HACCP) has been recognised as a tool to assess Hazards and establish Control Systems that focus on preventive methods instead of relying primarily on end product testing. The various advantages of HACCP include:

- It could be applied through out the food chain from primary producer to final consumer; it enhances food safety;
- It allows better use of resources and more timely response to problems;
- It provides assistance in the Inspection and Certification service provided by Regulatory Authorities.

Therefore, the adoption of Good Hygiene Practices (GHP), Good Manufacturing Practices (GMP), HACCP are imperative for ensuring safety and quality of food products. These objectives can only be achieved by ensuring availability of good quality raw material for production of safe foods, strong infrastructure in the form of food testing laboratories and co-ordination among all stakeholders including R&D institutions, policy makers, farmers and growers, processors and finally consumers.

Food safety issues are not merely issues of trade and market, but more importantly are related to public health. Mass production and a complex food chain have further multiplied the risk of food contamination. Increased awareness about economic loss resulting from food borne illnesses, enhanced knowledge about the causes of food borne diseases and the means to control them due to advances of science, also lead to demand for more vigilance and adoption of food safety measures. The Indian food industry is thus required to adopt technologies that prevent food borne illnesses and toxicants. The Government and industry both have responsibilities to educate and train professionals, food handlers, manufacturers etc. Further, risk assessment, risk management and risk communication are the core of a food safety programme. In such circumstances, the Indian food industry has to adopt appropriate tools for management of food safety programmes such as GMP, GHP, and HACCP systems.

Bar coding has now become an important international requirement in the context of the stringent food safety standards prescribed by the developed countries. Exporters of the food products all over the world use bar coding extensively in view of its wide application and benefits to the industry. As bar coding is now almost mandatory in the developed markets, it is imperative that Indian industries increasingly adopt the system. There is a possibility that the known use of barcodes might become a Non-Tariff barrier in future and to avoid such eventuality, the Indian Food Industry has to adopt bar coding at the earliest.

The quality standards and Research and Development (R &D) issues have a close relationship. R& D needs strengthening to lower the cost of quality maintenance.

A number of institutes are engaged in Research and Development in the area of Food Science and Technology. The research focus some of the leading institutes engaged in R&D in Food Science and technology are given in the table below.

Institute	Research Focus
Defence Food Research Laboratory (DFRL), Mysore.	• Preservation and Packaging of food materials. • Fruits and Vegetable Technology. • Meat, Fish and Poultry and Freeze Drying Technology. • Cereal, Pulses and Food Additives Technology. • Food Microbiology. • Food Biochemistry and Nutrition Evaluation. • Contaminants and Safety Evaluation.
Central Food Technological Research Institute (CFTRI), Mysore	• Development of appropriate and relevant technologies, and upgradation of traditional technologies to increase the efficiency of food industries and reduce/eliminate post-harvest losses of perishables and durables • Development of food products and processes for efficient conservation, protection and processing of food and other agro-economic resources • Development of technology packages for value added convenience food products • Development of export-oriented valued added products from horticultural and plantation produce • Basic research related to food additives/preservatives, micronutrients, food toxicity and safety, food microbiology, enzymatic and molecular biology, bioactive substances and food packaging • Development of food products/processes from untapped food sources • Exploration of new ways of processing nutritious foods • Establishment and management of food industry units • Development of energy-efficient and cost-effective equipment for modernisation of primary processing industries • Design and fabrication of prototype food processing machinery • Development of protocols for post-harvest handling and transportation of fruits and vegetables for export

	and inland markets • Development of new methods of packaging food materials and processed food products for extended shelf-life
Indian Agricultural Research Institute	• Hybridization and hybrid evaluation in mango, grape and ber for enhanced yield, better quality, resistance to biotic stresses and attributes suited for industry and export. • Augmentation, maintenance and evaluation of germplasm in mango, grape, ber and pomegranate for breeding and evolving novel types. • Popularizing the use of biofertilizers for substituting inorganic sources and to improve fruit quality in citrus, mango and grape. • Improving fruit quality in grape and citrus with the application of macro-and micro-nutrients for sustainable production. • To understand the causes for problems in mango to device suitable techniques to minimize these incidences. • To device techniques for in vitro propagation of grapes, mango and guava and to evolve novel progenies in mango and grapes through embryo rescue. • To evolve suitable technologies for post-harvest handling, packing and storage of fresh fruits, vegetables and flowers and processing of fruits and vegetables. • To evolve different methods of preservation and to produce new preservation products in fruits and vegetables. • To evolve new methods for the utilization of horticultural wastes and to produce value added products. • To integrate production and post harvest handling • To develop appropriate storage system, processing for value added products and their packaging and storage requirements • Breeding of varieties and F1 hybrids of vegetables for higher productivity and quality

	• Standardization of production technologies of important vegetable crops
Central Institute of Post Harvest Technology, Haryana	• Development of technology for packaging and storage for reduction in post harvest losses of fruits and vegetables. • Development of technology for value added products from fruits, vegetables and food grains. • Development of machines/equipment for post harvest processing. • Studies on post harvest management of fruits and vegetables. • Adaptive trials on agro-processing centres.

The co-ordination between the different institutes is at present low because they lie under the purview of different ministries. For instance, CFTRI is a part of Council of Scientific and Industrial Research (CSIR) under the Ministry of Science and Technology, Indian Council of Agricultural Research (ICAR) and Central Institute of Post Harvest Technology, fall under the ambit of Ministry of Agriculture and the Defence Food Research Laboratory, falls under the Ministry of Defence.

These institutes have low linkages with industry leading to limited focus on applied research. R&D efforts are therefore not in keeping with the industry requirements.

Therefore efforts need to focus on networking the R&D institutes working in the field of Foods and Beverages. Institutions need to engage both fundamental and applied research to come up with cutting edge products, processes and machineries and keep up with global demands. An apex institution could be set up which could provide for world class graduates and research programmes and provide linkages to various R&D institutes in the sector. Stress should be not only on bringing in new technology but also appropriate low cost technology.

There is a need of updation of processing, packaging and storage technologies for all major processed food products so as to meet international standards. The other areas in which R&D is required to develop new cost effective technologies are preservation, development of processing technology design and building of proto-type equipments and pilot plants.

QUALITY STANDARDS: THE TRADE PERSPECTIVE

India has only 1.5% share of global trade of processed foods. One main reason for this is the inability of local producers to adhere to environmental and safety standards acceptable in the developed countries. Export competitiveness of the Indian FPI depends upon access to the markets of developed countries. According to a British High Commission funded study, (SPS Agreement under the WTO: The Indian Experience) the standards of developed countries are negatively affecting Indian exports. This is evident from the fact that rejections of Indian shipments by the US increased from 860 during May 1999-April 2000 to 997 during December 2001-November 2002. However, the extent of trade restrictiveness of the food safety standards in the major exports destinations varied by market (and by commodity). A few product specific examples are as follows.

Marine Products

Developed countries stringent environment and safety requirements, in particular the provisions concerning the use of HACCP, have affected marine exports from India. Failure to comply with such requirements has resulted in import bans in EU and US. For example, EU imposed a ban on the import of marine products from India in 1997. The EU stated that the inspections showed serious deficiencies in the structure of establishments, the hygiene quality of raw material, and in the processing operations. They also showed that the level of control by the national authorities was insufficient and that these products may have been contaminated by microorganisms, which may constitute a hazard to human health. As a result of the EU ban on Indian fishery products, and as a condition for the partial lifting of that ban, certain seafood processing plants and freezer vessels were re-inspected and approved for exporting to the EU countries. Thus the standards of almost 25 percent of the firms exporting to EU have improved. However, the trade displacements in both these countries caused by EU standards on fishery products have been significant.

Mango Pulp

Mango weevil in Indian mango pulp affected its export to US, Japan and EU markets. The major handicap is Sanitary & Phyto Sanitary (SPS) measures relating to the presence of pesticides, which are used to rid the fruit of mango weevils.Japan had banned Indian mangoes in 1986 on suspected pest infestation by fruit flies, followed by EU and US later on. The Indian Agricultural Research Institute (IARI) and other research bodies worked on eliminating the risk of fruit flies and came up with vapour heat treatment. Subsequently, Japan raised the issue of a new fruit fly. Japan has formally lifted the ban on import of Indian mangoes in Japan on June 23, 2006 after a long gap of 20 years on the basis of the request from the Indian side, after confirming that there is no risk of infiltration of diseases and pests through previous scientific and technical examinations.

2 Existing Tenth Plan Schemes

2.1 Scheme for Setting Up/ Upgradation of Quality Control/ Food Testing Laboratory

The existing scheme for Setting Up/ Upgradation of Quality Control/ Food Testing Laboratory has the objective to:

- Ensure compliance with National food standards
- Assist industries in the food sector to develop and implement quality management systems such as ISO9000, HACCP etc
- Analyze the samples received from food processing industries, and other stakeholders
- Impart training in areas relating to quality improvement
- Provide information on quality standards and requirements of various markets on quality of products
- Reduce the time of analysis of samples by reducing transportation time of samples.
- Generate scientific data on levels of contaminants, pesticide residue etc.

Under the present Scheme, Central/State Govt. organizations, IITs and Universities are eligible for grant-in-aid limited to the entire cost of the capital equipments required for setting up/ modernization of laboratories. All other implementing agencies are eligible for grant in aid limited to 33% of the cost of capital equipment required for setting up/up-gradation of such laboratories for general areas and 50% for difficult areas.

2.2 Scheme for Implementation of Hazard Analysis and Critical Control Points (HACCP), ISO 9000, ISO14000, Good Manufacturing Practices (GMP), Good Hygienic Practices (GHP)

The objectives of this scheme are as follows:

- To motivate the food processing industries for adoption of food safety and quality assurance mechanisms such as Total Quality Management (TQM) including ISO-9000, ISO-14000, HACCP, GMP, GHP
- To prepare them to face global competition in international trade in post WTO regime
- To enable adherence to stringent quality and hygiene norms
- To enhance product acceptance by overseas buyers
- To keep Indian industry technologically abreast of international best practices.
- Market development - brand building, participation in fairs, development of prototypes etc.

Under this Scheme, assistance in the form of grant-in-aid is provided to Central/State Government Organizations/ IITs and Universities to the extent of 50% of the total cost of the project in general areas and 75% in difficult areas. The ceiling remains Rs.10.00 lakhs and Rs.15.00 lakhs respectively. For all other implementing agencies, the grant-in-aid is available upto 33% of the project cost subject to a maximum limit of Rs. 10 lakhs for general areas and 50% to a maximum of Rs. 15.00 lakhs for difficult areas. The grant assistance is for implementation of Total Quality Management including obtaining ISO: 9000 Certification, HACCP etc.

2.3 Scheme for Bar Coding

The scheme aims to popularize the concept of bar coding system in keeping with National/ International Standards and provides incentives to food processors to affix bar codes on their processed food packages in order to keep up with developments in modern markets and avoid non-tariff barriers.

