REPORT OF THE WORKING GROUP ON AGRICULTURAL MARKETING INFRASTRUCTURE AND POLICY REQUIRED FOR INTERNAL AND EXTERNAL TRADE

FOR THE XI FIVE YEAR PLAN 2007-12

AGRICULTURE DIVISION PLANNING COMMISSION GOVERNMENT OF INDIA

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PREFACE

Agricultural marketing and external trade in agricultural commodities are assuming increasing importance in the wake of ushering in second green revolution, improving the living standards of farm families, making India hunger free and turning poverty into history in the shortest possible time. The challenges facing the marketing system are quite different than what these used to be about two decades before.

The Working Group identified the bottlenecks in the domestic marketing system, assessed the size of agricultural markets and supply chain for different farm products and reviewed the working of agricultural markets and wholesale mandies. It reviewed the present status of marketing infrastructure at village haats, assembly centres and terminal markets and projected the infrastructure requirements based on the increases expected in marketed surplus of agricultural commodities. The Working Group also looked at the emerging alternative marketing channels and vertical linkages of marketing groups of farmers with retail and terminal markets and processors. Market information system and existing institutional infrastructure for human resource development in marketing and agribusiness were also analyzed. The Group also reviewed the export performance and identified the constraints in promoting exports of agricultural commodities.

Based on the comprehensive analysis of existing marketing and external trade system, current policies and experience of implementation of various schemes during the past and the X Five Year Plan period, the Group has come out with several recommendations. The main focus of the Working Group in identifying its recommendations had been on (a) improving the efficiency of the marketing system and reducing the costs of marketing, particularly the avoidable waste in the marketing chain; (b) to help value addition at the farm and village level as well as at the secondary level for creating employment in rural areas/small towns and for expansion of the demand for farm products; (c) to develop markets but with less regulation; and (d) to segregate products according to quality and increase quality consciousness both among the farmers and

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actors along the value-chain. The Working Group, while framing its recommendations, recognized that there are three essential/necessary requirements for evolving an efficient agricultural marketing system in India. These are (a) continuous evolution, perfection and transfer of science and technological inputs in agricultural marketing; (b) introduction of 'scale' in agricultural marketing for reaping the benefits of economies of scale; and (c) continuously refining and putting in place a conducive policy and regulatory framework, including withdrawal of the state in many areas.

The recommendations include those relating to marketing system improvement, strengthening of marketing infrastructure, investment needs, possible sources of funds including that from the private sector, improvement in marketing information system using ICT, human resource development in agricultural marketing, and measures needed for promotion of exports. The Group has also suggested for reorientation of the policy paradigm for boosting agricultural marketing and trade.

The Terms of Reference of the Working Group were very comprehensive and the assignment had been a challenging task, which was accomplished with the help and support of many stakeholders. The Group is grateful to Hon'ble Dr Montek S. Ahluwalia, Dy. Chairman of the Planning Commission for assigning this important task to us.

Our interaction with Prof. Abhijit Sen, Member (Agriculture), Planning Commission, during the first meeting of the Working Group was very fruitful in perceiving the expectations of the Planning Commission from this Working Group. We are grateful to Prof. Abhijit Sen for his presence during our meeting and sharing his insights and oversights on the important theme of agricultural marketing.

We approached the task by splitting into four Sub Groups. The main groundwork for the Working Group was accomplished in the Sub Groups, which engaged in several rounds of formal and informal interactions. Each Sub Group came out with quite elaborate report and shared its findings with the members of the whole Working Group in a daylong meeting held at Jaipur. The Sub Groups finalized their reports after incorporating the suggestions and inputs received during our discussions at NIAM, Jaipur.

The arduous work of putting together the four Sub Group reports in a consolidated report of the Working Group was done by the Chairman and Member Secretary, with the support from their respective staff members. It required achieving consistency, avoiding repetition, and properly sequencing the contents in different parts of the report. This apart, framing the recommendations was another daunting task. Though, it required continuous reading and rereading the contents, we could bring out the report, which will help the Planning Commission in formulating the XI Five Year Plan for the very important sector of our economy.

We express our sincere thanks to Dr Sukhpal Singh (Professor, IIM, Ahmedabad), Shri P.M. Sinha (Chairman, Agriculture and Rural Development Committee, FICCI), Dr M. Moni (DDG, NIC), and Shri K.S. Money (Chairman, APEDA) for chairing various Sub Groups and finalizing respective Sub Group reports. Our thanks are also due to Dr W.R. Reddy (Director, Marketing, DoAC, MoA) for his contributions as convenor of Sub Group II on Agricultural Marketing Infrastructure. We also co-opted some senior officers in the Sub Groups. Our thanks are due to these officers viz. Dr M.S. Jairath (Director) of NIAM, and Shri Lallan Rai (AAMA), Shri Hari Prasad (Dy AMA) and Shri Narayanswamy (SMDO) of Directorate of Marketing and Inspection, Faridabad for their inputs in various ways.

We also thank Shri Surinder Singh (Director, Agriculture) and Dr V.V. Sadamate (Advisor, Agriculture) of the Planning Commission for their support to the Working Group. Finally, we sincerely appreciate the hard work done in computer processing of the document by Shri Hemant Sharma, Technical Assistant of the Chairman of the Working Group.

Anurag Bhatnagar Member Secretary (DG, NIAM) S. S. Acharya Chairman (Honorary Professor, IDSJ)

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EXECUTIVE SUMMARY OF THE REPORT OF THE WORKING GROUP ON AGRICULTURAL MARKETING INFRASTRUCTURE AND POLICY REQUIRED FOR INTERNAL AND EXTERNAL TRADE FOR THE XI FIVE YEAR PLAN 2007-12

PROLOGUE

Agricultural marketing and external trade in agricultural commodities are assuming increasing importance in the wake of ushering in second green revolution, improving the living standards of farm families, making India hunger free and turning poverty into history in the shortest possible time. The challenges facing the marketing system are quite different than what these used to be about two decades before.

The Working Group identified the bottlenecks in the domestic marketing system, assessed the size of agricultural markets and supply chain for different farm products and reviewed the working of agricultural markets and wholesale mandies. It reviewed the present status of marketing infrastructure at village haats, assembly centres and terminal markets and projected the infrastructure requirements based on the increases expected in marketed surplus of agricultural commodities. The Working Group also looked at the emerging alternative marketing channels and vertical linkages of marketing groups of farmers with retail and terminal markets and processors. Market information system and existing institutional infrastructure for human resource development in marketing and agribusiness were also analyzed. The Group also reviewed the export performance and identified the constraints in promoting exports of agricultural commodities.

Based on the comprehensive analysis of existing marketing and external trade system, current policies and experience of implementation of various schemes during the past and the X Five Year Plan period, the Group has come out with several recommendations. The main focus of the Working Group in identifying its recommendations had been on (a) improving the efficiency of the marketing system and reducing the costs of marketing, particularly the avoidable waste in the marketing chain; (b) to help value addition at the farm and village level as well as at the secondary level for creating employment in rural areas/small towns and for expansion of the demand for farm products; (c) to develop markets but with less regulation; and (d) to segregate products according to guality and increase guality consciousness both among the farmers and actors along the value-chain. The Working Group, while framing its recommendations, recognized that there are three essential/necessary requirements for evolving an efficient agricultural marketing system in India. These are (a) continuous evolution, perfection and transfer of science and technological inputs in agricultural marketing; (b) introduction of 'scale' in agricultural marketing for reaping the benefits of economies of scale; and (c) continuously refining and putting in place a conducive policy and regulatory framework, including withdrawal of the state in many areas.

The recommendations include those relating to marketing system improvement, strengthening of marketing infrastructure, investment needs, possible sources of funds

including that from the private sector, improvement in marketing information system using ICT, human resource development in agricultural marketing, and measures needed for promotion of exports. The Group has also suggested for reorientation of the policy paradigm for boosting agricultural marketing and trade.

RECOMMENDATIONS

The recommendations of the Working Group have been divided into six areas of agricultural marketing and trade related issues, and these flow from the detailed analysis and justification presented in the preceding chapters. The areas are marketing system improvement and conducive policy environment; strengthening of marketing infrastructure and investment needs; improving market information system with the use of ICT; human resource development for agricultural marketing; promotion of exports/external trade; and reorientation of policy paradigm.

1 Marketing System Improvement and Conducive Policy Environment

1.1 Wholesale Markets Management

- (1) Agricultural marketing reforms initiated must be taken to logical conclusion by operationalizing the amendments as envisaged by the model Act. Rules must be notified by the States and the reform measures should be publicized among all stakeholders. To facilitate the State Governments, Ministry of Agriculture should frame model rules and procedures for circulation to states as guidelines.
- (2) Licensing procedures is to be simplified. An entrepreneur should be able to apply for a single unified license at the state level to enable procurement in any district or market without hindrance or requirement for additional paper work. In other words, single unified license for buying, procuring, selling of inputs, storage, and processing of all agriculture commodities for the State as whole be introduced.
- (3) We should move to a regime of professionally managed wholesale markets. The existing markets with APMCs could be leased out for upgradation and management on long term contracts or be converted into public–private partnership markets. The organization of markets should be on the principle of a service industry. There is also a need to encourage markets to be set up by the private sector and farmers' cooperatives. This will attract private investment in creation of much needed marketing infrastructure, create competition and ensure better service to the farmers.
- (4) In the context of market regulation and development, all States and UT Governments should be encouraged/incentivised to:
 - (i) Hold regular elections of agricultural produce market committees and bring professionalism in the functioning of existing regulated markets.
 - (ii) Plough back the market fee for development of marketing facilities and investments for creation and/or upgradation of infrastructure in

market yards/sub-yards. Priority be given to cleaning, sorting, grading and packaging facilities in villages, sub-yards and yards.

- (iii) Extend greater flexibility to stakeholders, sellers as well as buyers to interact in the markets. For this, the market needs to be conceptualized in wider a context. Further, not only the licensing of traders, commission agents and other market functionaries need to be liberalized by de-linking the licenses with ownership of shops in the yards/sub-yards, the requirement of multiple licensing for each market within a State needs relaxation.
- (iv) Promote grading, standardization, packaging and certification in the market area.
- (v) Ensure transparency in auction system, penalization on arbitrary deductions from the farmers' realization, prompt payments to farmers, dissemination of market intelligence and speedier and hassle free transactions in the market.
- (vi) Improve weighing systems by installing bulk weighment system and handling, in a time bound manner.

1.2 Promotion of Contract/Cooperative Marketing

- (1) Institutional innovations aimed at collective action for marketing should be encouraged and promoted.
- (2) Alternative institutional arrangements like contract farming, farmers companies and New Generation Cooperatives for coordinating the marketing efforts of small farmers should be evaluated in different social and cultural settings and encouraged for adoption according to social feasibility.
- (3) There are several success cases (formal as well as informal) of collective marketing by farmers and NGOs, which should be documented and publicized for others to follow or adopt.
- (4) In view of the preponderance of small and marginal farmers in the country, and the need for improving their viability in the changing and competitive environment of agribusiness, the networking or clustering of farmers for the purpose of marketing of their surpluses can be achieved through such alliances as contract farming or cooperative marketing.
- (5) Contract farming that helps infusion of new technology and capital in farm business should be popularized and encouraged.
- (6) A sustainable company-farmer partnership requires mutual respect and a fair and transparent negotiation process, which should be built into contract farming agreements.
- (7) Major conditions for successful interlocking between agribusiness firms and small producers are increased competition for procurement, guaranteed market for farmers produce, effective repayment mechanism, and market

information for farmers, which should be adequately recognized in evolving contract farming agreements.