All Central/ State Government Organisations, IITS and universities are eligible for grant in aid amounting to 50% of the registration fees to be paid to EAN-India and 50% of the cost of capital equipment subject to a maximum of Rs. 3.00 lakhs.

All other implementing agencies are eligible for grant in aid amounting to 50% of the registration fees to be paid to EAN-India and 33% of the cost of capital equipment subject to a maximum of Rs. 3.00 lakhs subject to a maximum of Rs. 3 lakhs for General Areas and 50% subject to a maximum of Rs. 3 lakhs for Difficult Areas.

The organizations intending to avail the financial assistance for bar coding have to get registered with EAN-India before applying to the Ministry.

2.4 Scheme for Strengthening of Codex Cell

Assistance under the scheme is provided for strengthening/ setting up of Codex cell in the Ministry and other agencies such as State Nodal Agencies for Food Processing Industries, Industry Associations, and National Research Institutions as well for enabling pro-active participation in Codex deliberations and adequate projection of Indian view point in Codex system.

Central/ State Government organizations, National Research Institutions and leading Agricultural Universities , IITs and Universities are eligible for grant-in-aid of 100% limited to Rs. 10 lakhs in General Areas and Rs. 15 lakhs in Difficult Areas.

All other Implementing Agencies are eligible for grant-in-aid upto 33% limited to Rs. 10 lakhs for General Areas and 50% subject to a maximum of Rs. 50 lakhs for Difficult Areas.

2.5 Scheme for Research and Development

To energize the food processing sector, appropriate time bound R&D programs in preservation, processing, packaging, storage and quality is necessary. Their commercial utilization though delivery to ultimate users of technology is also extremely important. For promoting R&D in the Food Processing sector, Ministry of Food Processing Industries is operating a Plan Scheme for Research and Development in processed food sector. The major objectives of this plan scheme are as under:

- Updation of processing, packaging and storage technologies for all major processed food products so that they meet International Standards.
- Standardization of various factors such as bacteriological standards, preservation standards, additives, pesticide residue etc. of meat and meat products, development of value added products of commercial importance.
- Development of processing technology for the production of intermediate and finished food product/production including design and building of prototype equipment/pilot plants.
- Development of new cost effective technologies for preservation and packaging of products based on traditional foods, common food grains, dairy products etc. for both domestic and export purposes. Development and design of equipment for manufacture of such products, development of new expensive packaging techniques and equipments, analysis of existing packaging methods, materials processes, quality control norms, studies about improvement in the currently used systems, studies about newer packaging possibilities. The support will however be for high value products.

Under the existing Scheme, assistance in the form of grant-in-aid is provided to Central/State Government Organizations/ IITs and Universities to the extent of 100% of the capital cost. For all other implementing agencies, the grant-in-aid is available up to 33% of the capital cost for general areas and 50% of the capital cost for difficult areas.

3 Review of the Existing Schemes

The physical and financial progress of the various schemes for promoting Quality and R&D in Food Processing Industry, during the Tenth Five Year Plan are as follows:

	Physical Target	Physical Achievement	Financial Achievement (Rs. Crore)
Total Quality Management/ HACCP/ ISO Standards	47	24	2002-03- 11.88 2003-04- 4.00 2004-05- 3.00 2005-06- 12.37 2006-07- 7.86
Promotion of Quality Assurance and Safety Concept/ Bar Coding	53	05	
Strengthening of Codex Cell/ Setting up of Quality Control Lab	42	29	
R&D in Food Processing Sector	48	32	
Total	**190**	**81**	**39.11**

3.1 Review of Scheme for Setting Up/ Upgradation of Quality Control/ Food Testing Laboratory

So far 29 institutions/organizations have been assisted for setting up/ up-gradation of food testing laboratories against a target of 42 during the 10th Plan period (upto April, 2006).

During 10th plan, most of the applicant organizations were from Central/ State Government organizations and Universities. Feedback to the scheme suggests following reasons for not getting applications from private sector:

- The existing scheme does not cover components like civil works to house the equipments and furniture and fixtures associated with the equipments;
- Only 33% of the cost of lab equipments are provided as grant which is inadequate considering labs can not become commercially self-sustaining immediately.

3.2 Review of Scheme for Implementation of Hazard Analysis and Critical Control Points (HACCP), ISO 9000, ISO14000, ISO22000, Good Manufacturing Practices (GMP), Good Hygienic Practices (GHP)

The response of industry towards implementation of food safety management system during the previous financial years has not been encouraging. Only as only 24 cases have been supported against a target of 47 cases.

Small and Medium food processing units find it difficult to comply with the requirements of HACCP, since they are required to maintain records/ documents and are to be subjected to audit/assessment by certification agencies generally at six month time intervals. This would therefore require greater capacity building in form of handholding, training, and motivation. More incentives are required to promote quality in the foodprocessing sector. MFPI proposes to engage leading industry associations such as CII, FICCI, AIFPA etc. to ensure that at least 60% of the food processing units become HACCP compliant in the next five years.

3.3 Review of Scheme for Research and Development

Ministry has provided financial assistance to various institutes/ organizations, most of which are state agencies. But the response to these R& D projects has been below expectations because assistance does not cover components such as TCW, manpower and consumables.

4 Proposal for Eleventh Five Year Plan

4.1 Scheme for Setting Up/ Upgradation of Quality Control/ Food Testing Laboratory

MFPI proposes to provide financial assistance for upgradation/setting up of around 84 food-testing laboratories at National, State and District levels in the next Five Year Plan. To achieve this target, the existing Plan Scheme is proposed to be modified for making it more attractive by inclusion of assistance for components such as civil works required to house the equipments and furniture and fixtures associated with the equipments in addition to laboratory equipments required. As such investments are not commercially sustainable, it is also proposed to expand the eligibility of grant upto 100% of cost of equipments in case of state agencies, universities, and upto 75% to private sector institutions.

In view of this, the following are proposed:

- Central /State Government Organizations/Universities may be considered for financial assistance of entire cost of lab equipments. In addition, they would also be eligible for 33% of the cost of civil works to house the equipments and furniture and fixtures associated with the equipments for general areas and 50% for difficult areas, required for setting up/upgradation of such laboratories.
- Private sector organizations may be considered for financial assistance of 75 % of cost of laboratory equipments. They may also be considered for 33% of the cost of civil works to house the equipments and furniture and fixtures associated with the equipments in general areas and 50% in difficult areas.
- Grant for maintenance of equipments may be provided @ 10% on a declining scale to be phased out in 5 years
- Under 10th Plan scheme, there is no upper ceiling for grant to be provided for purchase of laboratory equipments. This is proposed to be continued.
- To fund approximately 84 labs at the rate of Rs. 4.0 Crore per national lab, Rs1.0 Crore per state level lab, Rs.50 lakhs for district level laboratory, fund requirements in the 11th five-year plan will be about Rs.74.00 Crore. A list of equipments for Model Food Laboratory at National level, District level and State level are given as Annexure 1.
- The scheme will be implemented through national level accredited laboratories/ Agencies (Public/ Private) which will develop project reports, implement the projects and if necessary participate with the Government in running the laboratories.
- The Scheme for Strengthening of Codex Cell may be merged with this scheme.

4.2 Scheme for Implementation of Hazard Analysis and Critical Control Points (HACCP), ISO 9000, ISO14000, ISO22000, Good Manufacturing Practices (GMP), Good Hygienic Practices (GHP)

MFPI proposes to revise the existing plan scheme for making the same more attractive and beneficial to small and medium scale industries. The following suggestions may be considered in this regard:

- Quantum of financial assistance may be to the extent of 50% of the total cost of the project in general areas and 75% in difficult areas limited to Rs. 20 lakhs in general areas and Rs. 25 lakhs in difficult areas.
- The financial assistance in the form of "grant-in-aid" may be converted to "in principle approval before expenditure". If any company or unit implements Food Safety Management Systems such as HACCP / ISO22000 /ISO14000 with prior intimation to his Ministry, the eligible cost may be reimbursed to the company / unit in one go after submission of necessary documentary proof like HACCP certificate, manuals, invoices and promotion of GMP etc. Necessary guidelines may be issued later on in this regard. Agencies like APEDA, NHB, DC (SSI) have adopted a similar approach to reduce the workload and avoid undue delay in processing the applications.
- Presently, the applications for implementation of HACCP/ISO 9000 etc. are received by MFPI through State Nodal Agencies. Thereafter, applications are examined and in case of deficiency, if any, the applicant organizations are asked to furnish requisite information/documents. The proposals for grant in aid below Rs.10 lakhs are processed on file. The proposals for grant-in-aid above Rs.10 lakhs are sent to PAC for approval. After approval, the grant is released in two equal installments.
- Industry associations like CII, CIFTI, and AIFPA may be asked to identify the units and draw up a plan of action. A Technical Committee may be constituted to oversee the implementation and progress in his regard.
- It is proposed to cover 500 units during the Eleventh Five Year Plan, the requirement of Fund for which would be Rs. 100 Crore.

4.3 Scheme for Research and Development

The following revisions are proposed in the Scheme for R&D to overcome the current weaknesses.

- Central / State Government Organizations /Universities may be considered for financial assistance of 100% of the project cost as grant.
- Private sector organizations may be considered for 90 % of the project cost for grant
- Assistance also to be provided for components such as TCW, manpower and consumables.
- An amount of Rs 60 Crores to be earmarked

4.4 Upgrading Safety and Quality of Street Food

Street Food is an integral part of any cuisine. Street food is an inexpensive and convenient food for a large number of people. It is also in turn a large source of employment **Proposed Scheme for Upgrading Safety And Quality of Street Food** generation, major beneficiaries being women. Street food is a treasure house of local culinary traditions and is increasingly playing an important role as an enhancer and force multiplier of tourism sector all over the world.

National Policy for Urban Street Vendors/Hawkers drawn up by the Ministry of Urban Employment and Poverty Alleviation estimates the number of street vendors at around 2 % of the population of metropolises. Mumbai has largest number (approx 2,00,000) of vendors. Majority of the street vendors sell food products. Most of the large cities in India have migrant workers, mostly residing in slums, and they are dependent on street food as it is inexpensive and convenient. In addition, traditionally eating out meant consumption of street food for majority of Indians, as there were not many restaurants, which they could afford. Thus, street food has always been popular because of its affordability and convenience.

Incredible India and its Cuisine

One of the opportunities India should take advantage is the rich diversified cuisine. There are thousands of Indian restaurants across the globe and the preference for Indian cuisine is on the increase. The popularity is not only among the expatriate Indians but also among people of all nationalities. The Ministry of Tourism participates in several fairs and also has launched promotion of Tourism under the banner of Incredible India. These fora can be used to promote Indian food particularly ethnic food. These activities can be a part of the MFPI’s market development programme.

The Ministry proposes orchestrate a programme to identify and promote Indian cuisine abroad through the network of Indian restaurants in association with Ministry of Tourism and External Affairs.

However, the state of street food sector in India is far from satisfactory. The levels of hygiene and safety are low and contamination rampant. The presence of E Coli and Salmonella in food samples is high. The rising income levels, awareness on hygiene and safety and opening up of new restaurants everyday pose a serious threat to the street food sector.

Street food sector in India is currently completely unregulated. This has often been a concern for public health authorities. There are periodic attempts by local authorities to do away with street food vending. There is a need to regulate street food vending in India and to bring it within the organized sector.

MFPI has therefore decided to take the initiative in this direction along with industry associations, NGOs, municipal bodies and ministries of Urban Development, Poverty Alleviation, Panchayat Raj Institutions and Tourism with a view to improve the safety of food in the streets. The effort will be to ensure safety and facilitate value addition, which would lead to increase in income level of food vendors.

Another initiative proposed by MFPI is establishment/ upgradation of food streets in major tourist destinations in the country. Most of the cities have streets known for their food fare especially ethnic food.

The concept of traditional food street has now been given a new meaning in developed countries, with food streets/ food centers/ plazas emerging as new tourist attractions. Major tourist destinations abroad invariably have food streets offering exotic local foods.

In India, this has not received the required attention. Traditional food streets are invariably crowded and sanitation and safety levels is too low to attract tourists. This is an area with huge potential for increased income generation for vendors and for giving a boost to the tourism sector. This may also lead to popularity of local food traditions, which are under severe threat from western food chains, offering fast food, which are very popular among Indian middle classes today

In view of the above, MFPI proposes to introduce two separate schemes during 11^{th} FYP aimed at upgradation of food vending in the streets and setting up/upgradation of food streets.

4.4.1 'Safe Food Towns'

This Scheme is aimed at laying down standards, quality up-gradation and capacity building of street food vendors in 50 cities in the country. It is proposed to introduce 1,000 modern food carts each in identified cities leading to up-gradation of at least 50,000 food-vending units in the country during 11^{th} FYP.

The Scheme envisages capacity building activities amongst the street food vendors and formation of viable micro finance linkages and regulatory mechanisms in association with local authorities. Standards will be developed for food safety and certification and accreditation mechanism put in place.

The objective of the scheme are as follows:-

- To ensure adherence to safety standards for food items being sold by street vendors
- To support local authorities in regulating food vending/hawking
- To upgrade quality, taste of processed/unprocessed street food
- To increase the income level of street food vendors
- To provide for micro finance linkages to street food vendors for their long term sustainability

Eligibility Criteria and Pattern of Assistance

Implementation agency for the Scheme needs to have considerable experience and expertise in the area of food processing, enterprise promotion and income generation activities.

The responsibilities of implementation agencies would include:

- Identification and organization of street food vendors

- Sensitization and training of street food vendors for adoption of clean practices. They will also be responsible for maintaining standards, stakeholder consultation, certification, licensing, accreditation and follow-up.
- Provision of micro finance linkages to street food vendors
- Submission of periodical progress reports to MFPI.

The scheme would provide for funding of integrated projects which include bringing together of food vendors, development of training tools, sensitization and training programmes for vendors and introduction of modern food carts among food vendors.

The capacity building activities of the project would be fully funded. The scheme would be operated through Implementing Agencies (IAs), which would be eligible to get 10 % of the entire project cost as implementation charges.

Proposed Financial Outlay

A financial assistance at the rate of 25% per cart is proposed to be made available to vendors. There would also be need of additional Rs. 15 Crores for capacity building and project implementation charges. The Scheme outlay for the 11th FYP is therefore proposed at Rs. 52.5 Crores.

4.4.2 Food Corner/Food Court

This Scheme is aimed at upgradation and setting up of one food street each in 25 select cities of the country. Each identified city would have one street designated as a food street. The food street will be developed as an attractive destination for tourists/others for savouring food items, which are part of long local traditions.

The objective of the scheme are as follows

- To promote clean and good sanitary food service in select tourist destinations
- To upgrade quality, taste and safety of processed/unprocessed street food
- To conserve and popularize local food traditions

Eligibility Criteria and Pattern of Assistance

The assistance under the Scheme would be available to local municipal bodies/state tourism agencies/street food vendors’ association and such other agencies, which have requisite experience and capability to implement such projects. For being designated as a food street, there would need to be at least 25 food stalls/vendors in a street.

The project expenses would include installation/ upgradation of modern food stalls, benches, fountains, water supply and drainage, waste disposal system, public utilities, electrical appliances etc. which help in making the designated food street an attractive destination for tourists.

Implementation Structure

The Ministry of Food Processing and Industry will appoint a Project Management Agency to assist the Ministry in the implementation of the project. The responsibilities of Implementing Agencies (IAs) would include:

- Selection of food streets based on need and detailed cost benefit analysis
- Preparation of a Detailed Project Report in consultation with stakeholders including MFPI and street food vendors
- Implementation of project in association with stakeholders including MFPI and street food vendors, local bodies, state governments etc.
- Sensitization and training of street food vendors/ food stalls for adoption of clean practices and maintaining upkeep of food streets.
- Monitoring the implementation of the project and submitting periodical progress reports to MFPI.

There would be a high level Advisory Body to oversee the implementation of the Schemes. The Advisory Body would be constituted of major stakeholders including industry associations, food vendors' associations, local bodies and representatives of Ministries of Urban Employment & Poverty Alleviation, Panchayat Raj and Tourism.

The Advisory Body would help in laying down standards for food vending including certification and laying down detailed rules/guidelines of the Schemes.

The Advisory Body may, in turn, constitute a Project Approval Committee for appraisal and approval of project proposals submitted under the said schemes.

Proposed Financial Outlay

The scheme would provide for grant outlay of up to Rs. 5 Crores for setting up/ upgrading the infrastructure of each food street project. The scheme would be operated through an implementing agency, which would be eligible to get 5 % of the project cost as implementation charges. The grant outlay of Rs. 5 Crores would include implementation charges.

At the rate of Rs. 5 Crores for each food street, the Scheme outlay for 25 food streets for the 11th FYP would be Rs. 125 Crores

Advance Action

It is proposed to initiate advance action to implement the scheme in 6 cities during the current financial year (2006-07). As bulk of the expenditure is likely to be incurred during the next year a token provision of Rs 5. Crore has to be made for the current financial year. Advance action will include identification of project management agency, detailed project report, consultation with local bodies and other stake holders including state governments, evolving standards, initiating capacity building programmes etc.

5 Policy Issues

The Food Safety and Standards Bill, 2006 has been passed by the Parliament on 02.08.2006 and received the assent of the President on 23rd August, 2006. Steps are being taken since to bring the Food Safety and Standards Act, 2006 into force.

The following steps are required to be taken to implement the Food Safety and Standards Act, 2006:

a) Constitution of the Steering Committee headed by the Cabinet Secretary

The Cabinet in its meeting held on 04.08.2005 had approved the proposal of this Ministry to constitute a Steering Committee under the Chairmanship of Cabinet Secretary and Secretaries of Ministries/Departments concerned, to take such decisions and give such directions to the concerned Ministries/Departments as may be required for proper and smooth implementation of Integrated Food Law, i.e., Food Safety and Standards Act, 2006.

b) Establishment of Food Safety and Standards Authority of India and appointing its Chairperson and Members

Section 6 of the Food Safety and Standards Act, 2006 provides for constitution of a Selection Committee under the Chairmanship of the Cabinet Secretary.

c) Identification of location for Head Office of Food Authority

Section 4 of the Act provides that Head Office of the Food Authority shall be at Delhi. The Food Authority may establish its Offices at any other places in India. It is proposed that to begin with, the Head Office of the Food Authority may be located in a rented building in Delhi, for which Ministry of Urban Development will be requested to take action.

d) Framing of Rules by Central Government, State Government and the Food Authority

Ministry of Food Processing Industries is in the process of engaging consultants/agency for preparation of draft rules, structure of Food Authority, budget/finances, mechanisms for pooling of resources and its re-deployment etc.

e) Steps required to be taken by the State Governments/UTs to implement the Act

MFPI proposes to write to all the State Governments/UTs in regard to action points on their part about appointment of Commissioners of Food Safety, Designated Officer, Food Safety Officers, Food Analysts, Adjudicating Officers, Establishment of Food Safety Appellate Tribunals, Special Courts, Public Prosecutors and re-deployment of their existing laboratories, along with manpower and resources.

f) Steps required to be taken by the Food Authority before the repeal of Acts/Orders

   i) Framing the standards of products being covered by these Acts/Orders.

   ii) Notification of different dates for different Acts/orders for repeal keeping in view the status of regulations/setting up of standards.

   iii) Laying down procedure for transition into new licenses in lieu of licenses issued under various Acts/Orders under repeal and issue new licenses under Food Safety and Standards Act, 2006 by the State Governments.

iv) Developing mechanism/procedure for transfer/ dealing of cases pending in various courts on account of the Acts/Orders under repeal.

v) Notification of different dates for commencement of different provisions of the Food Safety and Standards Act, 2006.

All the requisite steps for implementation of the Act are being taken by Ministry of Food Processing Industries accordingly.

6 Action Plan

- 84 labs are proposed to be revitalized/ upgraded during the Eleventh Five Year Plan. Of these 4 will be National level labs located in 4 zones. These may be attached to National level institutes/ reputed universities. 29 state level labs will be set up, 1 in each of the states. They will function as referral labs for state. The remaining will be district level labs to be run by Industrial Agencies or State Level Agencies. Government Organizations/ private sector agencies may be considered for 100% grant on equipment. Private sector organizations may be considered for 90% of the cost of the equipment.
- 500 cases may be supported for obtaining ISO/ HACCP approval.
- 10 labs may be selected for upgradation during the current year.
- 1 food street each will be set up/ upgraded in 25 select cities of the country

7 Proposed Financial Outlay

Component	Proposed Financial Outlay (in Rs. Crore)
Labs	74
R&D	10
Upgrading quality and safety of street food	178
Food Safety and Standards Authority	50
Total	607

Chapter 6: Report of the Eleventh Five Year Plan Sub-Group on HRD, NIFTEM and PPRC

In an emerging sector such as food processing, Human Resources Development assumes high relevance and importance given the need for skill development required to support the development phase. Realising this, MFPI has been operating a Scheme for Human Resource Development under the Tenth Five Year Plan.

1 Scheme for Human Resource Development

The scheme for Human Resource Development covers the following components:

1.1 Scheme for setting up of Food Processing and Training Centre (FPTC)

The scheme aims at development of rural entrepreneurship and transfer of technology for processing of food products using locally grown raw material and providing hands on experience at such production cum training centers.