- (8) Innovative pricing mechanisms like bonus, share in company equity, and quality based pricing should also be built into contract farming agreements.
- (9) The government intervention in contract farming arrangements should be minimum but it should facilitate the arrangement from outside.
- (10) Though the monitoring role of APMC or any other government agency may be desirable, these should not be made a party to the contracts.
- (11) The government should not police contracts or impose contract on unwilling firms or in inappropriate situations.
- (12) For the success of contract farming arrangement, there should be an element of competition among alternate contractors.
- (13) The NGOs can play a useful role in promoting the linkages of small farmers with agribusiness firms or companies, which should be encouraged as a state policy.
- (14) There is no need to look for permanence in contract farming arrangements and as the market conditions change, contract farming may be allowed to wither away.
- (15) The existing scheme of Ministry of Food Processing Industries, related to financial incentive to the contractor, in the form of reimbursement of 5 percent of value of raw material should be continued.
- (16) For the success of Corporate Farming, corporate agencies should be encouraged to lease the lands to small farmers as contract growers.
- (17) The lessons from Amalsad and Gadat Cooperatives should be widely publicized and cooperatives in output marketing and processing should be appropriately promoted.
- (18) Primary Agricultural Cooperative Societies should be roped in for primary value addition at the local level and marketing of members' farm products.
- (19) For checking the infiltration of traders and middlemen as sellers in farmers markets, the participating farmers should be organized into management groups and responsibility of identifying the users of these markets be given to Farmers Management Groups.
- (20) Producers or farmers organizations should be promoted by providing them financial support for professional managerial services and for creation of some critical post-harvest handling/processing infrastructure.
- (21) With the increasing tendency of organized retailing (like supermarkets), farmers organizations should be provided support in the form of necessary

infrastructure of grading, sorting and packaging that will help in increasing farmer to fork linkages.

1.3 Legal Framework and Fiscal Matters

- (1) There is a need for bringing uniformity in the state-level tax structure in agricultural commodities for improving the market efficiencies. Taxes and fees on raw agricultural commodities should be rationalized, with a ceiling limit of 4 percent. In principle, raw agricultural commodities should attract zero tax (including purchase tax, mandi tax, commission of agents, and so on, which in Punjab today accounts for about 11 percent on wheat). This can be done by allowing grain companies/traders to buy directly from farmers without going through commission agents, and abolishing purchase tax.
- (2) Octroi and Entry Tax should be abolished wherever exists. Uniform Value Added Tax (VAT) in agriculture, should be introduced in the following manner, which should help the growth of the agro-processing industry:
 - On processed products of a perishable nature zero percent
 - Other processed foods (excluding tobacco and alcoholic beverages) 4 percent
- (3) There is need to abolish or reduce fees, cess, taxes, and duties on procurement of agricultural or horticultural produce through any registered contract-farming programme. This would promote direct procurement, improve quality of produce and lead to reduction in the load on the State and Central procurement system.
- (4) Provide capital subsidies to processing industries along with subsidized interest rates for setting up bio fuel plants and provide tax/duty concession for the bio-diesel producers.
- (5) Treat 150 percent of investment by private sector in agricultural marketing infrastructure chain as deductible expenditure like in the case of R&D, for the purpose of income tax.
- (6) The *de facto* restrictions on movement of goods across State borders should be removed by harmonizing state-level taxes and providing for their hassle free collection at convenient points. The country should be conceptualized as a unified integrated national market.
- (7) Essential Commodities (Amendment) Act should be modified to provide for imposition of trade and marketing restrictions only during the exceptional situations of demand-supply dislocation, market aberration and price volatility.
- (8) The rules and regulations under the Food Safety and Standards Act 2006, which has been passed by the Parliament, should be expeditiously formulated and notified.
- (9) The Warehousing (Development and Regulation) Bill 2005, which is now before the Parliament, should be expeditiously passed.

- (10) Set up an accreditation agency for certified warehouses and warehouse receipts. Encourage private sector, cooperatives and panchayats to set up rural godowns. Specify standards and permit warehousing receipt system.
- (11) Exempt various taxes and levies arising on the negotiability of the warehouse receipts.
- (12) The Bill for amendment in Forward Contracts (Regulation) Act should be expeditiously passed to enable the FMC for effective regulation of trade in futures. There should be rational riders on physical delivery in futures markets. At present, futures are allowed for six months. It should be extended at least to 12 months so that full crop marketing year and its seasonality are covered. Restrictions on futures trading in livestock products should also be withdrawn.
- (13) Bring substantial jump in public investment as suggested in this report.
- (14) Investments in the entire agri-value chain like creation of cold chain, new agricultural marketing infrastructure or modernization of existing markets should be eligible for agricultural loans under priority sector lending.
- (15) Encourage Foreign Direct Investment (FDI) in food retailing with due safe guards of protecting the existing retail corner stores/employees of these stores.
- (16) In attracting 'Foreign Capital' safeguard should be provided against Flight by Night Operators. A suitable mechanism should be devised so that whenever the private parties come they have a real and sincere stakes both in terms of land and money.
- (17) Considering the high pay-off from rural roads in terms of both poverty reduction and accelerated growth, the public investment in rural roads should be stepped up.

1.4 Promotion of Grading and Quality Standards

For promoting grading and standardization and improving the quality of the produce, measures needed are –

- (1) Existing national grade standards should be harmonized with international grade standards.
- (2) Grade standards for all farm commodities should be comprehensively reviewed and reformulated, including the commodities traded only in the domestic market.
- (3) Grading facilities at all the stages of marketing chain should be upgraded with the establishment of grading units and pack-houses in the villages/sub-yards, establishment of grading laboratories at appropriate locations, establishment of State level grading and standardization bureau and by providing intensive training to farmers.

1.5 Simplification of Procedures for Speedy Implementation of Schemes

The procedures for implementation of schemes related to agricultural marketing, including those intended to attract private investment should be simplified on the following lines:

- (1) Encourage States to professionalize the management of existing marketing channels and regulated markets by outsourcing the activities in the markets. The states must also modernize the markets in PPP mode.
- (2) Public support grants must be provided to fill the viability gap of the marketing infrastructure projects and the same be estimated to be around 50 percent of the project cost. Therefore, the grant for private/state agencies may be pegged at 50 percent of the project cost.
- (3) There should not be a limit for maximum size of the marketing infrastructure project.
- (4) The administrative procedures must be uniform across all the schemes by all the Ministries/Departments.
- (5) Single window application system must be put in place with an integrated ICT interface among all implementing agencies.
- (6) There should be a coordination mechanism for dovetailing similar schemes implemented by different Departments within the same Ministry and by different Ministries. A coordination committee may be constituted that should meet every quarter with all the heads/nodal officers of each Ministry/department.
- (7) The budget allocations for all the specified schemes should be permitted for re-appropriation among the ministries/departments with the approval of the coordination committee.
- (8) A panel of professional consulting agencies must be prepared for projectising the investment opportunities. All the Ministries/Departments can make use of them from time to time. A system of adding a new agency or deleting an agency to the panel should be put in place.
- (9) The approval process for all the schemes included in the XI Five Year Plan must be simplified and these should be put on ground latest by June 2007.
- (10) Planning Commission must evaluate the schemes after two years of implementation and take mid course correction. The planning commission must have professional agencies empanelled centrally, and the ministry/department may choose the experts/agencies from among the panel for evaluation or assessment of the schemes.
- (11) The approval process for the projects must be in a seamless ICT interface.

2 Strengthening of Marketing Infrastructure

2.1 Guiding Principles

The model of marketing infrastructure under Indian conditions should consist of the following:

- (1) Direct sourcing from the farmers and limiting the intermediaries to bare minimum.
- (2) Value addition activities such as cleaning, grading, packing, primary processing, and storage should take place nearer to the farm or production center.
- (3) Organization of the farmers into growers' groups/commodity groups/ cooperatives/self help groups/producer companies to ensure the participation of diversely located small and marginal farmers and their linkage with the markets.
- (4) Proactively promote grades and standards through capacity building and infrastructure creation, instead of leaving it to the private retail chains to come up with their own standards and grades, because the grades and standards, as prevalent in other countries, may be disastrous to resource poor Indian farmers.
- (5) Instead of leaving to the retail companies to evolve sourcing models, government should proactively prepare the farmer groups to interact and establish linkage with retailers. The infrastructure for primary handling needs to be created in every village or group of villages in the form of primary value addition and multi-purpose service centres directly in the public domain or through Public Private Partnership. These centres could be managed by cooperatives, SHGs, farmers' clubs and producer groups and linked to wholesale or retail markets.
- (6) Should target for handling at least 50 percent of perishables through uninterrupted cool chains from farmer to the consumer.
- (7) Continuous modernization of existing marketing channels/systems so as to enhance the marketing efficiency and efficiency of handling the food.
- (8) Should introduce professional managerial practices in running the markets and bring efficiency into the system, even by outsourcing the management, if required.
- (9) Should aim at bringing some of the existing markets under professional management through Public Private Partnership.
- (10) Should include quality consciousness among the farmers in handling the produce and for this purpose, capacity building for appropriate grading, and adoption of good agricultural practices and food safety standards would be very critical.

(11) Should promote consumer demand for safe and healthy foods, so that the demand will drive the implementation of food safety measures, which will ultimately enable us to capture global markets. Price incentives can provide demand-pull for quality and safe food.

2.2 Infrastructure and Investment Requirements

- (1) Develop 5000 Rural Primary Markets/Rural Periodic Markets/Rural Haats (out of 21000) at a cost of Rs 25 lakh per market.
- (2) Modernize 2428 principal market yards at a cost of Rs 3 crore each and 5129 sub-yards at a cost of Rs one crore each.
- (3) Encourage setting up of 75 new wholesale markets by the private sector at a cost of up to Rs 10 crore each.
- (4) Set up 35 Terminal Markets at a cost of Rs 50 crores each under PPP mode.
- (5) Set up 1152 Farmers Markets with an investment of Rs 50 lakhs per market to achieve a target of 50 percent of the marketed surplus getting sold directly through these markets.
- (6) Promote and develop 241 identified commodity specific markets for fruits and vegetables at an investment of Rs 20 crores per market.
- (7) Set up and develop 15 specialized flower markets with an investment of Rs 10 crores per market.
- (8) Develop 500 markets for medicinal and aromatic plants with an outlay of Rs one crore per market.
- (9) Set up and develop 50 specialized markets for spices at a cost of Rs 50 lakhs per market.
- (10) Set up 1000 livestock markets with an investment of Rs 20 lakhs per market.
- (11) Promote and set up 50 modern abattoirs under PPP format at a cost of Rs 10 crores per abattoir.
- (12) Promote modern meat retail markets at 1000 locations at a cost of Rs 5 crore per market.
- (13) The storage capacity gap of 35 million tonnes requires an investment of Rs 7687 crores, but part of this goes with other recommendations. Public sector investment proposed is Rs 2000 crores for 6.67 million tonnes of warehousing capacity at the rate of Rs 3000 per tonne. For this purpose, the rural godown scheme implemented during X Plan period should be continued.
- (14) Cool chain infrastructure facility of 45 lakh tonnes capacity may be created at an investment of Rs 15708 crores.

- (15) Provision of Rs 500 crores be made for creating farm road infrastructure in 100 NHM (National Horticulture Mission) clusters.
- (16) For reaching the benefits of commodity futures markets to the farmers, National Electronic Spot Markets should be promoted.
- (17) For facilitating use of insurance products by the farmers, 50000 automated weather stations be set up under PPP format with an investment of Rs 860 crores (500 + 360).
- (18) Create state-of-the-art infrastructure at 15 Centres of Perishable Cargo with an investment of Rs 20 crores per centre.
- (19) An investment of Rs 750 crores be provided for a two-tier Quality and Food Safety Infrastructure.
- (20) For promotion of GAP (Good Agricultural Practices), an investment of Rs 1010 crores be provided which includes Rs 10 crores for Model Farms for India GAP Certification.
- (21) For promoting 5000 farmers' organizations, a sum of Rs 250 crores at a modest cost of Rs 5 lakh per farmers' organization be provided.
- (22) Total investment requirement for all the suggested infrastructure items is Rs 64312 crores, besides Rs 43000 crores for food processing sector, during the XI Five Year Plan.
- (23) Out of Rs 64312 crores of investment requirement, Rs 12000 crores can flow from RIDF, Rs 5000 crores from APMCs or SAMBs, and Rs 30625 from the private sector. Thus central sector outlay is proposed as Rs 16687 crores.

3 Strengthening of Agricultural Marketing Information System Using ICT

- (1) Integrated Website for all agencies of both State and Central Government involved in Agricultural marketing services like APEDA, APMCs, CWC, SWCs, CACP, CCI, DMI, FCI, JCI, KVKs, MPEDA, NAFED, TRIFED, NCDC, NDDB, NHB, SAMBs, and STC.
- (2) Integrating AGMARKNET with State Wide Area network (SWAN) and NICNET.
- (3) Establishment of AGMARKNET Nodes at KVKs and Panchayats with IT infrastructure along with Internet accessibility.
- (4) All agriculture wholesale markets to be the WiMAX based Internet Hubs.
- (5) Computerization of all mandies/APMCs under E-Mandi project undertaken with the existing AGMARKNET Nodes (about 2850 in numbers) as the Phase-II Programme of the MRIN Scheme.
- (6) Development of Agricultural Commoditywise Portals for 300 Commodities and 2000 varieties to facilitate supply-chain (farmgate to international)

management models, and development of marketwise, commoditywise, regionwise, and countrywise marketing intelligence system.