1.1.1 Eligibility and Pattern of Assistance

Central and State Government organizations, educational and training institutions, NGOs, cooperatives are eligible for assistance, under the scheme, provided the implementing agency is willing to make available qualified trainers and infrastructure facilities.
The following Grant-in aid is provided under the scheme:

- For Single Product Line centre (for any one group of processing activities)- Rs. 2 lakhs for fixed capital costs and Rs. 1 lakh as revolving seed capital
- For Multi Product Line centre- Rs. 7.50 lakhs for fixed capital costs and Rs. 2 lakhs as revolving seed capital
- For training the trainers at recognized institute such as CFTRI- Upto Rs. 0.50 lakh, one time assistance, subject to actuals on TA/DA etc.

1.2 Creation of infrastructure facilities

The scheme provides for creation of infrastructure facilities like library, laboratory, pilot plants etc. for running Degree/ Diploma Courses and Training Programmes for Food Processing.

1.2.1 Eligibility and Pattern of assistance

HRD institutions such as colleges, universities, technical institutions etc. can avail grant upto Rs. 50 lakhs under the scheme

1.3 Training Programmes sponsored by Ministry of Food Processing Industries

Grant will be provided to institutions organizing trainings in the area of food processing. Quantum of assistance will depend on number of trainees and duration of training.

1.4 Entrepreneurship Development Programme

Enterpreneurship Development Programme aims at enabling potential entrepreneurs to take up food processing project.

1.4.1 Eligibility and Pattern of assistance

Maximum assistance of Rs. 1 lakh is available per EDP. The programme should run for atleast 4 weeks with a follow-up phase of 12 months and number of trainees should not be less than 20.

1.5 Review of Performance of Tenth Plan Scheme for Human Resource Development

The following table shows the Physical and Financial Progress of the Scheme for Human Resource Development (till 31.08.06).

<table>
<tr><th></th><th>Physical target</th><th>Physical Achievement</th><th>Financial Achievement (Rs. Lakhs)</th></tr>
<tr><td>Food processing Training Centre (FPTC)</td><td></td><td>47</td><td rowspan="4">2002-03- 449.00
2003-04 466.00
2004-05- 647.00
2005-06- 742.00
2006-07-1695.00</td></tr>
<tr><td>Entrepreneurial Development Programmes (EDPs)</td><td></td><td>801</td></tr>
<tr><td>Creation of Infrastructure facilities for Degree/ Diploma courses</td><td></td><td>40</td></tr>
<tr><td>Training Programmes</td><td></td><td>48</td></tr>
<tr><td>Total</td><td>400*</td><td>936</td><td>3999.00</td></tr>
</table>

* Targets were not set up for separately for various components

Though 47 FPTCs have been set up and 801 EDPs and 48 training programmes have been conducted during Tenth Five Year Plan, the desired results have not been achieved. The main weaknesses identified in the scheme are as follows:

- There is no screening while selecting candidates for EDPs
- Monitoring and follow up support for trainees after completion of EDPs is poor
- Curriculum for EDP does not take into account technological developments in the food processing sector.
- The Programmes are not customized according to needs of different sectors in food processing industry.
- There is no provision of facilitation of loans for start-ups through linkages with financial institutions/ banks.

1.6 Proposal for Revision of Scheme for Eleventh Plan

While the levels of assistance of Rs. 1 lakh is available per EDP may continue under the Eleventh Plan, it is proposed that the following may be incorporated in the Scheme for Training Programmes to achieve the desired results.

- The candidates to be screened as part of selection procedure.
- The curriculum to be regularly updated to include modern technological developments in the food processing industry.
- Follow up support to be provided to trainees for atleast one year after completion of EDP.
- Linkages to be provided to financial institutions/ banks for provision of loans for start-ups.
- The programmes to be customized as per the needs of various sectors in food processing industry.
- NIFTEM as the apex academic institution in the areas of food technology, entrepreneurship and management to develop, design, update and standardize courses, training programmes etc. and offer training to the industry to keep it abreast of latest technological developments in the food industry.

2 Paddy Processing Research Centre (PPRC), Thanjavur

PPRC, Thanjavur is an autonomous organization under the MFPI and has been in existence for the last three decades. As other commodities such as millets, pulses and oil seeds are gaining importance it was decided in 2001 to expand the mandate of this Institute to include the above commodities also. In his budget speech, the Hon Finance Minister announced the intention of the Government to upgrade PPRC to a National Institute. A detailed project report is being prepared by an Expert Committee. The total expenditure estimated to upgrade the Centre is Rs.50 Crore. The following are the objectives of the upgradation and the revised mandate of the National Crop Processing Centre.

- To serve as a National Institution for research, education and training in the area of post harvest processing of crops of wetlands and storm prone regions.
- To undertake basic, applied and adaptive research in post production sector of cyclone/storm prone areas and wet lands, also including plantation, spices and other important crops.
- To act as National Organization for information on post production systems of mandated crops.
- To undertake transfer of technology, consultancy and analytical services for raw and processed agricultural commodities.
- To establish linkages with related processing industries and other academic as well as R&D institution for achieving its goal effectively

3 National Institute on Food Technology Entrepreneurship And Management (NIFTEM), Kundli, Haryana

Establishment of NIFTEM has received approval by Government. The mandate of the institute includes creation of a comprehensive database on domestic resources and bringing in best international practices by “promoting cooperation and networking amongst existing institutions both within the country and international bodies”.

The Institute will also undertake frontier and inter disciplinary research in areas of relevance to the sector and help in setting standards as well as protocols for testing of food products. Focused research and linking research to industry would bring enormous benefits to this still evolving sector.

Further, the Institute is be expected to contribute to the creation of much needed skilled manpower for the sector through introduction of industry friendly short-term courses, including regular degree and management courses leading up to Ph.D programmes.

NIFTEM would also aim at positioning itself as adviser for the Government in policy formation and regulatory framework. It would also to emerge as a nodal agency in the sector, which would engage all stakeholders, namely, industry, Government and consumers so as to remain economically viable and socially relevant and guide the growth of the food processing sector along healthy and modern lines.

Approval for NIFTEM to be registered as a Section 25 Company has already been obtained .To put the implementation on a fast track, the Ministry of Food Processing and Industry has already decided to outsource the preparatory work for commissioning of NIFTEM and bids have been invited outlining following tasks:

- Identifying theme centres and structure of NIFTEM
- Suggestions on financial framework and delegated powers to be provided to Institute to ensure necessary flexibility of its operations, including flexible recruitment and compensation packages
- Suggestions on phasing of activities of the Institute and achieving the right balance between research, development, consultancy etc.

4 Tenth Plan Schemes to continue without modifications

4.1 Scheme for Strengthening of Nodal Agencies

The Scheme for Strengthening of State Level Nodal Agencies for Food Processing Industries, designated by State Governments, provides support for installation of office hardware, collection of detailed field information, preparation of database, monitoring of assisted projects and coordination of agro food business.

Lump sum grant of Rs. 5 lakhs may be availed for purchase of basic office equipment. Further lump sum grant of Rs. 5 lakhs may be considered after a gap of 5 years. Additional grant upto Rs. 1 lakh per year may be provided per Nodal Agency for meeting the expenses

for engaging personnel for preparing database, publication of profiles, office consumables etc.
Additional assistance for collection of detailed filed information, preparation of database would be considered on merit. No amount is fixed for this purpose.
This scheme may continue in its present form under the Eleventh Five Year Plan

4.2 Scheme for Promotional Activities

4.2.1 Brand Building

The objective of Generic Advertisement is to build awareness among consumers about the advantages of processed food. This also encourages marketing promotion campaign for new products mix and brand name support. Dissemination of information about processed food industry through journals, press advertisements on various scheme plans of the Ministry is done through generic advertisement. The Ministry carries out the entire campaign.

4.2.2 Other activities

The promotional activities of the Ministry are aimed at the development of the processed food sector, creating awareness, attracting investments etc. Governments/ Academic Bodies, Industry Associations, NGOs, Cooperatives etc. are eligible to seek assistance for organizing seminars/ workshops/ symposiums etc., conducting studies/ surveys/ feasibility reports.

For organising seminars/workshops/symposiums, agencies are eligible for 50% of the cost subject to a maximum of Rs. 1 lakh. However, when the Ministry co-sponsors the event there is no ceiling on the upper limit.

For studies/ surveys/ feasibility reports to assess the potential and other relevant aspects of Food Processing Industries on sectoral and regional basis, the concerned agency is eligible for assistance of upto 50% of the cost subject to a maximum of Rs. 3 lakhs. However, when the Ministry commissions the study/ survey, there will be no ceiling on the upper limit.

The Ministry in close association with APEDA, CFTRI, Industry Associations etc. participates in national/ international exhibitions/ fairs. In this regard, assistance is provided for publication of literature, space rentals etc. The quantum of assistance depends on the merits of proposal. For participation in fairs/ exhibitions abroad, assistance of 25% of rental space is provided to government/ government organizations subject to a maximum of Rs. 20 lakhs.

Assistance may also be provided for organising study tours for exposure to various aspects of Food Processing.

4.2.3 Strengthening of F&VP Directorate

The scheme extends assistance to the regional offices and sub-offices of the F&VP Directorate for modernization and e-governance of designated agencies of the state governments. A one-time grant of RS. 5 lakhs is provided per designated agency of State Government and 4 regional offices for modernization and e-governance including computerization, testng of samples, transport of periodic inspection etc.

4.2.4 Strengthening of Industry Associations

Financial assistance on actual subject to a maximum of Rs. 2 lakhs is provided under this scheme to collect and update industry information on installed capacity, capacity utilization, production, employment etc. by associations of various sectors of Food Processing

4.2.5 Food Fortification

Micronutrient malnutrition is a major health problem. A series of actions need to be undertaken by various concerned Departments/ Ministries of the Government, which include fortifying essential foods with nutrients. It is proposed to start with fortification of wheat to begin with.

Existing industries mills engaged in production of cereal/ cereal based products are eligible for grant upto 50% of the cost of capital equipment (dosing machine etc.) and its installation charges upto Rs. 3 lakhs in all areas.

4.2.6 Performance award

To provide encouragement/ recognition to outstanding achievements of units in the food processing sectors and for augmenting efficiency through healthy competitive spirit through annual awards, assistance in the form of grant-in aid will be provided to the designated agency for implementation of the scheme.

While the above schemes may continue under the Eleventh Five Year Plan in their present form, the following component may be added to the Scheme on Promotional Activities

4.2.7 Pilot Projects

The rate of attrition of new products in the food processing sector is very high. Pilot projects are required to be undertaken to test technology, market acceptance, suitability etc. Exploratory ides are also required to be taken up as pilots, so that the potential for commercial investment is determined. For development of innovative pilot projects in food processing focusing on processing, technology, development of equipments, packaging etc. a grant-in-aid of Rs. 10 lakhs may be provided to implementing agencies.