- (7) Dissemination of market information through electronic media, ICT media, telecommunication media and print media.
- (8) Linking all cooperative marketing organizations through provision of computerization and internet facility and putting them on common or interlinked websites.
- (9) E-networking of quality testing laboratories in the country.
- (10) E-linking of rural business hubs or rural primary markets with exporters, supermarkets and retailers.
- (11) Tele-density in rural areas continues to be low; resultantly the access to information to the farmers is constrained. Government has taken number of positive initiatives for knowledge dissemination to the farmers by Kissan Call Centres, AGMARKNET portal, etc. Meaningful gains cannot occur without sufficient facility of telecommunication. Increase in tele-density, as infrastructure development for rural economy should be taken up with a time frame of attaining 90 percent village connectivity in next three years.
- (12) The portal of AGMARKNET should be strengthened in PPP mode and should facilitate as Virtual Market with a window for the farmers to inform about their produce and practices and buyers to seek production/supply of their choice. Such Virtual Market will benefit the Farmers Groups to announce their production profile.

4 Human Resource Development for Agricultural Marketing

- (1) All state Agricultural Universities should initiate degree and diploma courses in argi-marketing and agribusiness, on the pattern of GB Pant University of Agriculture and Technology, Pantnagar. Though the courses will be selfsustaining but basic strengthening of Departments of Agricultural Economics of SAUs and also of concerned division of NIAM should be done during the XI Five Year Plan. The budget requirement would be around Rs 100 crores for the XI Five Year Plan period.
- (2) National Institute of Agricultural Marketing (NIAM) and agricultural economics/agribusiness departments of State Agricultural Universities should be strengthened to increase intake capacities in agri-marketing and agribusiness courses.
- (3) The role of the market as knowledge and information exchange amongst the converging farmers needs to be appreciated and harnessed. There is a need for greater synergy between extension services and market. State Marketing Departments and Boards, APMCs, Krishi Vigyan Kendras (KVKs), Marketing Cooperatives, NGOs and PRIs should pay increasing attention to train the farmers in marketing related skills like quality standards, FAQ norms, terms of contract under contract farming, provisions of various insurance schemes, preparing the produce for the market and primary value addition, and

motivate them to organize themselves in to marketing groups, which could take the form of cooperatives, self help groups or even producers' companies.

- (4) Atleast 100,000 farmers groups should be organized during the XI Five Year Plan for promoting group marketing, based on either individual commodities, or groups of commodities. From each group, atleast one farmer and one woman leader should be provided training for three days on marketing, washing, sorting, grading, packaging and, if needed, on minimal processing of farm products of their concerned location. This work can be taken up by KVKs which need strengthening as recommended elsewhere. But separate budget for this training needs to be provided to KVKs, which works out to Rs 30 crores.
- (5) There is also a need for training/orientation/sensitization of food traders, including small wholesalers, mashakhores, retailers, and hawkers, on new technologies of packaging, sorting, quality maintenance, regulatory framework and related aspects of marketing. a two-day training of around one million traders would cost Rs 100 crores. The trainings can be organized by SAUs, ICAR Institutes, KVKs, State Departments of Agriculture/Agricultural Marketing and NGOs under the overall coordination of NIAM, DMI and MANAGE.
- (6) Each Krishi Vigyan Kendra (KVK) in the country should be provided with a post of senior scientist in agricultural marketing/agribusiness in addition to the existing strength of six scientists. Also, KVKs should be equipped with sufficient funds for a demonstration unit and training programmes for extension workers and farmers group leaders in the field of agribusines and marketing management. The financial requirement for the entire XI Plan period would be Rs 102 crores.
- (7) The KVKs, Directorates of Extension of State Agricultural Universities, and district level agriculture offices should be strengthened by providing a post-harvest technology wing, consisting of scientist, agribusiness professional, technicians and demonstration unit, equipped with market intelligence on specific commodities.
- (8) The grass root awareness campaign should have focus on importance of integration of production with market and value chain and on good agricultural practices for better price realization by farmers.

5 Promotion of Exports/External Trade

- (1) An institutional mechanism for creation of database on incidence of pests and diseases in major production areas of agricultural products for export and identification of pests/disease free areas be put in place through regular survey and surveillance.
- (2) The import quarantine system of the country should be strengthened to mitigate the risk of entrance of undesirable pests and diseases, which do not occur in India but may become a big threat for sustenance of our exports.

- (3) The process of improving our domestic marketing channels through amendments in state APMR Acts and simplification of other marketing regulations should be speeded up.
- (4) In view of the expanding global food industry and the increasing interest of big corporates in procurement/sourcing from India, there is need to promote market aggregators that may take the form of contract farming, corporate aggregator or cooperatives, as is suitable for different regions/products of the country.
- (5) Aggregate market promotion campaigns for our identified thrust products should be launched and APEDA be delegated powers to undertake promotional activities for specific products in specific countries through participation in international trade fairs, buyer-seller meets and other product promotion activities.
- (6) For specified thrust products, cold stores/warehouses in gateways to major markets like Dubai, Singapore, London and Moscow may be created with 50 percent grant from APEDA.
- (7) Some experts should be posted as Agro Export Ambassadors in key target (importing) countries for regularly studying the market dynamics of imports into the targeted country and advise the Government of India and the industry for equipping to increase the market share of Indian agro products in that country.
- (8) NABARD should directly finance the projects/operations in the Agri Export Zones (AEZs) at the concessional rate of interest of 2 to 3 percent. This should include funding for capital investment relating to post-harvest handling, processing, storage and transportation and export/packing credit.
- (9) Under contract farming in AEZs, 50 percent rebate on premium for crop insurance should allowed.
- (10) As in other countries, Government of India should provide reinsurance to the insurers and credit guarantors so that exporters are able to offer products in the international market backed by favourable credit terms.
- (11) We should be fully equipped and active in effectively responding to various TBT notifications within the stipulated period of 60 days so that effective measures are taken by various stakeholders and Ministry of Commerce to avoid the adverse effects of TBTs on the exports of products and services by Indian Trade and Industry.
- (12) The airfreight for agricultural fresh produce meant for export should be brought down by providing appropriate subvention to subsidize airfreight.
- (13) Mandate cargo space in passenger airlines for export of perishables should be provided.
- (14) For promoting the exports of tobacco products, following incentives should be extended and measures taken:

- (i) Enhance entitlement under DEPB on export to tobacco from the present level of 2 percent to 12 percent.
- (ii) Alternatively, to make tobacco exports competitive, incidence of taxes on inputs and all along the value chain should be brought down.
- (iii) Extend the benefit of drawback of Rs 850 per tonne on furnace oil supplied by domestic oil companies to EOU/EPZ/SEZ under deemed export scheme to tobacco exporters.
- (iv) Service rendered abroad by non-residents for Indian tobacco exports should be exempted from service tax in India.
- (v) Export credit to tobacco industry should be provided at 4 percent interest, which is in line with international interest rates. Further, the credit should be made available for development of infrastructure and R&D activities also.
- (vi) Videsh Krishi Upaj Yojana should be extended to tobacco also.
- (vii) Keeping in view the exports of tobacco products, Kakinada and Vishakhapatnam ports should be developed and handling facilities at Chennai, Mumbai and these ports should be strengthened.
- (viii) A transport subsidy of Rs 2 per kg should be allowed for additional shipments made to CIS countries.
- (ix) FDI by International Leaf Merchants to invest in developing infrastructure for tobacco processing in India should be permitted because that would promote exports.
- (x) FDI in SEZs/100 percent EOUs for export of cigarettes should be permitted.
- (xi) Un-manufactured tobacco should be exempted from the purview of VAT at all stages.
- (xii) For improving the brand image of Indian tobacco and tobacco products, trade delegations to major importing countries should be sponsored at regular intervals and publicity be increased through participation in international tobacco exhibitions and advertisements in international magazines.
- (15) The financial outlay proposed for schemes of assistance for development of supply chain infrastructure for the XI Five Year Plan is Rs 921.25 crores. This includes various components of common infrastructure and capital subsidy for export infrastructure.
- (16) Under the scheme for market intelligence and market development, which includes packaging development, a budgetary outlay of Rs 3970.30 crores is proposed.

- (17) A sum of Rs 652 crores is proposed for the scheme for quality development and capacity building during the XI Five Year Plan.
- (18) The estimated outlay proposed for Research and Development is Rs 41.50 crores and for transport assistance scheme is Rs 200 crores.
- (19) Total proposed outlay for financial assistance schemes of APEDA is Rs 5785 crores.
- (20) The proposed outlay for tobacco scheme is Rs 96 crores.

6 Reorientation of Policy Paradigm

- (1) Shift 'agricultural marketing' from the list of state subjects to the concurrent list for speeding up the progress of market reforms and evolving a unified national market.
- (2) Dovetail domestic marketing and price policies with trade policies by redefining the Terms of Reference of Commission for Agricultural Costs and Prices (CACP) to include trade policy related matters, including import duties on agricultural products.
- (3) Avoid knee-jerk decisions in marketing and trade related matters like decisions on wheat imports/exports, ban on exports of pulses, reimposition of stocking limits and under-hike in minimum support prices (MSPs) in some years.
- (4) Redefine 'agriculture to include production, processing, transportation, marketing and trade in food, feed, fibre and other agricultural products, including livestock and fisheries sector products.

CHAPTER 1

INTRODUCTION

1.1 BACKGROUND

As part of the exercise for the preparation of the XI Five Year Plan (2007-12), the Planning Commission of Government of India, constituted 12 Working Groups on different aspects of agricultural and allied sectors. One of the Working Group was on Marketing Infrastructure and Policy Required for Internal and External Trade. This Working Group was constituted vide Order No. M-12043/11/2006-Agri dated 9th June 2006 of the Planning Commission (Agriculture Division) of Government of India.

1.2 TERMS OF REFERENCE OF THE WORKING GROUP

The Terms of Reference (ToR) of the Working Group were as follows:

(A) MARKETING RELATED

- (i) To identify the bottlenecks in the internal agricultural trade and make recommendations for development of agricultural marketing.
- (ii) To assess the size of agricultural markets and supply chain in different crops, and review the working of agricultural markets, wholesale mandis and commodity boards and suggest measures to improve their functioning to safeguard the interests of the farmers, especially small and marginal farmers.
- (iii) To review the present status and the additional requirement of marketing infrastructure facilities for both domestic and export trade at terminal markets, collection centres and village hats including new grading and

packaging systems, warehouses, bulk handling facilities, cold chains, reefer vans etc. in the country within Government, cooperatives and private sector from farm level upwards by the end of the Eleventh Five Year Plan.

- (iv) To assess the financial position of the agricultural produce marketing committees and agricultural marketing boards and assess the facilities provided by them and suggest improvements for efficient functioning of the marketing structures.
- (v) To identify the alternative forms of marketing such as direct marketing, farmers or their associations markets, contract farming, corporate entities, cooperatives etc. and suggest their complementarities with existing marketing structures at collection centers, village hats, market yards, at towns and at wholesale/delivery centers in big cities for the effective functioning in the interest of all stake holders.
- (vi) To study and review the Market Information Services and Dissemination through media and suggest appropriate measures to make these available for the benefit of farmers and consumers.
- (vii) To review use of information technology in agricultural marketing and suggest measures to accelerate its use.
- (viii) To review the existing programmes being implemented by the Government for development of the agricultural marketing infrastructure, the achievements made in the Tenth Plan and the modifications/ additions in the programme required during the Eleventh Five Year Plan;
- (ix) To examine the level of professionalism in Agricultural Marketing System and recommend ways and means for skill upgradation and human resource development, identification of institutions for providing training in agriculture marketing and strengthening such institutions, including existing ones like NIAM, MANAGE etc.

(x) To identify the scope for private sector investment in setting up of infrastructure and suggest the strategies/interventions/policy shifts required by the Central and State Governments to encourage such investments.