5 Proposed Financial Outlay

Component	Proposed Financial Outlay (in Rs. Crore)
HRD	100
PPRC	50
NIFTEM	244
Total	**394**

Chapter 7: Report of the Eleventh Five Year Plan Sub-Group on Taxation and Finance

Fiscal policy is an important instrument of state policy not only to raise revenue but also to channelise investment in desired sectors. Even as WTO is trying to ensure level playing field for all irrespective of national boundaries, taxation policy remains an important signal of government's intent of promoting or discouraging various sectors of the economy.

In a federal structure like India, in addition to taxes imposed by the central government, a significant tax component is levied by state governments. There is also often a disconnect between the priorities of the central government and state governments which give out mixed signals and adversely impact the industrial development process. Availability of Finance is a crucial component for economic development of a country.

Till the early 90's, high cost of credit was regarded as an obstacle in the progress of the economy, as it not only made the viability of operations difficult but also it made domestic firms uncompetitive compared to foreign firms. However, the interest rates have since then come down and this has facilitated the consequent growth of the economy.

The Government of India has always considered credit flow to the economy crucial, and has made efforts to make adequate and cheap credit available to "priority sector" of the economy. Credit policy of the country can still play a significant role in facilitating smooth credit flow to the desired sectors.

1 Taxation in Food Processing Industry

The food processing industry has traditionally been subject to a high incidence of taxation in the country. This has not only acted as a disincentive for investment in the sector but also has affected the competitiveness of the processed food products in the country. This has happened because processed food products were treated as luxury products meant for rich segments of the population. However, this perception has changed in recent years as there is an increasing realization of the importance of food processing sector for growth of overall agriculture sector and the economy.

Though primary agricultural commodities are mostly exempted, processed food commodities are subject to Central Sales Tax of 4%. Under Value Added Tax (VAT), levied by State Governments, most processed food products are taxed at 12% to 13%. Apart from VAT, other taxes such as entry tax, octroi etc are also levied on food products. In addition, Central Excise Tax (CET) is levied on all branded products. Most countries in the world do not levy taxes/ duty on processed food products to promote value addition in the food sector (Table).

Excise and Sales Tax Structure on Food Products

Country	Central Excise Tax/ Central Government Tax	Sales Tax/ Local Authorities Tax
India	0-16%	8-28%
UK	Nil	Nil
Ireland	Nil	Nil
Thailand	Nil	7%
USA	Nil	Nil
Malaysia	Nil	Nil

Though there has been a substantial rationalization of taxes in food processing sector in recent years, notably since 2001-02 when processed fruits and vegetables were exempted from CET, many agro and food products such as beverages containing milk, foods obtained by swelling of cereals, cereal products, biscuits, textured vegetable proteins (soya bari), instant food mixes and ready to eat packaged foods still remain subject to high CET.

The current level of taxation does not offer a level playing field to the Indian food processors, as duties in many other countries are much lower. It makes the Indian food products costlier, particularly the branded segment and this does not help to popularize processed food. The result is that processed foods are costlier than fresh foods in India, unlike in other countries.

The present system of taxation is based on products, which gives rise to various classification related anomalies. Rationalising the tax structure by adopting a broad band will help the sector to adopt flexible production systems. A shift from a product-based to a consumer-based approach can substantially help the sector achieve faster growth and this will act as a catalyst for investment. More importantly, such an approach will make processed food affordable. A uniform license and tax structure for a range of processed foods will enable producers to respond flexibly to market trends by changing their product mix. A unified tax structure will also reduce transaction costs and avoid the need for interpretation by states.

Tax anomalies due to product wise classification

Item	CET	Comparative Item	CET
Soup	Nil	Rasam	8%
Jaljeera	Nil	Nimbupani	16%
Ice-cream	Nil	Ice-cream mix / Gulab Jamun mix	16%/ 8%
Ready to eat	8%	New convenience foods	16%
Ready to eat Vadas/Dosas/Pakoras	8-16%	Squashes/ Pastas	Nil
Sugar confectionery (with cocoa)	16%	Sugar confectionery	8%
Coated wafer biscuits	16%	Biscuits	8%

1.1 A low and predictable tax regime

A low and predictable tax regime is being proposed avoiding the need to fine tune the rates at each Budget. Specific suggestions on tax rates are given below: -

It is proposed to classify the food products into 3 categories based on the nature of raw materials and the possibility of value addition. The following would be the components of such a tax/ licensing framework.

1. Products processed from perishable commodities such as Fruit and Vegetable Products, Milk and Dairy Products, Meat and Fish Products. These are already exempted from CET.
2. Products from natural components having longer shelf like such as spices, spice mixes, herbs and herbal products etc. These are also exempted from CET.
3. Grain and pulses based products including those made form Rice, Wheat, Barley, Oats, Millet, Corn, Maize etc., composite foods and mixed preparations and ready-to-eat foods etc. Some of these are not exempted so far.

Out of the above categories the following food products have not been exempted yet from CET.

1. Beverages containing milk
2. Foods obtained by swelling or roasting of cereals, cereal products, including corn flakes, paws, mudi and the like, foods obtained from unroasted cereal flakes or from mixtures of the above
3. Biscuits
4. Textured vegetable proteins (soya bari) and instant food mixes such as Pongal mix, Vadai mix, Pakoda mix, Payasam mix, Gulab jamun mix, Rava Dosa mix, Idli mix, Murruku mix and Kesari mix
5. Ready-to-eat packaged food

While the current exemptions may continue, those that are not exempted, may be exempted from levy of Central Excise Tax.

- To provide a boost to food processing, a uniform treatment of Packaging Equipment and Food Processing Equipment is required. Customs Duty on Packaging Equipment has already been reduced to 5%. Customs Duty on Food Processing Equipment may also be brought down from 12.5% to 5%. A list of the Food Processing Equipment on which the Customs Duty may be reduced could be finalized in consultation with the Ministry of Finance.
- Central Excise Tax on Packaging Equipment and Food Processing Equipment may be reduced from 16% to 8%. This will promote innovation in Food Processing and Packaging Equipments as per requirements for ethnic food products, thus increasing processing efficiency while cutting costs of food products
- Cold chain infrastructure is the lifeline for the sustenance of food processing industry. To encourage investment in this sector, all investments in cold chain may be accorded the status of infrastructure sector for availing of concessions under 80 IA which

would allow them a tax holiday of 10 years. This facility is presently available to developers of SEZ too, besides infrastructure projects including industrial parks.

- Further, cold chain equipment may be exempt from CET. With regards to import of cold chain equipments/ components, those, which are not produced in the country, may be exempt from Customs Duty. Customs Duty on other cold chain equipments/ components may be reduced marginally from 12.5% to 10%.

- OTS cans are extremely important packaging material specifically for processed foods. Considering the importance of OTS cans for processed food industry and lack of ambiguity regarding its end use, it is proposed to reduce CET on OTS cans from 16% to 8%.

  This will have a significant impact on the product cost. eg. The basic price of a popular size of OTS can containing mango pulp is Rs. 25. CET is applicable on OTS can @16%, i.e. Rs. 4. The price of a can of mango pulp is Rs. 50. CET on OTS cans contribute to 8% of the final product cost of mango pulp. Reducing the CET on OTS cans from 16% to 8% will reduce the price of an OTS can by Rs. 2. In such a case, CET on OTS cans will contribute a more reasonable 4% to the end cost of the product.

- The basic premise behind introduction of VAT, was to place products at specified tax levels which would be uniform throughout the country. While most states have placed processed foods products at a VAT rate of 4%, a few states levy VAT on some processed food products @ 12.5%. It is proposed that a single flat tax rate under VAT may be imposed on all food items across states. This needs to be taken up with the Empowered Committee of Finance Minister.

- Income tax exemption of 100% in the first 5 years and 25% in the next 5 years was introduced in the last financial year for newly set-up food processing units. While this may be continued, it is proposed that since existing food processing units are facing problems of underutilization, investments made for their modernization and technology upgradation may be exempted from income tax. If such a provision is not introduced, the existing food processing units may become economically unviable in face of competition from new units availing total income tax exemption.

Summary of Proposals

Present tax level	Proposed tax level
Sales Tax, Addl. Tax surcharge, turnover tax, entry tax-8-16%*	To be subsumed in VAT @ 0% for perishables and 4% for non-perishables
VAT for processed food-12.5%	0-4%
CET on OTS Cans 16%	8%
Import duty on import of food processing machinery and lab equipments 20-25%	5%
Customs duty on cold chain equipment-12.5%	10%
CVD/ED-16%**	8%

* In those states where VAT has not been introduced

**Countervailing duty is levied in lieu of Excise Duty .As the CET is 16% for the equipment manufactured in the country the same is applied to imported equipment

2 Finance

The Indian food processing industry is highly fragmented. The sector largely comprises of small and medium scale companies, who have limited ability to invest in developing backward and forward linkages and lack advantages of scale. Majority of these units are involved in primary and secondary processing. The newer units involved in tertiary processing mainly produce unbranded products that occupy the lower segment of the food market and are unable to compete with branded products. Given the small scales of units, their limited volumes and higher risks associated with them because of their stand-alone nature, and seasonality of produces, credit availability for the sector is a matter of concern.

2.1 Status of Credit Flow to Food Processing Sector

In 2006, the value of bank credit disbursed to Food Processing Sector, stood at Rs. 30843 Crore as against total Gross Bank Credit to all sectors amounting to Rs. 549057 Crore(refer table below). This is just 5.6% of the Gross Bank Credit deployed to Industries (including small, medium and large).

Deployment of Gross Bank Credit to Food Processing Industry

Year	Deployment of Gross Bank Credit to Industry (Small, medium, Large) (in Rs. Crore)	Deployment of Gross Bank Credit to Food Processing Sector (in Rs. Crore)	Deployment of Gross Bank Credit to Food Processing Sector as percentage of Gross Bank Credit to all Industry
FY 1997	138548	3655	2.6
FY 1998	161038	4134	2.6
FY 1999	178999	4750	2.7
FY 2000	200133	5986	3.0
FY 2001	218839	6345	2.9
FY 2002	229523	7285	3.2
FY 2003	295562	8577	2.9
FY 2004	313065	9872	3.2
FY 2005	426892	24433	5.7
FY 2006	549057	30843	5.6

Source: Reserve Bank of India

A huge gap therefore exists between the actual fund requirement and the credit support provided by the banking sector.

2.2 Sources of finance for food processing sector

1. Banks: The Food Processing sector has access to credit from Commercial Banks, Cooperative Banks and the Regional Rural Banks for long term loans for capital investments and short-term loans for working capital. Commercial banks dominate credit scene in the country but remain wary of providing long term credit to the sector.

2. National Bank for Agricultural and Rural Development (NABARD): NABARD is the

apex financial institution which offers refinance facilities for food processing, agri infrastructure, developmental assistance to banks and financial institutions. However, in recent years, credit off take under refinance has come down as refinance rates are no longer attractive for banks.

3. Small Industries Development Bank of India (SIDBI): SIDBI is the dedicated financial institution engaged in providing term loan to Micro Small and Medium Enterprises (MSMEs) in the country. Food processing sector is a very small fraction of its loan portfolio.
4. Export Import Bank (EXIM Bank): Exim Bank assists in financing and facilitation of foreign trade. The Bank also refinances commercial working capital for exports.
5. National Cooperative Development Corporation (NCDC): NCDC assists in promotion, planning and financing the agricultural supply chain from production, processing, storage and trade of agricultural produce and food products. NCDC also provides assistance for marketing of certain notified commodities e.g. fertilizers, pesticides, agricultural machinery etc.
6. Ministries / Government bodies
    - Ministry of Food Processing Industries (MFPI): MFPI is the Nodal agency for development of the processed food sector in the country. MFPI's financial assistance schemes include schemes for technology upgradation, HRD, Quality testing, R&D, TQM, backward and forward integration, development of infrastructure including food parks, abattoirs, cold chains etc.
    - Agricultural and Processed Foods Products Export Development Authority (APEDA): APEDA facilitates market linkages between Indian producers, manufacturers and the international market. APEDA provides financial assistance for market development, infrastructure development and development of quality enhancing facilities.
    - Ministry of Agriculture (MoA), Government of India: The Ministry of Agriculture under various schemes provides financial assistance for development of specific crops for investment in seeds, irrigation, farm implements, inputs, infrastructure and training.
    - National Horticultural Board (NHB): NHB promotes integrated development in horticulture, assists in development of post harvest management infrastructure, promotes production and processing of fruits and vegetables, strengthening of market information systems and assists in R&D programs in cultivation and processing. NHB's financial schemes are directed towards commercial horticulture and infrastructure related to post harvest techniques Financial assistance from these organizations are in the form of grants, back-ended subsidies, soft loans, refinance etc., with most of the schemes directed to specific sub-sectors of the agri/food processing industry.

2.3 Key Issues in Financing

One of the main reasons cited by bankers behind low credit flow to sector is the high Non Performing Asset (NPA) level in the sector because of seasonal availability of raw material and thus underutilization of capacity.

For the very same reason, inventory holdings are also high. The working capital finance issued through normal Maximum Permissible Bank Finance method does not address the funding requirements for the sector adequately. The high rate of interest on credit for funding working capital requirements restricts the small players from accessing working capital when the prices of raw material are favourable. This affects procurement of raw material and results in underutilization of capacities.

The banks incur high loan servicing costs due to limited volumes, lack of reliable information and high costs of information on demand-supply, pricing trends, raw material availability, high supervision costs etc. These are passed on to the borrowers in the form of high interest rates.

Concerns about transparency in the financial statements of the small sized food processing units that would like to access credit, results in banks levying a higher risk charge. This increases the cost of borrowing for the small firms.

It has been observed that most of credit going to agriculture is of short term nature as it suits the asset-liability profile of the banks better. As a result projects requiring investments for capital formation, which are long term in nature, such as infrastructure development projects, do not have adequate access to credit.

Further there are several regulations, which limit the availability of finance to the sector, in particular, the definition of Priority Sector Lending, the Cooperatives Act and the Warehousing Corporation Act.

Investments in food processing sector directly benefit the farmers in better realization of value for their produce, advances to food processing sector should be considered for qualification under direct agriculture sub-target of priority sector lending. However, as of now, food processing sector with investments in plants and machinery upto Rs. 5 crores qualify as priority sector credit. This limit is not sufficient to take advantages of scale.

Cooperative Act and Warehousing Act prohibit Cooperatives and Central and State Warehousing from banking with private sector banks.

2.4 Financing for Food Processing Sector- The Way Forward

2.4.1 Operationalising the refinance window

As a follow-up to the budget (2006-07) announcement on the creation of separate window in NABARD with a corpus of Rs.1000 Crores to provide refinance for loans disbursed to food processing industries, NABARD has earmarked Rs.1000 Crores in its refinance budget for 2006-07. However, the offtake of refinance from NABARD is yet to attain the desired momentum. The early offtake is to an extent of Rs.100 Crores. The major reason for the slow progress in credit disbursement is the high interest rate at the ultimate borrower level. While presently the interest rate at the entrepreneur level is around 12%, the rate of interest charged by NABARD on its refinance to bank for loans above Rs.50,000 is 8% for commercial banks, 7.5% for RRBs and 7% for cooperative banks. It is imperative to make available refinance to banks at a lower rate. It is proposed to give a subvention of Rs. 30 Crore for the entire corpus of Rs. 1000 Crore, which would reduce the rate of refinance by 30%.

2.4.2 Zero Cost/ Venture Capital Fund for Food Processing Industries

In order to provide fillip to small scale food processing units, with financial outlay upto Rs.50 lakhs, it is proposed to set-up a zero cost capital fund to provide assistance in the form of 50% loan at zero per cent interest rate. The fund with a corpus of Rs.200 Crores (with an annual contribution of Rs.40 Crore) for the 5 year period is proposed to be set up by MFPI in NABARD. NABARD will provide 50% of the bank loan in the form of revolving fund assistance at zero rate of interest to banks who in turn will provide 50% of the bank loan at 0% rate of interest and remaining 50% of bank loan at normal rate. The revlving fund assistance availed will be repaid to NABARD to replenish the fund from the repayment received from borrowers. This mechanism will bring down the interest cost of new entrepreneurs to an attractive level for taking up new ventures in food processing sector. Incidentally, the Department of Animal Husbandry and Fisheries of Ministry of Agriculture, GoI has operationalized a similar venture assistance support (Zero cost capital support) for dairy and poultry production/ infrastructure units in decentralized sector through banks participation. NABARD is the nodal agency for channelising the zero-cost capital assistance/ venture capital assistance on behalf of Ministry of Agriculture.

TRADABLE RECEIPT FINANCING: THE EXAMPLE OF CEDULA DE PRODUTO RURAL IN BRAZIL

In the late 1970s the Brazilian agricultural sector was characterized by abundant subsidized credit and minimum price guarantees. Despite gradual liberalization in the 1990s, there were no formal and secure mechanisms and guarantees to securitize agricultural lending. In response to this situation, in 1994 the Cedulo de Produto Rural (CPR) was created through Law 8,929. The CPR is a bond issued by rural producers, farmers' associations, and cooperatives in order to obtain financing for production. There are three types of CPRs:

1. *Physical CPR:* The producer receives cash or inputs when the bond is issued and must deliver an agreed amount of production at an agreed location and future date.

2. *Financial CPR:* The producer receives cash or inputs when the bond is issued, but settles the debt with cash instead of products.

3. *CPR indexed to futures:* The producer receives cash or inputs when the bond is issued, but the settlement is based on the amount of production established on the bond, multiplied by the agreed upon reference price at the time of settlement.

The main benefit of the CPR is that it brings new financiers into the agricultural finance markets by reducing their risk. The CPR bond guarantees payment in case of nonperformance or breach of contract on the part of the bond issuer through an out-of-court dispute settlement mechanism. This reduces risk of moral hazard and speeds the recovery of loans when needed.

The evolution of the CPR has also been one of its keys to success. Initially the physical CPR saw a limited number of investors because many financiers did not want to risk receiving physical

2.4.4 Warehouse receipt based financing

Warehouse receipt financing is a collateralized commodity transaction where goods themselves provide security for loans. The commodities are stored in a licensed warehouse that issues a receipt which is accepted by the commercial banks as collateral security for grant of loan against the goods stored in the warehouses. In other words, a warehouse receipt is guaranteeing the existence and availability of a given quantity and quality of a commodity in storage for safekeeping, which is often used in cash and futures transactions.

Warehouse receipt based financing offers the following advantages:

1. This instrument will give farmers the option of holding back their produce if the prices are low and prevent distress selling.
2. A transaction backed by warehouse receipt also allows a bank to shift the risk from the borrower to the asset since the bank can sell the liquid collateral asset in case of default.
3. This kind of lending reduces high loan servicing costs due to limited volumes, high information costs and high supervision costs. Since the lending costs for banks are reduced, the interest rate for borrowers are also reduced.
4. Warehouse receipt offers opportunity for borrowers to lack fixed assets altogether to access loans

Banks such as ICICI, HDFC, UTI and IDBI have started granting loans to farmers based on the quality of their produce and warehouse receipts, with the crop (wheat, potatoes, cotton or sugarcane) as collateral.

Measures such as amendments in Negotiable Instruments Act to introduce negotiability of warehouse receipts, creation of appropriate regulatory environment, dematerialisation of warehouse receipts and creation of a network of warehouses will further promote warehouse receipt based financing.

2.4.5 Amendments in restrictive Acts and Policies

Acts and policies such as Cooperatives Act and State Warehousing Corporation Act need to be amended to allow private banks to finance cooperative societies and Central and State Warehousing Corporation respectively.

Stamp Duty on documents executed in connection with agricultural loans to farmers need to be abolished to reduce the burden on borrowers. A step in this direction has been taken by the governments of Andhra Pradesh, Uttar Pradesh, Tamil Nadu and Gujarat. Other state governments need to take similar steps.

2.4.6 Other initiatives

One of the reasons leading to high risk perception about borrowers in the Food Processing Industry is lack of information about borrowers on part of the credit institutions. Credit Information Bureau of India Ltd. (CIBIL) aims at providing credit granting institutions information pertaining to commercial borrowers. CIBIL could be mandated to maintain a separate database of those availing credit in the Food Processing Sector.

Under the Credit Guarantee Trust Fund for Small Industries (CGTSI) set up by SIDBI and GoI, any collateral free credit upto Rs. 25 lakhs can be extended guarantee cover. The guarantee cover available is up to 75% of the loans. This fund may be used more actively to cover the cases in the food processing sector.

While there are Venture Capital Funds operating in the country, need is for dedicated Venture Capital Funds for the Food Processing Industry preferably in the private sector, especially to finance innovative products.

Finally, MSMEs in the sector have to be linked to large corporate units which may act as a guarantor for credit facilities in the sector.

THE USE OF REVERSE FACTORING: THE EXAMPLE OF NAFIN IN MEXICO

NAFIN is a state-owned development bank in Mexico that uses new technology to provide small and micro enterprise loans and enhances its lending with training and technical assistance. In 2004, the typical small Mexican firm received less than 17 percent of its financing from banks, relying instead upon family savings and other personal funds, while almost 80 percent of small firms received no bank credit at all.

In response to this lack of financing in the formal sector, NAFIN developed an electronic platform for reverse factoring through a program called *Cadenas Productivas*, (or Productive Chains), which provides greater opportunity for small suppliers to access working capital. While currently a small percentage of NAFIN's factored portfolio is in the agricultural sector, its success with small and medium enterprises (SMEs) shows a potential path for extending lending to agricultural clients.

The aim of *Cadenas Productivas* is to create linkages between small suppliers and "big buyers." The big buyers are large, creditworthy firms that have low credit risk. The suppliers are small, risky firms that generally cannot access any financing from the formal banking sector. The NAFIN reverse factoring program allows small suppliers to use their receivables—or balance due—from big buyers to receive working capital financing. This transfers the credit risk of small suppliers to their high-quality customers, which allows them to access a larger amount of less-expensive financing.