(B) EXPORTS RELATED

- (xi) To review the export performance of agricultural commodities including plantation crops and allied products, study the export potential of agricultural products, identify constraints, and suggest measures for improving quality, enhancing competitiveness and efficiency of external trade and make projections for the Eleventh Plan.
- (xii) To evaluate the level of competition, existing regulatory environment and policy related issues for external trade, suggest policy for development of external, indicate plan support for the same keeping in view inter-alia interests of the farmers.
- (xiii) To identify gaps in infrastructure needed for export of agricultural products including specialized infrastructure for perishable products and estimate investment required for infrastructure, processing facilities and the package of incentives for infrastructure development for export promotion.
- (xiv) To make recommendations for creation of trade related data bases to cover the gap in information available to the farmers and other stake holders.

Further, the Working Group was authorized to examine and address issues which are important but are not specifically spelt out in the ToR.

1.3 COMPOSITION OF THE WORKING GROUP

The composition of the Working Group was as under:

(i)	Prof. S.S. Acharya,	Chairman
	Honorary Professor and Former Director,	
	Institute of Development Studies, Jaipur, Rajasthan	
(ii)	Dr. Sukhpal Singh,	Member
	Professor,	
	IIM, Ahmedabad	
(iii)	Dr. B. Bhatttacharya,	Member
	Former Dean,	
	Indian Institute of Foreign Trade	
(iv)	Shri Y.C. Nanda,	Member
	Member,	
	National Commission on Farmers, New Delhi	
(v)	Joint Secretary (Trade),	Member
	Department of Agriculture and Cooperation, New Delhi	
(vi)	Joint Secretary (Plant Protection),	Member
	Department of Agriculture and Cooperation, New Delhi	
(vii)	Joint Secretary (Trade Policy, Agriculture),	Member
	Ministry of Commerce, New Delhi	
(viii)	Joint Secretary,	Member
	Ministry of Textile, New Delhi	
(ix)	Joint Secretary,	Member
	Department of Food Processing Industries, New Delhi	

(x)	Joint Secretary,	Member
	Department of Food and Public Distribution, N. Delhi	
(xi)	Joint Secretary (Fisheries),	Member
	Department of Animal Husbandry,	
	Dairying and Fisheries, Krishi Bhawan, New Delhi	
(xii)	Joint Secretary (Marketing),	Member
	Department of Agriculture and Cooperation,	
	Krishi Bhawan, New Delhi	
(xiii)	Shri S.K. Mitra,	Member
	Executive Director, NABARD,	
	24, NABARD Tower, Rajendar Place, New Delhi – 110008	
(xiv)	Chairman,	Member
	Agricultural and Processed Food Products Export	
	Development Authority (APEDA),	
	NCUI Building, 3, Siri Institutional Area,	
	August Kranti Marg, New Delhi – 110 016	
(xv)	Dr. J.N. Chamber,	Member
	Managing Director, National Horticulture Board,	
	85, Institutional Area, Sector-18, Gurgaon – 122015	
(xvi)	Shri. G.V. Krishna Rau,	Member
	Chairman, Coffee Board,	
	P.B. No. 5366, Bangalore – 560 001	
(xvii)	Shri P.M. Sinha,	Member
	Chairman,	
	Agriculture and Rural Development Committee, FICCI,	
	Federation House, Tansen Marg, New Delhi	

(xviii)	Shri N. Srinivasan,	Member
	Director General,	
	Confederation of Indian Industries (CII),	
	23-26 Institutional Area, Lodhi Road, New Delhi – 110003	
(xix)	Director,	Member
	Institute of Rural Management, Anand	
(xx)	Chairman,	Member
	Forward Market Commission, Mumbai	
(xxi)	Managing Director,	Member
	Central Warehousing Corporation	
(xxii)	Dr. M.N. Reddy,	Member
	Director MANAGE, Hydrabad	
(xxiii)	Shri G.S. Thind,	Member
	Vice President,	
	Rashtriya Kissan Sangthan, Ambala City	
(xxiv)	Managing Director,	Member
	NCDC, New Delhi	
(xxv)	Commissioner and Director of Marketing,	Member
	Department of Marketing,	
	BRKR Bhavan, 1st Floor, 'C' Block,	
	Tank Bund Road, Hyderabad – 500063	
(xxvi)	Mr. Sunil Khairnar,	Member
	Executive Director,	
	Indian Society for Agro. Business Professional,	
	East of Kailash, New Delhi	
(xxvii)	Secretary,	Member
	Punjab Mandi Board, Chandigarh	

(xxviii)	Managing Director,	Member
	Bihar State Agricultural Marketing Board	
	Pant Bhawan, Bailey Road, Patna – 800 001	
(xxix)	Managing Director,	Member
	Maharashtra State Agricultural Marketing Board,	
	R-7, Market Yard, Gultekadi, Pune – 411037	
(xxx)	Shri Hardeep Singh,	Member
	Cargil India Limited	
(xxxi)	Mr. Munish Dayal,	Member
	Managing Director and CEO, Yes Bank Limited	
(xxxii)	Mr. Vijay Sardana,	Member
	Executive Director,	
	Central for International Trade in Agriculture and Agro-	
	based Industries, New Delhi	
(xxxiii)	Mr. P.P.S. Dhillon,	Member
	All India Food Processor Association, New Delhi	
(xxxiv)	Mr. R.G. Aggarwal,	Member
	Group Chairman, Dhanuka Group, New Delhi	
(xxxv)	Mr. Ravinder Chauhan,	Member
	President,	
	Apple Grower Association of India, Shimla	
(xxxvi)	Mr. D.P. Khandelia,	Member
	President, Solvent Extractor's Association of India	
(xxxvii)	Shri Sanjeev Asthana,	Member
	CEO (Agro. Business), Reliance Industries Ltd.,	
	D-185, Okhla Phase I, Delhi – 110020	
(xxxviii)	Mr. Amol Patil,	Member
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	Secretary, Orange Grower Association of India	
(xxxix)	Smt. Rugmini Parmar,	Member
	Director, Plan Finance-II Division,	
	Department of Expenditure, New Delhi	
(xl)	Adviser (Agriculture),	Member
	Planning Commission	
(xli)	Shri A. Bhatnagar,	Member Secretary
~ /	Director General.	, ,

National Institute of Agricultural Marketing, Jaipur

The Working Group was authorized by the Planning Commission to co-opt any other official/non-official Expert/representative of any organization as members, if required.

Shri Surinder Singh, Directore (Agriculture Division) of the Planning Commission was designated as Nodal Officer for the Working Group.

1.4 CONSTITUTION OF SUB-GROUPS

The Working Group, in its first meeting held at Yojana Bhawan, New Delhi, on June 25, 2006, constituted following four Sub-Groups to look into specified terms of references of each Sub-Group.

1.4.1 Sub-Group I: Marketing System, Organizations and Institutions

Composition of Sub-Group I

- (i) Dr Sukhpal Singh, Professor, IIMA (Chair)
- (ii) Joint Secretary (Food and PDS), DFPD
- (iii) Joint Secretary (Fisheries), DAH
- (iv) Joint Secretary (Marketing), DAC
- (v) Shri G S Thind, VP, RKS Ambala
- (vi) Dr J. N. Chamber, MD, NHB
- (vii) Dr G. V. Krishna Rau, Chairman, Coffee Board
- (viii) Secretary, Punjab Mandi Board
- (ix) Shri D. P. Khandelia, President, Solvent Extractor's Association of India
- (x) Shri P.K. Agarwal, Former Joint Secretary (Matg.), DAC, GOI (Co-Chair)
- (xi) Mr Lallan Rai, DMI, Faridabad
- (xii) Joint Secretary, PFA, Ministry of Health

Terms of Reference (ToR) of Sub-Group I

- 1 To identify the bottlenecks in the internal agricultural trade and make recommendations for development of agricultural marketing.
- 2 To assess the size of agricultural markets and supply chain in different crops, and review the working of agricultural markets, wholesale mandis and commodity boards and suggest measures to improve their functioning to safeguard the interests of the farmers, especially small and marginal farmers.
- 3 To assess the financial position of the agricultural produce marketing committees and agricultural marketing boards and assess the facilities

provided by them and suggest improvements for efficient functioning of the marketing structures.

- 4 To identify the alternative forms of marketing such as direct marketing, farmers or their associations markets, contract farming, corporate entities, co-operatives etc and suggest their complementarities with existing marketing structures at collection centers, village hats, market yards, at towns and at wholesale/delivery centers in big cities for the effective functioning in the interest of all stakeholders.
- 5 To review the regulatory framework and progress of reforms in Agricultural Marketing (ECA, State APM Acts, Integrated Food Law, etc.) and to suggest future direction/action during the XI Five Year Plan.
- 6 To review the status of development of Bio-fuel crops and the future prospects/direction during the XI Five Year Plan.

1.4.2 Sub-Group II: Agricultural Marketing Infrastructure

Composition of Sub-Group II

- (i) Dr. W.R. Reddy, Director (Marketing), DoAC, MoA (Convenor)
- (ii) Shri Y.C. Nanda, Member, NCF
- (iii) Joint Secretary (Plant Protection), DAC
- (iv) Joint Secretary, Food Processing Industries
- (v) Shri S. K. Mitra, Executive Director, NABARD
- (vi) Shri P. M. Sinha, Chairman, Ag and RD Committee, FICCI (Chair)
- (vii) Shri N. Srinivisan, DG, CII
- (viii) MD, CWC
- (ix) MD, NCDC
- (x) Mr. R. P. S. Dhillon, All India Food Processor Association
- (xi) Shri R. G. Agarwal, Group Chairman, Dhanuka Group

- (xii) Smt. Rugmini Parmar, Director, Plan Finance–II, Department of Expenditure
- (xiii) Dr M. S. Jairath, Director, NIAM, Jaipur
- (xiv) Shri. Har Prasad, Dy. AMA, DMI, Faridabad
- (xv) Shri. Narayanswamy, SMDO, DMI, Faridabad
- (xvi) Shri B. Viswanathan, Reliance Agri-Business

Terms of Reference (ToR) of Sub-Group II

- 1 To review the present status and the additional requirement of marketing infrastructure facilities for both domestic and export trade at terminal markets, collection centres and village hats including new grading and packaging systems, warehouses, bulk handling facilities, cold chains, reefer vans etc in the country within Government, cooperatives and private sector from farm level upwards by the end of the Eleventh Five Year Plan.
- 2 To review the existing programmes being implemented by the Government for development of the agricultural marketing infrastructure, the achievements made in the Tenth Plan and the modifications/ additions in the programme required during the Eleventh Five Year Plan.
- 3 To identify the scope for private sector investment in setting up of infrastructure and suggest the strategies/interventions/policy shifts required by the Central and State Governments to encourage such investments.
- 4 To review the status of agro and food processing in the country, and suggest measures for creating adequate processing infrastructure during the XI Five Year Plan.
- 5 To review the current status of Public Private Partnership (PPP) in agricultural marketing and suggest measures for upscaling these.

6 To review current status of quality control and Food Safety Infrastructure and suggest measures for its developments.

1.4.3 Sub-Group III: MIS, IT and HRD in Agricultural Marketing

Composition of Sub-Group III

- (i) Director, IRMA
- (ii) Chairman, FMC
- (iii) Dr. M. Moni, Dy. Director General, NIC (Chair)
- (iv) Dr M. N. Reddy, Director, MANAGE
- (v) MD, Maharashtra State Agricultural Marketing Board
- (vi) Commissioner & Director of Marketing, Andhra Pradesh, Hyderabad(Co-Chair)
- (vii) Mr. Munish Dayal, MD and CEO, Yes Bank
- (viii) MD, Bihar SAMB
- (ix) Mr. Ravinder Chauhan, President, Apple Growers Association of India
- (x) Sri. P.K. Suri, Technical Director, NIC, Convenor
- (xi) NABARD
- (xii) Dr. B.K. Sikka, GB Pant University, Pant Nagar
- (xiii) Dr. Holland of Kamyab, Jaipur
- (xiv) Dr. S.P. Singh, Secretary, Agi-Clinics & Training Institute, Varanasi,
- (xv) Dr. Vijay Sardana, CITA, New Delhi
- (xvi) Shri. Sunil Kumar, Deputy General Manager, APEDA
- (xvii) Shri Sunil Khairnar, Executive Director, ISABP

Terms of Reference (ToR) of Sub-Group III

- 1 To study and review the Market Information Services and Dissemination through media and suggest appropriate measures to make these available for the benefit of farmers and consumers.
- 2 To review use of information technology in agricultural marketing and suggest measures to accelerate its use.

- 3 To examine the level of professionalism in Agricultural Marketing System and recommend ways and means for skill upgradation and human resource development, identification of institutions for providing training in agriculture marketing and strengthening such institutions, including existing ones like NIAM, MANAGE etc.
- 4 To review the futures trading in agricultural commodities and suggest ways for making futures markets farmer-friendly.