3 FDI in food processing sector

FDI in food processing sector is low, constituting only 4% of the total FDI in the period 1991-2004. The actual inflow is only about 28% of FDI approved. This is despite the fact that with the exception of food retailing, plantations and alcoholic beverages, 100% FDI is permitted in the sector. The following policies act as deterrent to FDI in the sector.

1) Agricultural Land Ceiling Act obstructs large scale corporate farming which is prerequisite for large investments in processing facilities.
2) APMC Act further restricts direct farmer-processor linkages for sourcing of quality and quantity raw material
3) Although Contract farming is allowed in various states, enforcement of such contracts remains an area of concern

A policy focus on the above is essential to facilitate flow of FDI to the sector. Also, a single window clearance for FDI will go a long way in increasing FDI to the sector.

4 Proposed Financial Outlay

Component	Amount (in Rs. Crore)
Subvention of Interest	30
Zero cost/ Venture Capital Fund	100
Total	130

Chapter 8: Proposed Financial Outlay

Component	Existing	Proposed	Number of Units	Financial Outlay XIth Plan (Rs Crore)
Technology Upgradation/ Establishment, Modernization	25% of the plant and machinery and technical civil works subject to a maximum of Rs. 50 lakhs in general areas and 33.33% subject to a maximum of Rs. 75 lakhs in difficult areas	40% of the plant and machinery and technical civil works in general areas and 50% in difficult areas subject to a maximum of Rs. 1 Crore.		600.00
Food Park	25% of the project cost up to a maximum of Rs.4 Crore (NE region assistance & difficult areas is 33.3% Grant covers common facilities like common processing/packaging, cold storage, food testing and analysis lab, effluent treatment plant, power, water etc	Financial Assistance @75% of the project cost (NE Region and difficult areas 90%) subject to a ceiling of Rs 50 Crore PMA cost @ 5%	30	1500.00 75.00
Modernised Abattoir	25% of the total cost of plant upto a maximum of Rs.4 crore (NE region assistance is 33.3.%)	50% subject to a maximum of Rs15 Crore (60 % in NE and difficult areas) PMA cost @ 10%	50	750.00 75.00
Cold Chain infrastructure Value Added Centre Packaging Centre	25% of the total cost of plant upto a maximum of Rs.75 lacs (NE region assistance is 33.3.%) 25% of the total cost of plant upto a maximum of Rs.75 lacs (NE region assistance is 33.3.%) 25% of the total cost of plant upto a maximum of Rs.2 crore (NE region assistance is 33.3.%) 25% of the total cost of	50 % in general areas and 75% in difficulty areas Subject to a maximum of Rs.10 Crore (Average off take per unit estimated at Rs 7 Crore)	30	210.00

Component	Existing	Proposed	Number of Units	Financial Outlay XIth Plan (Rs Crore)
Irradiation Facilities Integrated Cold Chain and Strategic Distribution Centres	plant upto a maximum of Rs.4 crore (NE region assistance is 33.3.%) New Initiative			550.00
R&D, Labs etc National level State level General HACCP		@Rs4Crore/lab @Rs1 Crore/lab @50 lakhs per lab @20 lakhs per unit	 84 5 29 50 500	60.00 74.00 100.00
Street Food Food street	New initiative	Carts @25 % cost of 30,000 50 cities. 20%for PM 25 cities @Rs 5crore	50,000	38.00 15.00 125.00
NIFTEM	New initiative			244.00
Meat Board	New initiative			10.00
Food Authority	New initiative			50.00
Wine Board	New initiative			10.00
PPRC up gradation				50.00
Schemes to be implemented without modifications Promotional Activities and Brand Building Human Resource Development Strengthening of Nodal Agencies	 Different components have different patterns of assistance Different components have different patterns of assistance Lump sum grant of Rs. 5 lakhs for purchase of basic	 Will continue without modifications Will continue without modifications Will continue without		 100.00 100.00 130.00

Component	Existing	Proposed	Number of Units	Financial Outlay XIth Plan (Rs Crore)
	office equipments. Additional sum upto 1 lakh for engaging personnel for database preparation, publication, office consumable etc.	modifications		
Subvention of interest Zero cost capital fund	New Initiative New Initiative			30.00 100.00
Implementation costs				10.00
Total				5006.00

Annexure I

Terms of Reference and Composition of Working Group

Annexure II

Terms of Reference of Sub-Groups

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Annex-I

Terms of Reference for Sub-Groups

I. Sub-Group on Infrastructure including Supply Chain

While formulating the recommendations, keeping in view the terms of reference indicated in the Order dated 8.6.2006 of the Planning Commission (Annexure-II), the suggested terms of reference for the Sub-Group are as below:

(i) Recasting the Food Park Scheme keeping in view the feedback received.
(ii) Interventions to streamline the supply chain and taking the farmer to market.
(iii) Give a push to investments in the cold chain infrastructure.
(iv) Suggest diversified and cluster-based development of the sector.
(v) Upgrading the safety and quality of infrastructural sector.
(v) To recommend the role of the Government, voluntary and other agencies, particularly small industry associations, keeping in view the socio-economic objectives and their strategy for development,
(vii) To recommend effective marketing strategies including the role of consortia, State Agri Industries Development Corporations, large houses, etc.
(viii) To identify key areas and explore ways for implementing Public-Private Partnership model in identified areas
(ix) To suggest measures for dispersal of FPI activities particularly in relatively backward States/Areas, hilly areas, rural areas and effective reduction of regional imbalances in industrial growth and utilization of agricultural and horticultural products of the region.

(x) To review the existing coverage of developmental schemes/programmes for SC/ST/Minorities/Women engaged in the sector and to suggest specific measures for their upliftment and promotion.

(xi) To make such other recommendations as are considered appropriate.

II. Sub-Group on R&D, HRD, Lab and Standards/ Food Fortification

While formulating the recommendations, keeping in view the terms of reference indicated in the Order dated 8.6.2006 of the Planning Commission (Annexure-II), the suggested terms of reference for the Sub-Group are as below:

(i) Time bound upgradation of the standards/quality of FPI in association with trade Associations.

(ii) Building capacity of certification and accreditation bodies and promote self-regulation.

(iii) Networking of the laboratory infrastructure to support the Integrated Food Law.

(iv) To suggest policy framework for the development of FPIs considering socio-economic objectives, training needs, modernization, technology upgradation, quality improvement, productivity, employment generation, exports, etc. for the Eleventh Plan and set targets for each year of the Eleventh Plan period.

(v) To suggest measures for increasing productivity of individual workers/artisans/entrepreneurs through training, improved tools, equipment and processes, common facilities, quality standards, HACCP, GMP, etc.

(vi) To review the existing training facilities, entrepreneurship development and estimated gaps prevalent during the Tenth Plan period and to suggest the measures to meet the requirements in quantitative and qualitative terms for the Eleventh Plan.

(vii) To review the working of the existing R&D institutions and to set measures for their reorganization, revitalization and linkages with other R&D establishments in defence, electronics, universities, etc, to meet the objectives of the Eleventh Five Year Plan and to suggest appropriate time bound R&D programmes and mechanism for their commercial utilization, dissemination and delivery to the ultimate users of technology.

(viii) To examine the feasibility and desirability of bringing all SSE products under quality certification by upgradation of quality standards, testing facilities, etc.

(ix) To suggest measures for dispersal of FPI activities particularly in relatively backward States/Areas, hilly areas, rural areas and effective reduction of regional imbalances in industrial growth and utilization of agricultural and horticultural products of the region.

(x) To review the existing coverage of developmental schemes/programmes for SC/ST/Minorities/Women engaged in the sector and to suggest specific measures for their upliftment and promotion.

(xi) To make such other recommendations as are considered appropriate.

III. Sub-Group on Taxation/Finance and Trade

While formulating the recommendations, keeping in view the terms of reference indicated in the Order dated 8.6.2006 of the Planning Commission (Annexure-II), the suggested terms of reference for the Sub-Groups are as below:

(i) Provide a uniform, stable and low taxation regime for FPI to offset the inherent volatility of the sector.

(ii) Measures to facilitate greater flow of resources from the banking systems to FPI.

(iii) To suggest a policy framework giving special emphasis on service units, self-employment, incentives to FPI units including tiny and small units to graduate to medium and large scale, to improve the strengths of the FPI sector to enable them to face global competition in view of the economic liberalization, WTO regime, SAFTA and Chinese impact on Indian economy.

(iv) To estimate the requirements of institutional finance/credit and to suggest measures to achieve the flow of required institutional finance. The Working Group should also suggest innovative measures for meeting the requirements of working capital and term loans.

(v) To suggest innovative financial instruments for raising funds from the capital market for meeting the financial requirements of the FPI sector.

(vi) To recommend a suitable strategy for promotion and augmentation of export and suggest annual targets for the Eleventh Plan period with perspective plan for a period of 10 years. The Sub-Group may also work out an estimate for indirect exports from the FPI sector.

(vii) To suggest measures for dispersal of FPI activities particularly in relatively backward States/Areas, hilly areas, rural areas and effective reduction of regional imbalances in industrial growth and utilization of agricultural and horticultural products of the region.

(viii) To review the existing coverage of developmental schemes/programmes for SC/ST/Minorities/Women engaged in the sector and to suggest specific measures for their upliftment and promotion.

(ix) To make such other recommendations as are considered appropriate.

IV. Sub-Group on F&V Products/Beer & Wine

While formulating the recommendations, keeping in view the terms of reference indicated in the Order dated 8.6.2006 of the Planning Commission (Annexure-II), the suggested terms of reference for the Sub-Group are as below:

(i) Policy framework to support the healthy development of the sub-sector to augment framers' income and investments.

(ii) Upgrade quality and brand equity of wine and beer towards more value additions

(iii) Review of FPO and suggest improvements

(iv) To critically appraise the policies, programmes and achievements of F&VP products/Wine & Beer sector in relation to the production, employment (direct and indirect) and exports during the Tenth Plan period and to analyse the reasons for shortfalls, if any, and suggest appropriate remedial measures.

(v) To set out objectives and suggest schemes and programmes for the promotion of F&V products/beer & wine units for their growth during the Eleventh Plan period with perspective period of 10 years.

(vi) To make estimates for plan outlays required for promotional/developmental schemes and investment required in the sector to achieve the above targets suggested for the Eleventh Plan period for production, employment and exports.

(vii) To estimate the requirements and availability of critical/scarce raw materials and other inputs and make recommendations for meeting them along with required forward and backward linkages.

(viii) To review the existing planning and monitoring mechanism at Central/State/Local levels and to recommend measures to improve the same to build up a comprehensive data base for FPI sector.

(xii) To review the existing mechanism of data collection and also to suggest measures to improve accuracy and authenticity of data-base

(ix) To review the growth of mother ancillary units over the Tenth Plan period and to make recommendations for the Eleventh Plan with a 10-year perspective.

(x) To identify key areas and explore ways for implementing Public-Private Partnership model in identified areas for sustainable development of sector.

(x) To suggest measures for dispersal of FPI activities particularly in relatively backward States/Areas, hilly areas, rural areas and effective reduction of regional imbalances in industrial growth and utilization of agricultural and horticultural products of the region.

(xi) To review the existing coverage of developmental schemes/programmes for SC/ST/Minorities/Women engaged in the sector and to suggest specific measures for their upliftment and promotion.

(xii) To make such other recommendations as are considered appropriate.

V. Sub-Group on Meat, Poultry, Fish and Dairy

While formulating the recommendations, keeping in view the terms of reference indicated in the Order dated 8.6.2006 of the Planning Commission (Annexure-II), the suggested terms of reference for the Sub-Group are as below:

(i) Modernisation of existing abattoirs and attract investment in meat processing.

(ii) Improve the regulatory mechanism for the sub-sector including MFPO.

(iii) Synergy with MPEDA, DAH and other agencies to promote investments and safety of food.

(iv) To critically appraise the policies, programmes and achievements of meat, poultry, fish and dairy sector in relation to the production, employment (direct and indirect) and exports during the Tenth Plan period and to analyse the reasons for shortfalls, if any, and suggest appropriate remedial measures.

(v) To set out objectives and suggest schemes and programmes for the promotion of meat, poultry, fish and dairy units for their growth during the Eleventh Plan period with perspective period of 10 years.

(vi) To make estimates for plan outlays required for promotional/developmental schemes and investment required in the sector to achieve the above targets suggested for the Eleventh Plan period for production, employment and exports.

(vii) To estimate the requirements and availability of critical/scarce raw materials and other inputs and make recommendations for meeting them along with required forward and backward linkages.

(viii) To review the existing planning and monitoring mechanism at Central/State/Local levels and to recommend measures to improve the same to build up a comprehensive data base for FPI sector.

(ix) To review the growth of mother ancillary units over the Tenth Plan period and to make recommendations for the Eleventh Plan with a 10-year perspective.

(x) To identify key areas and explore ways for implementing Public-Private Partnership model in identified areas for sustainable development of sector.

(xi) To suggest measures for dispersal of FPI activities particularly in relatively backward States/Areas, hilly areas, rural areas and effective reduction of regional imbalances in industrial growth and utilization of agricultural and horticultural products of the region.

(xii) To review the existing coverage of developmental schemes/programmes for SC/ST/Minorities/Women engaged in the sector and to suggest specific measures for their upliftment and promotion.

(xiii) To make such other recommendations as are considered appropriate.

Annexure III

List of Food Parks Approved by MFPI

List of Food Parks Approved by MFPI

S.No.	State	Name of Agency	Project Location	Year
1	Andhra Pradesh	Andhra Pradesh Industrial Infrastructure Corporation Ltd.	Chittoor, A.P.	2000-2001
2	Assam	Assam Small Industries Development Corporation Ltd., Guwahati	Chaygaon, Distt. Kamrup	2000-2001
3	Bihar	North Bihar Industrial Area Development Authority, C/o Department of Industries, Government of Bihar	Hajipur, District Vaishali, Bihar	2002-2003
4	Chhattisgarh	Chhattisgarh State Industrial Development Corporation (CSIDC), Raipur	Vill: Teadesara, District Rajnandgaon	2001-2002
5	Haryana	Haryana State Industrial Develoment Corporation Ltd.	Saha, Ambala	2001-2002
6	Haryana	Haryana State Industrial Develoment Corporation Ltd.	Rai, Sonipat, Haryana	2001-2002
7	Jammu and Kashmir	J&K State Industrial Development Corporation Ltd.	Khunmoh, Srinagar	2000-2001
8	Jammu and Kashmir	Jammu Agro Industrial Food Park	Jammu	2001-2002
9	Jammu and Kashmir	J&K State Industrial Development Corporation Ltd.	Sopore, Baramulla	2002-2003
10	Karnataka	Food Karnataka Ltd.	Kolar	2001-2002
11	Karnataka	Food Karnataka Ltd.	Bagalkot	2000-2001
12	Karnataka	Food Karnataka Ltd.	Jevargi	2002-2003
13	Kerela	Kerela Industrial Infrastructure Development Corporation (KINFRA), Trivandrum	Dist. Mallapuram, Kerela	1996-97
14	Kerela	Seafood Park (India) Ltd.	Aroor, Alappuzha, Kerela	2001-2002
15	Kerela	Kerela Industrial Infrastructure Development Corporation (KINFRA), Trivandrum	Mazhuvannur	2002-2003
16	Kerela	Kerela Industrial Infrastructure Development Corporation (KINFRA), Trivandrum	Adoor	2005-06

S.No.	State	Name of Agency	Project Location	Year
17	Madhya Pradesh	Madhya Pradesh Audyogik Kendra Vikas Nigam (Indore) Ltd., Indore	Maandsaur	2000-2001
18	Madhya Pradesh	Madhya Pradesh Audyogik Kendra Vikas Nigam (Indore) Ltd., Indore	Nimrani, Dist. Khargone, M.P.	2001-2002
19	Madhya Pradesh	Madhya Pradesh Audyogik Kendra Vikas Nigam (Indore) Ltd., Bhopal	Hoshangabad	2001-2002
20	Madhya Pradesh	M.P. Audyogik Kendra, Vikas Nigam (Jabalpur) Ltd., Jabalpur	Borgaon, Dist. Chhindwara	2001-2002
21	Madhya Pradesh	M.P. Audyogik Kendra, Vikas Nigam (Gwalior) Ltd., Gwalior	Malanpur Ghirongi, District Bhind (M.P.)	2002-2003
22	Madhya Pradesh	M.P. Audyogik Kendra, Vikas Nigam (Jabalpur) Ltd., Jabalpur	Maneri, District Mandla	2002-2003
23	Maharashtra	Maharashtra Agro Industries Development Corporation Ltd., Mumbai	Butibori, Nagpur, Maharashtra	2000-2001
24	Maharashtra	Maharashtra Industrial Development Corporation, Mumbai	Vinchur, Distt. Nashik	2001-2002
25	Maharashtra	M/s Haliram Krishi Udyog Pvt. Ltd., Nagpur	Mouza Gumthala, Nagpur	2002-2003
26	Maharashtra	M/s Agri Food Park (India) Ltd., Pune	Village Sangvi, Taluka Khandala, Distt. Satara (Near Pune)	2002-2003
27	Maharashtra	Maharashtra Industrial Development Corporation, Mumbai	Palus, Distt. Sangli	2003-2004
28	Manipur	Manipur Food Industries Corporation Ltd., Manipur	Lamphelpat, Imphal, Manipur	2000-2001
29	Manipur	Rishang Keishing Fondation for Management of Tribal Areas	Ukhrul Distt., Manipur	2001-2002
30	Mizoram	Mizom Food and Allied Industries Corporation (MIFCO)	Chhingchip, Mizoram	2001-2002

S.No.	State	Name of Agency	Project Location	Year
31	Orissa	Orissa Industrial Infrastructure Development Corporation (IDCO)	Khurda	2001-2002
32	Punjab	Punjab Agri Export Corporation (PAGREXCO), Chandigarh	Sirhind distt. Fatehgarh Sahib	2000-2001
33	Rajasthan	Rajasthan State Industrial Development and Industrial Corporation Ltd. (RIICO)	Ranpur, Distt. Kota	2002-2003
34	Rajasthan	Rajasthan State Industrial Development and Industrial Corporation Ltd. (RIICO)	Borananda, Distt. Jodhpur	2002-2003
35	Rajasthan	Rajasthan State Industrial Development and Industrial Corporation Ltd. (RIICO)	Sri Ganganagar	2003-2004
36	Tamil Nadu	V.P.S Ayyemperumal Nadar and Sons, Madurai	Viudhnagar, Tamil Nadu	2000-2001
37	Tamil Nadu	Nilakottai Food aprk Ltd. (Joint venture of TANSAMB and SIPCOT)	Nilakottai Ind. Estate, Dindigul Distt.	2004-2005
38	Tripura	Tripura Industrial Development and Corporation Ltd., Agartala	Bodhjungnagar, West Tripura	2000-2001
39	Uttar Pradesh	Wise Industrial Park Ltd., New Delhi	Ghaziabad	1999-2000
40	Uttar Pradesh	UP State Industrial Development Corporation (UPSIDC), Kanpur	Kursi Road, Barabanki	2000-2001
41	Uttar Pradesh	UP State Industrial Development Corporation (UPSIDC), Kanpur	Varanasi	2000-2001
42	Uttar Pradesh	M/s Kushal International Ltd., New Delhi	Village Kushalipur, Tehsil Behat, Dist. Saharanpur, Uttar Pradesh	2002-2003
43	Uttar Pradesh	Gorakhpur Industrial Development Authority	Shahajanwa, Gorakhpur	2004-2005
44	West Bengal	Modular Consultants Pvt. Ltd., Kolkata	Dankuni, Dist. Hooghly, W.B.	1996-1997
45	West Bengal	State Fishermen's Cooperative Ltd. (BENFISH), Kolkata	Mouza Chakgaria, 24 Paragnas (South)	1998-99

S.No.	State	Name of Agency	Project Location	Year
46	West Bengal	Haldia Development Authority, Haldia	Haldia, Dist. Midnapore	2002-2003
47	West Bengal	State Fishermen's Cooperative Ltd. (BENFISH), Kolkata	Sultanpur, South 24 Parganas	2003-2004
48	West Bengal	Department of Food Processing Industries and Horticulture, Govt. of west Bengal	Malda	2003-2004
49	West Bengal	Department of Fisheries, Aquaculture, Acquatic Resources and Fishing Harbour, Govt. of West Bengal	Shankarpur, Dist. Purba, Medinipur	2004-2005
50	West Bengal	West Bengal Industrial Developement Corporation	Sankhrail, Howrah	2004-2005
51	West Bengal	Pataka Industries Ltd.	Murshidabad	2005-2006

Annexure IV

Statewise List of Cold Storage Projects assisted by MFPI during 9th and 10th Plan

Statewise List of Cold Storage Projects assisted by MFPI during 9th and 10th Plan

State	No. of projects approved during 9th Plan	No. of projects approved during 10th Plan
Andhra Pradesh	1	1
Assam	1	-
Gujarat	5	3
Haryana	2	1
Himachal Pradesh	1	-
Karnataka	6	-
Kerela	2	1
Madhya Pradesh	3	-
Maharashtra	11	3
Meghalaya	1	1
Orissa	3	-
Punjab	3	-
Uttar Pradesh	1	1
West Bengal	12	-
Lakshdweep	1	-
Manipur	-	1
Delhi	-	1
Goa	-	1
Total	53	14