1.4.4 Sub-Group IV: Agricultural Exports

Composition of Sub-Group

- (i) Dr B. Bhattacharya, Former Dean, IIFT (Chair)
- (ii) Joint Secretary (Trade), DAC
- (iii) Joint Secretary (Trade Policy Agriculture), Ministry of Commerce
- (iv) Joint Secretary, Ministry of Textiles
- (v) Chairman, APEDA (Co-Chair)
- (vi) Shri Hardeep Singh, Cargil India Ltd.
- (vii) Mr Vijay Sardana, ED, CITA
- (viii) Mr. Sunil Khairnar, ED, Indian Society for Agrobusiness Professionals
- (ix) Mr. Sanjeev Asthana, CEO (Ag. Business), RIL
- (x) Mr. Amol Patil, Secretary, Orange Growers Association of India
- (xi) Sridhar, Vice President, YES BANK
- (xii) Dr Ramesh Chand, NCAP
- (xiii) National Enquiry Point for SPS (FAD)
- (xiv) National Enquiry Point for TBT (BIS)
- (xv) Sh. Ashish Bahuguna, Joint Secretary, Plant Protection

Terms of Reference (ToR) of Sub-Group IV

1 To review the export performance of agricultural commodities including plantation crops and allied products, study the export potential of agricultural products, identify constraints, and suggest measures for improving quality, enhancing competitiveness and efficiency of external trade and make projections for the Eleventh Plan.

- 2 To evaluate the level of competition, existing regulatory environment and policy related issues for external trade, suggest policy for development of external trade, indicate plan support for the same keeping in view interalia interests of the farmers.
- 3 To identify gaps in infrastructure needed for export of agricultural products including specialized infrastructure for perishable products and estimate investment required for infrastructure, processing facilities and the package of incentives for infrastructure development for export promotion.
- 4 To make recommendations for creation of trade related data bases to cover the gap in information available to the farmers and other stake holders.
- To make recommendation for implementation of Sanitary and Phyto-Sanitary, HACCP and other requirements for enhancing Indian Agriculture Exports in coordination with Department of Agriculture.

1.5 METHODOLOGY ADOPTED BY THE WORKING GROUP

The Working Group was authorized by the Planning Commission to devise its own procedures for conducting its business including its meetings. The Working Group accordingly adopted the following methodology.

 The Working Group held its first formal meeting on 25th June 2006 at Yojana Bhawan, New Delhi. In this meeting, the Group had the benefit of presence of Prof. Abhijit Sen, Member (Agriculture) of the Planning Commission. Prof. Sen advised the Group on the areas to be focussed upon and presented the expectations of the Planning Commission from this Working Group. In this meeting, a comprehensive presentation on the current status of marketing system and relevant issues related to the ToR of the Group was made by Shri Anurag Bhatnagar, Director General, NIAM (and Member-Secretary of the Working Group). The members of the Working Group shared their views on the approach to the marketing system improvements during the XI Five Year Plan. The ToR of the Working Group were reviewed and some of these were elaborated and some additions were made. Finally, four Sub-Groups were constituted by co-opting some Experts/Senior Officers and ToR for each Sub-Group were specified.

- (ii) All the Sub-Groups formally met four to five times and held intensive discussions. These apart, several government reports, secondary data and other documents were reviewed by the Chairman/convenors, Member-Secretaries and other officers of concerned Ministries, Departments or organizations for providing inputs to the Sub-Groups. The members of the Group also sent/provided notes/inputs/views to the Sub-Groups, which were of great help in preparing the reports and recommendations of the Sub-Groups. Each Sub-Group also elicited feed back and opinions on the terms of reference from all State Governments/State Mandi Boards, Research organizations and related departments of Government of India. The Sub-Groups also obtained views of various Boards and other such organizations related to agricultural marketing.
- (iii) The progress of the working of each Sub-Group was continuously monitored by the secretariat of the Working Group set up under the leadership of Shri Anurag Bhatnagar, DG, NIAM and actively supported by Dr M.S. Jairath, Director, NIAM.
- (iv) When the Sub-Groups were at a very advanced stage of finalization of their reports and recommendations, another full meeting of the Working Group was held on 4th November, 2006 at the National Institute of

Agricultural Marketing, Jaipur. In this meeting, apart from the members of the Working Group and co-opted members of the Sub-Groups, the faculty members of NIAM were also present and provided their inputs. The meeting was structured into six sessions, including four technical sessions. One technical session was exclusively earmarked for one Sub-Group, in which Chairman/Member Secretary/convenor of the Sub-Group made comprehensive presentation of the Sub-Group Report and recommendations. This was followed by open discussion, additional inputs and suggestions. At the end of each session Sub-Group leaders were requested to incorporate the suggestions before finalizing their respective reports.

- (v) This was followed by participation in an interaction meeting of Chairman and Member Secretaries of all the Working Groups on Agriculture and Allied Sectors, organized by the Planning Commission on 27th November, 2006 at Yojana Bhawan, New Delhi. In this meeting, Shri Anurag Bhatnagar, DG, NIAM (and Member-Secretary of the Working Group) made a presentation on the progress of the Working Group, emerging issues and provisional recommendations related to the domestic marketing system and external trade. The feedback received during the meeting was helpful to the Working Group in finalizing its report and recommendations.
- (vi) Reports of all the Sub-Groups were received by the first week of December 2006. These Sub-Group reports were thoroughly reviewed and used to prepare the final report of the Working Group.

1.6 STRUCTURE OF THE REPORT

The report is presented in eight chapters. The first chapter includes composition and ToR of the Working Group, constitution of four Sub-Groups and their ToRs, and the methodology adopted by the Working Group in finalization of its report and recommendations. The existing agricultural marketing system is reviewed and analyzed in the second chapter. It includes existing marketing channels, farmers markets, cooperative marketing, farmers organizations in marketing, contract farming, main constraints and emerging suggestions for the XI Five Year Plan. The current status of agricultural marketing infrastructure in the country is analyzed and presented in the third chapter. Chapter 4 presents a critical review of ongoing schemes of agricultural marketing infrastructure and makes suggestions for improvements in the implementation procedures of these schemes. Projections of investment requirements for the XI Five Year Plan are discussed in the fifth chapter. It includes rural primary markets, wholesale and retail markets, terminal markets, commodity specific markets, slaughter houses, storage and cold storage infrastructure, farm roads, guality control and food safety infrastructure and promotion of farmers organizations for group marketing. This chapter also presents possible sources of funding and other measures necessary to create an enabling environment for attracting private investment. Sixth chapter is devoted to market information system and human resource development. The issues relating to external trade are discussed in the seventh chapter. This chapter covers export performance, export potential during the XI Five Year Plan, constraints affecting export performance, policy related issues, gaps in infrastructure and suggestions for XI Five Year Plan. The recommendations of the Working Group for the XI Five Year Plan are summarized in the last chapter.

CHAPTER 2

AGRICULTURAL MARKETING SYSTEM

2.1 INTRODUCTION

Agricultural marketing system, though defined in varied ways, but for the purpose of this report, is defined in broadest terms, as physical and institutional set up to perform all activities involved in the flow of products and services from the point of initial agricultural production until they are in the hands of ultimate consumers. This includes assembling, handling, storage, transport, processing, wholesaling, retailing and export of agricultural commodities as well as accompanying supporting services such as market information, establishment of grades and standards, commodity trade, financing and price risk management and the institutions involved in performing the above functions.

Current agricultural marketing system in the country is the outcome of several years of Government intervention. The system has undergone several changes during the last 50 years owing to the increased marketed surplus; increase in urbanization and income levels and consequent changes in the pattern of demand for marketing services; increase in linkages with distant and overseas markets; and changes in the form and degree of government intervention. There are three important dimensions of an agricultural marketing system. These are market structure, conduct and performance. Market structure determines the market conduct and performance. The structural characteristics govern the behaviour of marketing firms. The market structure has never remained static but kept on changing with the changing environment. Structure of agricultural produce markets varies from commodity to commodity and has been influenced by the intervention of the government. An important characteristic of agricultural produce markets in India has been that private trade has continued to dominate the market. With the large quantities required to be handled by the private trade,

the size and structure of markets over time have considerably expanded. Around two million wholesalers and five million retailers handle the trade in food grains. Apart from traders, processors also play an important role as they also enter in the market as bulk buyers and sellers.

Agricultural development continues to remain the most important objective of Indian planning and policy. The experience of agricultural development in India has shown that the existing systems of delivery of agricultural inputs and marketing of agricultural output have not been efficient in reaching the benefits of technology to all the sections of farmers. The timely, quality and cost effective delivery of adequate inputs still remains a dream despite the marketing attempts of the corporate sector and the developmental programmes of the state. Also, the farmers are not able to sell their surplus produce remuneratively. There is plenty of distress sales among farmers both in agriculturally developed as well as backward regions. There are temporal and spatial variations in the markets and the producers' share in consumers' rupee has not been satisfactory, except for a few commodities. In fact, in some commodities like potato in some regions in India, producers end up making net losses at the same time when traders make substantial profits from the same crop. However, it needs to be recognized that producers' relative share in the final price of a product certainly goes down with the increase in the number of value-adding stages, and therefore, cannot be used as an indicator of a market's efficiency or inefficiency. Nevertheless, the other aspects of the market performance like absolute share of the producer in terms of remunerability, fluctuations in prices across seasons, large spatial price differences and lack of proper market outlets itself, are the issues which have become increasingly crucial in the present context. There are structural weaknesses of agricultural markets like unorganized suppliers as against organized buyers, weak holding capacity of the producers and the perishable nature of the produce in the absence of any storage infrastructure. In the presence of these characteristics of the market, the rural producers cannot simply be left to fend for themselves so far as marketing of their produce is concerned. And if the marketing system does not assure good returns to producers, not much can be achieved in the field of product quality and delivery which are critical for processing and manufacturing sectors. In the environment

of liberalization and globalisation, the role of the state in agricultural marketing and input supply is being reduced, and an increasing space is being provided to the private sector to bring about better marketing efficiency in input and output markets. On the other hand, processors and/or marketers face problems in obtaining timely, cost effective, and adequate supply of quality raw materials.

Agriculture in India still engages about 58 percent of the work force and contributes about a quarter of the GDP. A very large majority of the farmers/cultivators belongs to the category of small and marginal holders. The number and proportion of such holdings have been growing over time. They constituted 68 percent of the total operational holdings in 1971-72 but their proportion increased to 80 percent in 1995-96. The area cultivated by them has grown from 24.01 percent of the total in 1971-72 to 34.3 percent in 1991-92. On the other hand, the number of farms in the largest category declined and the average size of the largest category was falling. The average size of operational holding has been declining since the 1960s. However, a redeeming feature is that small farmers (including landless) have higher livestock ownership (60-80 % of all livestock population) including cross-bred cattle. Dairying accounts for more than 50 percent of the household income of the landless and 30 percent of the marginal and small landholders.

Small farms produce 41 percent of India's total grain (49% of rice, 40% of wheat, 29% of coarse cereals and 27% of pulses), and over half of total fruits and vegetables despite being resource constrained. Their contribution to incremental wheat and rice production during 1971-1991 was even higher (62% and 48% respectively). The marginal holdings have higher cropping intensity compared with that of the small, medium and large farmers, mainly owing to higher irrigated area as percentage of net sown area. The small and marginal farmers are certainly going to stay for long time in India though they are going to face a number of challenges. Therefore, what happens to small and marginal farmers has implications for the entire economy and people's livelihoods. But, they can adequately respond to these challenges only if there is efficient marketing system for handling their small surpluses. Otherwise, they will only be losers in the process of globalization and liberalization. The viability of the small

holdings is an important issue and promoting agricultural diversification towards high value crops through an efficient marketing system is argued to be one of the means through which this can be achieved.

2.2 MARKETING CHANNELS

Agricultural commodities move in the marketing chain through different channels. The marketing channels are distinguished from each other on the basis of market functionaries involved in carrying the produce from the farmers to the ultimate consumers. The length of the marketing channel depend on the size of market, nature of the commodity and the pattern of demand at the consumer level. The marketing channels for agricultural commodities in general can be divided into four broad groups as:

- (i) Direct to consumer;
- (ii) Through wholesalers and retailers;
- (iii) Through public agencies or cooperatives; and
- (iv) Through processors.

Although the quantities moving in these channels vary with commodity and from state to state, but general features of these channels are as follows:

- (i) The proportion of marketed surplus going directly from the farmers to consumers continue to be small (around one or two per cent) and has decreased over the years due to the increase in marketed surplus, shifting of processing activities from consumer to the processors and increase in the demand for processed, packed and branded products. As the price received by the farmer in this channel is higher (both in absolute term and as a proportion of consumer's price) than others, government is encouraging direct marketing by the farmers through such schemes as Apni Mandi, Rythu Bazar, etc.
- (ii) The private sector handles around 80 percent of the marketed surplus of agricultural products. The quantity of agricultural products handled by

the government agencies has been about 10 per cent of the total value of marketed surplus. Further, around 10 per cent marketed surplus was handled by the producers or consumers cooperatives.

- (iii) The main functionaries in the marketing channel for agricultural commodities include village traders, primary and secondary wholesalers, commission agents, processors and retailers including vendors. Public agencies, farmers' cooperatives and consumers' organisations also perform many marketing functions.
- (iv) Marketing channels for various cereals in India are more or less similar except for rice where processing is an essential activity.
- (v) Government intervention in purchase of agricultural commodities under minimum support price programme, procurement of foodgrains, market intervention scheme (MIS), monopoly purchase, open market purchases of commodities by NAFED, CCI, JCI and state oilseed federations, have been in existence for many years. The quantity of commodities purchased by public agencies depended on the objectives of the intervention. The entry of public and cooperative agencies altered the existing marketing channels and also their importance in terms of quantity marketed through them. The basic objective of entry of these agencies is to safeguard the interest of producer-farmers along side providing food security to consumers through operating a public distribution system.
- (vi) With the intervention in the purchase and distribution of foodgrains (especially rice and wheat), government purchase agency (Food Corporation of India) entered as an important market functionary in the trade of cereals. Fair price shops also came as retail outlets for distribution of cereals to targeted sections of population. Cooperatives have also assumed importance in the marketing channel with the encouragement to producers or consumers cooperatives. In the case of sugarcane, cooperative sugar factories play a dominant role from the point of view of quantity of sugarcane handled. Cotton Corporation of India and Jute Corporation of India along with the state level cooperative

federations, are now the important buyers of fibre crop products from farmers.

2.3 DIRECT MARKETING - FARMERS MARKETS

Direct marketing by farmers is being encouraged as an innovative channel. Some examples of these channels are Apni Mandi, Rythu Bazars, and Uzhavar Sandies. These channels are mostly adopted in sales transactions of agricultural commodities like fruits, vegetables and flowers which are highly perishable. In this channel, the produce move quickly from farmers to consumers due to lack of middlemen. If farmers directly sell their produce to the consumers, it not only saves losses but also increases farmers' share in the price paid by the consumer.

Farmers' Markets were introduced with a view to eliminate the middlemen and arrange facilities for the farmers to sell their produce directly to the consumers at reasonable rates fixed every day. On account of the scheme, both the farmers and the consumers are benefited.

2.3.1 Apni Mandies in Punjab and Haryana

Punjab's and Haryana's *Apni Mandi* (Our Market), established in the mid-1990s, were the first ones directly linking vegetable producers and consumers. Farmerproducers bring the produce for sale directly to the buyers or consumers. The Agricultural Produce Market Committee of the area where Apni mandi is located provides all necessary facilities like space, water, shed, counters and weighing balances

2.3.2 Rythu Bazars in Andhra Pradesh

The Rythu bazars were initiated by the Government of Andhra Pradesh on January 26, 1999. The number of Rythu Bazars have increased from 49 to 102 and now cover nearly 40,000 farmers of 2,800 villages with in a span of nine months in all the district head-quaters and important cities in Andra Pradesh.

Rythu Bazars are located on government lands identified by the District Collectors. The locations are decided in such a way as are convenient to both for the farmers and consumers. The criteria for opening of new Rythu Bazars are the availability of atleast one acre of land in strategic location, and identification of 250 vegetable growing farmers including 10 groups. The price fixation in Rythu Bazars is through a committee of farmers and the Estate Officer. Adequate care is taken to fix the prices realistically. If the prices in Rythu Bazars are higher than the local market rate, there is no incentive to consumers. And if the prices fixed are lower than the wholesale market rates, there is no incentives to farmers. The prices in Rythu Bazars are generally 25 percent above the wholesale rates and 25 percent less than the local retail price. The maintenance expenditure of Rythu bazaars is being met from the financial sources of Agricultural Produce Market Committees.

2.3.3 Uzhavar Santhai in Tamil Nadu

Within a year, 95 Farmers' Markets were established, and reached a total of 102 by the 31st March 2001. However, with assembly elections in October 2001 and a change in government, no more Farmers' Markets were opened, and eighteen have been closed because of low efficiency. Reasons for this include a daily vegetable inflow of less than 200 kg, low number of customers and low number of participating farmers. Farmers' Markets are under the administrative control of the State's sixteen Agricultural Marketing. The Committees, which in turn are part of the Department of Agricultural Marketing. The Committees are also responsible for the administration of Regulated Markets, where farmers sell directly to traders without the intermediary of commission agents and under a tender system supervised by Committee officials. Regulated markets also offer storage facilities to producers, to whom an advance is paid once the produce is deposited. Regulated markets deal with a predetermined list of commodities and especially food grains and other non-perishable items. With regard to the Farmers' Markets, the Committees are responsible for their overall administration.

All Farmers' Markets open at 6.30 in the morning, and usually close at 2.00 in the afternoon, although marketing committee staff remains until 5PM to complete all the paperwork. A notable exception is Maharaja Nagar Farmers' Market in

Tirunelveli, which is open until 7.00 in the evening. This allows farmers to bring in their produce twice a day, and has therefore attracted larger farmers, who would otherwise find it difficult to dispose of higher volumes of produce in Farmers' Markets.

The price of the vegetables is fixed each day by a committee including Marketing Committee officials and farmers' representatives. Committee members collect prices in the central and retail markets before 3.00 in the morning, and by 6.30 the maximum selling prices in the Farmers' Market are fixed at 15 to 20 percent over the night sale price at the central market, and 20 percent below the price in the retail markets – whichever is higher. Farmers are not permitted to sell above the maximum price, although they are allowed to sell at a lower price. Prices are displayed on a blackboard at each stall, and staff constantly monitor that they are respected. Farmers also get good quality seeds and other inputs in the market itself.

2.3.4 Krushak Bazaars in Orissa

Government of Orissa established 40 Krushak Bazaars in the state in 2000-01. Government provides incentives for the purpose which include one or two acres of government land with all the infrastructure in the identified urban/semi urban area. The farmers are identified and provided with photo identity cards to operate in the market. The identified farmers are supplied with required inputs for vegetable production. In addition, storage and public utility facilities are also provided. The price in the Krushak Bazaar is determined taking whole sale price and retail market price of different products in the respective markets. The comparison of prices in wholesale, Krushak Bazaar and retail market indicate that the prices were 4 to 41 percent higher in Krushak Bazaar than the wholesale market price. However in case of retail market, the prices were lower by 10 to 32 percent in the Krushak Bazaar. The price fixation process rarely involved farmers in the decision making. The participating farmers found price fixation faulty not accounting for quality differences, inappropriate locations of market and lack of proper infrastructure. Beside, these markets are being dominated by nonfarmers.

2.3.5 Hadaspar Vegetable Market in Pune

Hadaspar vegetable market is a model market for direct marketing of vegetables in Pune city. This sub-market yard situated 9 kms away from Pune city belongs to the Pune Municipal Corporation and fee for using the space in the market is collected by the Municipal Corporation from the farmers. This is one of the ideal markets in the country for marketing of vegetables. In this market, there are no commission agents/middlemen. The market has modern weighing machines for weighing the products. Buyers purchase vegetables in lots of 100 kgs or 100 numbers. The produce is weighed in the presence of licensed weighmen of the Market Committee and sale bill is prepared. The purchasers make payment of the value of produce directly to the farmer. The purchaser is allowed to leave the market place along with the produce after showing the sale bill at the gate of the market. Payment is made in cash. Disputes, if any, arising between buyers and sellers are settled by the supervisor of the Market Committee after calling the concerned parties. The Market Committee collects one per cent sale proceeds as market fee for the services and facilities provided by the Committee to the farmer-sellers and buyers.

A common problem faced by the direct market systems is the infiltration of the bazaars by middlemen in the guise of farmers. Though identity cards have been introduced and there are periodical checks, the problem still persists in many bazaars.

2.4 COPERATIVE MARKETING

A marketing organization is more than a sales agency, and typically performs an array of functions involved in reaching a product from the producing point to the consuming point, whether raw, semi-processed, or processed. This process of moving product from farm gate to the consumer is one of adding value in terms of time, place and/or form utilities. Cooperatives have been argued to be one of the best systems in agricultural produce marketing and processing especially in situations of market failure which obtain very often in agricultural markets and

that too in agrarian economies. Cooperatives could also be organized when producer members would like to corner a larger part of the returns associated with the value adding process, through better coordination of supply with demand. While cooperatives perform a variety of marketing functions, they are no different from what must be performed by other types of business organizations. They are not unique in the functions they perform, but in the manner and philosophy in which they are performed.

The cooperatives have been successful in processing of sugar, paddy, milk and cotton. There are 203 sugar cooperatives which produce nearly 55 percent of the total sugar production in India with the remaining being produced by private (197) and public sector mills. Similarly, more than 87,000 dairy cooperatives federated into 187 district level cooperatives and 27 state level federations working with 87 lakh milk producers have been important players in the milk marketing business. There are 173 cooperative spinning mills accounting for 22 percent of yarn and fabric production, and 431 ginning and pressing cooperatives accounting for 12 percent of all units and 21 percent and 18 percent of all gins and presses. Besides, there are 13, 000 fisheries co-operatives in India (The ET Knowledge Series - Rural Economy 2002-2003). The main reasons for the success of this segment of the processing sector have been the focus on value addition and, therefore, high returns to producing members, functional vertical integration, high participation of members, and professional management and leadership. The number of foodgrains, fruits/vegetables and plantation crops processing cooperatives is shown in Table 2.1.

2.4.1 Sugar Cooperatives

Sugar is India's second largest agro-processing industry, with around 400 operating mills as of March 2005. The 203 cooperatives are a dominant component of the industry, accounting for over 56% of the total capacity of around 19 mt per annum of sugar. Of the 203 cooperatives, nearly 83 (or 41% of total cooperatives) are concentrated in Maharashtra, followed by UP with 28 mills. Of the 197 non-cooperative and/or private sugar mills, nearly 78 (or 40%) are located in UP, followed by TN, AP, and Karnataka (Table 2.2).

Table 2.1

Status of Other Agri-Processing Cooperatives in India (1999-2000 and 2000-2001)

Particulars	2000-2001	1999-2000
No. of Food Grains Processing Units	690	684
No. of Rice Mills	597	597
No. of Dal Mills	76	76
Others (Flour Mills, Barley, Husk, Maize, Cattle, Feed)	17	13
Number of Oil Mills (Installed)	140	139
Fruits and Vegetable Processing Units	127	127
Plantation Crops (Tea)	23	23
Coffee	6	6
Cashew	3	3
Rubber	27	26
Сосоа	6	6
Copra	6	6
Isabgol	1	1
Strawboard	1	1

Source: www.indiastat.com/india/ShowData.asp?secid=333002&ptid=104626&level=4 accessed on october 5, 2006

Table 2.2

State-wise Distribution of Cooperative and Other Sugar Mills 2005

States	Cooper	Cooperatives		Others		Total	
	Number of	Installed	Number of	Installed	Number of	Installed	
	factories	capacity	Factories	capacity	Factories	Capacity	
AP	8	192	26	716	34	908	
Gujarat	17	1,071	0	0	17	1,071	
Haryana	10	353	3	198	13	551	
Karnataka	16	551	21	908	37	1,459	
Maharashtra	82	6,468	20	511	102	6,978	
TN	14	546	20	979	34	1,524	
UP	28	784	78	3,753	106	4,537	
Uttaranchal	4	133	6	279	10	412	
Punjab	12	405	8	279	20	684	
Others	12	182	15	678	27	861	
Total	203	10,684	197	8,302	400	18,985	

The cooperative is defined by a fixed command area. This is the area from which it is allowed to collect and process sugarcane. The farmers who own land in this area are its potential members. In the cooperative sector, each cooperative sugar mill is jointly owned by the growers in the local area and owns crushing and processing facilities that convert raw sugarcane, collected from its growermembers, into finished sugar. This sugar is sold on the market, and the resulting revenues, net of collection and processing costs, are distributed among the growers. In principle, these revenues are supposed to be paid out to the growers as a uniform price for the cane so that each member's share is proportional to the amount of sugarcane delivered. However, in practice, members who are powerful within the cooperative are reported to capture more than their fair share of the revenues.

The cooperative sugar mills sector, especially in Maharashtra and Gujarat, has been set up with the encouragement and support of the state government since the 1950s. An important reason for the setting up of cooperatives was the local buying power of a sugar-processing mill with respect to sugarcane growers. This buying power stems from economies of scale in collection and refining and the need to crush sugarcane very soon after it is harvested and would not exploit this monopsony (single buyer) power. This expectation, combined with the desire to avoid possible inefficiencies stemming from competition between different sugar mills, motivated the creation of the zone-bandi (closure) system. In this system, each cooperative is effectively given monopsony power (by making it illegal for cooperative sugar mills to buy cane outside) over its command area, which covers a fixed radius around the factory. As things stand now, there is little scope for competition – factories are usually spatially separated in such a manner that most growers would incur substantial transport costs in delivering outside their own command area. Entry of new cooperatives is tightly regulated by the government.

The sugar manufacturing industry is highly fragmented with none of the players having a market share greater than 3 percent. Although cooperatives account for around 43 percent of the total production in the sugar industry, their share has gradually declined (Table 2.3).

Table 2.3

Year	2000	2001	2002	2003	2004	2005
Number of Factories	423	436	434	453	422	400
Cooperatives	251	259	250	269	235	203
Others	172	177	184	184	187	197
Installed capacity(thousand tonnes)	16,181	16,820	17,685	17,498	18,802	18,985
Cooperatives	9,069	9,286	9,985	10,182	10,694	10,684
Others	7,112	7,535	7,699	7,316	8,109	8,302
Production (thousand tonnes)	18,200	18,511	18,528	20,145	13,546	12,691
Cooperatives	10,369	10,499	9,408	10,164	6,015	4,653
Others	7,831	8,012	9,120	9,981	7,531	8,038
Capacity Utilization (%)	112.5	110.1	104.8	115.1	72.0	66.8
Cooperatives	114.3	113.1	94.2	99.8	56.2	43.6
Others	110.1	106.3	118.5	136.4	92.9	96.8

Number of Sugar Mills, Installed Capacity and Production of Sugar in India

2.4.2 Dairy Cooperatives

The Kaira District Cooperative Milk union limited, popularly known as Amul, was the first producer owned dairy organized in 1946. This milk union has proved that dairying can be best conducted if production, processing and marketing are operated by the farmers themselves. The dairy cooperatives are organized with a three-tier structure. This structure evolved by the National Dairy Development Board is known as the 'Anand pattern'. The system enables the producers to get the benefits of the efficiencies of large scale business through professional management, modern techniques and marketing. It has direct impact on the milk production of the small farmers. It is widely experienced that the milk cooperatives, both at the district level owing to modern processing plant and at the village level supplying milk to district units for processing, can be run profitably with the help of professional management. Th status of dairy cooperatives is shown in Table 2.4 and 2.5.

The total number of dairy cooperatives in India is 103305. Out of which 96206 are under the Anand pattern. The government has 13.8 percent participation in the share capital. During the year 2004-05, cooperative milk procurement crossed 20 million tones per day, a 15 percent increase over the previous year. However enhanced milk procurement was not matched by liquid milk marketing which rose by only about 5 percent. Over the years NDDB has invested about

19,600 million in building cooperative capacities in various states. Cooperatives have developed their respective brands - Amul, Nandani, Avin, Vijaya, Milma, Parag, Saras, Verka, Vita, Sudha among them and expanded their business with turnover reaching an impressive Rs 110,000 million. In recent years the largest co-operative brand Amul, has moved beyond National milk products marketing by aggressively entering local liquid milk markets, the core business of most other cooperatives.

Table 2.4

State-wise Performance of Primary Dairy Cooperatives (2000-01)

State/UTs	Number of Membership		Milk Procured	Total Sales	
	Contraction		(value)	Guics	
Andhra Pradesh	5167	734000	1260.00	1260.00	
Arunachal Pradesh	12	1000	25.00	28.00	
Assam	513	21831	N.A.	-	
Bihar	3525	184000	10.40	10.56	
Gujarat	10679	2147000	142396.00	150824.00	
Haryana	3318	185000	3979.58	4179.23	
Himachal Pradesh	288	20000	435.58	492.48	
Jammu & Kashmir	-	-	-	-	
Karnataka	8516	1861000	10491.34	13280.97	
Kerala	2781	637000	-	14007.20	
Madhya Pradesh	4877	242000	6999.37	12208.80	
Maharashtra	21064	1572573	88865.00	88865.00	
Meghalaya	51	9936	1.85	126.68	
Manipur	323	12126	-	-	
Mizoram	51	1208	1.77	1.77	
Nagaland	112	4480	-	-	
Orissa	1412	111000	171.00	179.00	
Punjab	6823	390000	33106.48	33433.12	
Rajasthan	5900	436157	22451.00	5463.79	
Sikkim	174	5000	138.31	228.47	
Tamil Nadu	9931	2114000	-	10085.72	
Tripura	101	5571	25.62	22.13	
Uttar Pradesh	15648	649000	30214.10	36927.21	
West Bengal	1719	126049	18.91	116.78	
Andaman & Nicobar Islands	15	562	-	-	
Delhi	43	565	-	9.01	
Goa , Daman & Diu	-	-	-	-	
Lakshadweep	92	47405	2178.71	2423.95	
Pondherry	-	-	-	-	
Chandigarh	7	151	-	-	
Dadra & Nagar Haveli	162	18049	1284.05	4355.64	
India	103305	11536704	344054.07	378529.51	

Source: www.indiastat.com/india/showdata.asp?secid=333249&ptid=104624&level accessed on october 5, 2006

Table 2.5

Particulars	2001-2002	1999-2000
Number of Dairy Cooperatives	103305	101427
Of which Anand Patterns Dairy Cooperatives	96206	84289
Membership Total (in Million)	11.5367	12.9085
Membership of Anand Pattern	10.738	10.608
Women Membership (in Million)	2.334	-
Share Capital	Rs.2795.3	Rs.2421.3
Govt. Participation in Share Capital	13.8%	15.6%
Working Capital	Rs.14667.8	Rs.10912.3
Assets	Rs.10071.3	Rs.7285.8
Reserves	Rs.	Rs.1623.9
Turnover (Total)	Rs.5957.9	Rs.58922.3
Average Milk Procured per Days (' 000 Lt.)	16504	15877
Number of Milk Sheds (Unions)	176	176
Total Milk Produced by Cooperatives (' 000 Lt.)	6023960	5795105
Liquid Milk Marketed per Day (' 000 Lt.)	13363	12964
Milk Powder (SMP) Production (MT)	120786	53613(SMP)
Whole Milk Power (WMP) Production (MT)	-	11728(WMP)
Baby Food Production (MT)	-	27067
Table Butter Production (MT)	89517	29927
White Butter Production (MT)	-	35281
Whole Milk Power (WMP) Sold (MT)	120786	9624
Skim Milk Power (SMP) Sold (MT)	-	42728
Ghee Production (MT)	85384	51058
Balanced Cattle Feed Production	1089673	-
Processing Capacities (' 000 Lpd)	29000	26500
a. Rural Dairies	-	20450
b. Metro Dairies	-	725
Milk and Milk Products Sold*	Rs.37852.9	Rs.30962.6

2.4.3 Oilseed Cooperatives

Among the variety of schemes to foster the modernization of oilseed production, marketing, and processing, the Oilseed Growers Cooperative Project (OGCP) came first. Launched in 1979/80 in an effort to duplicate dairy cooperatives' production achievements under Operation Flood, OGCP's implementation was a responsibility of the National Dairy Development Board (NDDB). By 1994/95, it had created a network of 5,513 oilseed growers' cooperative societies with about one million members in 18 cooperative unions/federations. Cooperatives were to provide a market outlet for farmers' output and serve as a medium for delivering

farm inputs and support services, such as credit, improved seeds, fertilizer and extension. Operating as fully integrated units, by 1994/95 the cooperatives had established a combined oil crushing capacity of 3,310 mt per day (1.8% of the national total), could solvent-extract 1980 mt of oil per day (2.1% of India's capacity), and could refine 733 mt per day (18% of the total.). The cooperatives' storage capacity reached 170,000 mt for oilseeds and 277,000 mt for oil during the same period.

Cooperatives, in spite of their exemptions from regulatory barriers and public financial support, have failed to play a significant role. Consequently, storage is made unnecessarily costly by being scattered over a multitude of small operators, who have little access to modem storage facilities and to formal sources of credit. The high costs of storage, unreflected in seasonal price fluctuations, show up in the high crushing margins, and in lower prices to oilseed growers. Farmers, in effect, bear the brunt of a policy initially designed to protect them from hoarding. Storage limits also have a downstream impact on processors; they limit the capacity of oilseed suppliers to purchase, store, and mix seeds of differing oil content to achieve precise quality requirements. The only exception lies in the support provided to farmers who can use storage facilities built with *mandi* fees, but only for a few days until the actual sale of the produce.

The Technology Mission on Oilseeds (TMO) launched in 1986, among various other things included the promotion of both cooperative and private sector involvement in oilseed processing activities. But cooperative processing units account for only a small share of total crushing capacity and a slightly larger share in refining capacity. They account for 1.8 percent of expelling capacity, 2.1 percent of solvent extraction capacity and 18 percent of refining. Cooperatives were given preferential treatment – such as exemption from SSI reservation, controls under the EC Act, and the RBI's Selective Credit Control Policy) over their private sector competitors. As such, it was expected that they would perform in a superior manner relative to private processors. However, in spite of their exemption from the Selective Credit Control Policy, oilseed processing cooperatives suffered from lack of access to working capital finance as a result of state government intervention, other cooperatives simply lacked the

working capital to buy seeds with which to utilize their capacities. As a result, the impact of cooperatives on the oilseed marketing and processing has been correspondingly limited.

2.5 FARMERS ORGANIZATIONS IN MARKETING

Inefficient marketing system has lead to an avoidable waste of around Rs 50127 crores. A major part of this can be saved by introducing scale and technology in agricultural marketing. Milk and eggs marketing are two success stories of role of scale and technology in marketing. The extent to which the farmer-producers will benefit (out of saving of avoidable waste) depends on the group-marketing practices adopted by the farmers. In this sense, farmers' organizations need to be promoted for undertaking marketing activities on behalf of the individual members of the group. While looking at the options for promoting marketing based farmers' organizations, cognizance of existence of the following three groups of organizations needs to be taken:

- (i) There is a network of farmers' cooperative organizations promoted during the last five decades. These include national level cooperatives (NAFED, TRIFED); state level general and commodity specific organizations, and primary level marketing and credit societies. Primary level marketing cooperatives have mainly remained preoccupied with input supply rather than output marketing. The PACS at the village or cluster level mainly handled credit and inputs rather than output. Nevertheless, in some states (Gujarat, Maharashtra) and for some commodities (milk, oilseeds, sugarcane), cooperatives have played an important role in output marketing also.
- (ii) During the last two decades, a large number of self-help groups (SHGs) have emerged in the country. A nation-wide programme to link SHGs to the banking system was launched in 1992. Currently, there are three types of SHGs viz. (a) formed and financed by banks; (b) formed by other agencies but financed by banks; and (c) financed by banks using NGOs. Up to March 2004, there were 10.8 lakh SHGs linked to the banks and 90

percent of these were women groups. However, micro-finance programme did not explicitly target the agricultural sector. Extending SHG programme to farmers will require internalization with PACS, which may not be easy.

(iii) In recent years, Krishi Vigyan Kendras (KVKs) and other organizations have formed commodity based farmers' clubs, which is a good initiative. NABARD has organized 13664 farmers' clubs up to March 31, 2005.

Promotion of such organization should be assisted or helped to create basic infrastructure for their effective functioning. This could even include, assistance for professional management. Some examples of successful farming organization models are discussed here.

2.5.1 MahaGrapes

MahaGrapes came into existence in 1991. It owes its origins to the Maharashtra State Agricultural Marketing Board (MSAMB). MahaMangoes and MahaBanana were also set up subsequently in mangoes and bananas respectively. The objective of the MSAMB was to promote the marketing of fruits by assisting farmers technically and financially and linking them to new domestic and international markets. The creation of MahaGrapes is unique in other ways, as it is the first of its kind to make use of a special provision under section 20(1) of Maharashtra Cooperative Act. This section came into force after an amendment in 1984, which allowed cooperatives to associate with other sectors of the characteristics of both a cooperative and a private sector partnership firm. The role of MahaGrapes as a marketing entity itself is a policy innovation. Producer organizations might not be most adept at marketing their products and thus the need for a specialized marketing entity.

MahaGrapes could establish itself easily and firmly as it built upon the existing Grape Growers' Association (Draksha Bagitdar Sangha). The Sangha has been in existence since the 1950's and boasts of 20,000 member farmers. Also, called the Prayog Parivar meaning family for experimenting, it has since organized the grape growing farmers to encourage the improvement of produce quality and facilitate marketing domestically.

In the organizational structure of MahaGrapes, at the apex are the executive partners comprising two farmers. This is followed by an executive council consisting of seven elected cooperative heads, then followed by a board of directors composed of all the heads of the sixteen cooperatives that have tied with MahaGrapes. All the producers (grape growers) are members of any of these sixteen cooperatives. All decision making is done by the executive partners in close consultation with the members of the executive council, who are primarily cooperative heads, and in direct communication with the farmers. All decisions finalized by the executive body are taken after consulting with and achieving a consensus of the executive council. The members of the executive council in turn, being the representative of farmer cooperatives as their leaders, voice the opinion and views of the farmers. All issues to be resolved are discussed right from the top to the bottom of the MahaGrapes structure. Thus there exists complete transparency in all decision making. The Executive Council however also have discretionary powers to make emergency decisions including financial decisions up to the tune of Rs 40 million. This often helps in expediting decision making.

Before the actual creation of MahaGrapes, efforts were made by some of the leading and educated farmers of the region, to involve the numerous pre-existing grape growing farmer groups under the umbrella of MahaGrapes. In order to convince the groups leaders, a team of seven people, five farmers, one scientist and one government official visited Europe to see for themselves how grape farming, processing and marketing was done alongwith the nature and form of inputs used and marketing methods followed. A part of the cost of this visit was funded by the State Government.

These lead farmers were convinced that the grape produced by the farmers was of quality good enough to be exported to Europe provided they could meet the standards and safety regulations, and thus MahaGrapes came to be set up. In the beginning, MahaGrapes had 29 grape growing farmer cooperatives as its members. The initial time periods were characterized by difficulty for

MahaGrapes resulting from high rates of consignment rejections in the European markets. In the very second year after exports started in 1991, a large consignment was rejected and MahaGrapes had to suffer losses to the tune of Rs 20 million. As a result many cooperatives left MahaGrapes to concentrate on the domestic market or to export on their own under the brand name of their own cooperative. The number of cooperatives came down within two years and as of now it has 16 farmers cooperatives as its members from Sangli, Solapur, Latur, Pune and Nasik districts of the state.

The active role of the government in bailing out MahaGrapes in these times of crisis and continuing to not intervene in its working is especially significant from a policy perspective. The role of the government over time has been akin to infant industry protection. The government support in the initial periods was forthcoming where without the support the ability to resume export would have been seriously in doubt. The state government stepped in and alongwith APEDA and NCDC provided financial support and subsidies to bale out MahaGrapes. After this initial backing and assistance MahaGrapes has not looked back and has been steadily growing. MahaGrapes currently exports grapes to Europe, the Middle East and in recent years to Sri Lanka. Thompson seedless is the main variety of grape exported.

Mahagrapes deals in three main varieties of grapes produced by the grape farmers viz. Thompson seedless, Sonaka and Sharad seedless. Out of these the first variety is targeted mainly for exports to European markets. The Sharad seedless variety is sold mainly in the domestic market while the Sonaka variety is marketed domestically and also exported to Gulf countries.

In 2003-2004, MahaGrapes exported 516.53 million tonnes of grapes valued at around \$2.17 million to U.K, The Netherlands, Germany and Sri Lanka. During 2004-05, MahaGrapes exported 100 containers of grapes (each container carries 14,400 kg of grapes). This is around 5 percent of the total grape exports from Maharashtra.

Though not as acute as in initial time periods, MahaGrapes had had to deal with issues of consignment rejection on an annual basis for a substantial period of

time. As the fruit quality and SPS measures as well the methods used to ascertain these fruit characteristics change year to year, MahaGrapes has to keep abreast with them and amend their own production, processing, storing and testing methods employed in India for testing chemical residues (GCMS method) was different resulting in the rejection. Other product attributes which could be the basis for rejection are: berry size, fruit color, bunch weight, blemish, bag weight (min-max), stem color, berry shrivelled, split berry, SO2 damage, waste berry, pest damage, shatter berry, chill damage, temperature, residue, taints and odor, packing, quality and average check weight. Over the years MahaGrapes has learnt how to minimize these potential forms of inflection and the rejection rates have gone down substantially.

The firm does not retain the profit it earns. It charges a nominal fee (Rs 4 per kg) of grapes exported by the firm for a farmer. This amount helps in covering the operational costs of the firm. This broadly includes wage cost of the firm's employees and transportation cost of sending the product to distant markets. The rest of the profit earned is passed on to the farmers. In addition, MahaGrapes/cooperatives charges Rs 7 per kg of grapes for pre cooling and cold storage charges. When amounts marketed by individual members vary across members, conflict over the cost allocation rule adopted by the cooperative is likely to occur. In MahaGrapes, the allocation of costs related to the storage and cooling or contribution to operational costs is proportional to the amount marketed by the farmers. Since the contribution relates to the output marketed, conflicts over cost sharing have not been an issue in MahaGrapes.

In terms of risk mitigation, the MahaGrapes farmer bears the entire risk in production and marketing. However, the level of risk itself is lower to the extent that the cooperative provides technical expertise so that the crop can be saved from damage and satisfies the quality norms. Thus, unlike in a situation where the farmer sells to intermediaries who bear the entire marketing risk (from rejection of the assignment), here the risk is shared across all farmers. The firm itself covers against such risks by rejecting procurements that do not meet the specifications but once they accept the produce from the farmer, the risk is totally borne by the firm where, everyone owns a share. The underlying principle for MahaGrapes is enabling market access by lowering transaction costs. Farmers

realize that there exists an international market for their product. They also know that by getting access to this market they can earn a higher price for their product. The problems in terms of certain bottlenecks that the farmer face are many. First are the high transaction costs of negotiating with foreign buyers, ensuring that the product quality meets the buyer's specifications and transporting the product to its destination. Another bottleneck is in mitigating risk, both in production and due to consignment losses if rejected by the buyer on quality grounds. It was envisioned that bringing together farmers under one umbrella would give better visibility and greater accessibility in foreign markets. In addition, they would be able to gain from economies of scale.

MahaGrapes stands out as an encouraging example of public-private partnership that has delivered favorable outcomes for both large as well as small farmers. Ownership of MahaGrapes lies solely in the hands of the farmers; as they have collectively contributed their share in the fixed and operating costs of MahaGrapes and they also handle the governance of the firm. However, the state initiative from institutions such as MSAMB was essential. MSAMB deputed and paid the salaries of the first governing officers of MahaGrapes for three years who were brought in from other state departments. MSAMB also provided for consultancy services from experts on agri-marketing, packaging, technical services such as the Central Food Technology Research Institute (CFTRI) has been done by MahaGrapes.

The National Cooperative Development Corporation (NCDC) was also of a great help. It gave loans to the societies for pre cooling and pack houses, when such technology was unheard of in these parts. Experts would have been impossible without this critical help. Additional support in other small ways to MahaGrapes also came from the National Cooperative Development Corporation (NCDC), New Delhi; Department of Cooperation, Government of Maharashtra; Maharashtra State Agriculture Marketing Board, Pune; Agriculture and Processed Food Products Export Development Authority (APEDA), New Delhi; and National Horticulture Board, New Delhi.

With assistance from a spectrum of government bodies, the government assumed the role of a mere facilitator. In contrast to the system of other cooperatives in India (in dairy and sugar for example), the government was not assigned any direct role in the decision making processes of MahaGrapes. In many dairy cooperatives for example, being a state run organization, the shift of economic power via decision making has come to rest with the top management and rent seeking is not only a common practice but also an excepted behavior of state appointed functionaries amongst the milk producing farmers.

As a marketing partner of the producer cooperatives facilitating exports, MahaGrapes has enables the farmers in several ways.

Foremost in enabling exports is ensuring compliance with the food safety (i) and quality requirement of the western markets which has three stages viz. the information stage followed by a decision stage followed subsequently by an implementation stage. MahaGrapes has been active in all three stages of the compliance process. Certain knowledge of the standard is necessary to make a decision. MahaGrapes has followed along the tradition of holding quality related workshops which the Grape Growers Association (Draksha Bagitdar Sangha) had been conducting from before. In the workshops, information on the standard is disseminated to the member farmers. Farmers and grape handlers/sorters (primarily women) are continuously informed about and trained in the latest grape growing and handling methods and processes, as well as the latest weather and climate updates. Regular monthly workshops and field demonstrations are conducted to help disseminate this information to the farmers.

MahaGrapes continuously updates the list of banned and approved pesticides and fertilizers, which keep changing year to year across their market countries. Similarly, the changes in the permissible levels of chemical residues are also provided by them regularly. All this information is published in the form of a yearly hand book in the native language and distributed free of charge amongst the farmers.

Once the information on the standards is available, action is needed relating to the decision of implementation. What are the steps that need to be taken, if there are restrictions on inputs how and where from can they be procured are some of the decisions that emerge regarding implementation of the standards in the next stage. The MahaGrapes decision to produce organic pesticides itself would fall under its actions in the decision stage.

In the implementation stage, MahaGrapes provides materials and technical help along with infrastructural support to facilitate the implementation of the standards. MahaGrapes for instance provides the farmers with packaging material which comply with international norms. Plastic bags and panettes are imported from Spain and elsewhere in which the grapes are first packed. Special S02 sheets (Sulphur Di Oxide sheets) are imported from China which are used to cover the grapes before these are sealed in corrugated cardboard boxes. This releases the SO2 gas right after 15 days when the consignment of grapes arrives at the destination, so as to restrict the spread of bruising or any other damage sustained by the grapes in transit.

Regular and constant monitoring of the grape plant by the farmers themselves is facilitated by the scientists from the National Research Centre (NRC) in Pune. This ensures that the plant remain healthy through out the year and not just in the fruiting season. Bio-fertilizer and biopesticide are developed and produced by MahaGrapes and provided to members farmers cheap. This not only helps them meet the stringent EUREGAP requirements but also cost less. These are also sold to other non-member farmers thus covering a part of the cost.

Acquiring a EUREGAP certificate individually moreover is costly for the small and medium grape farmers. However, MahaGrapes has managed to provide the entire cooperative societies with the certification. Thus each society gets certified as EUREGAP compliant along with the member farmers who now then have to pay just Rs 1200 (approximately \$28).

- (ii) MahaGrapes has also introduced farmers to new technology. The farmers have been exposed to the possibility of growing new grape varieties. Drip irrigation technology has been in existence for a while but grape farmers were encouraged to take it up in a permanent way. Firms selling drip irrigation equipment now visit the farm and after having assessed its area and specific dimensions, install the drip irrigation set up. The same drip irrigation installation is also used to deliver fertilizer to the plants, the simultaneous provision of irrigation installation and fertilizers being termed 'fertigation'. Improved water storage technique is used with water being stored in huge pits dug into the ground and walled by earth mounds and lined in the inside with a special percolation restricting plastic sheet imported from Spain.
- (iii) Infrastructure provision MahaGrapes with partial financial aid from the state government and partial self finance have installed pre coolers and cold storages at all the 16 cooperative headquarters. The pre cooler technology was imported from California and helps to cool the grapes to one degree centigrade. This, by removing the heat from the grapes extends its storage life to up to three months. After the grapes are pre cooled they are stored in the adjacent cold stores before they are carried in refrigerated trucks to the port. (A nominal part of the price/Kg received by the MahaGrapes farmers namely Rs 4 goes to fund the activities and pay for the costs of running the MahaGrapes firm and paying salaries to its employees.) An additional Rs 7 is charged for the cooling and the storage facilities provided at the cooperative headquarters goes to the cooperative fund.

2.5.2 Amalsad and Gadat Cooperatives in Gujarat

The Amalsad cooperative was registered in 1941. It has a membership of 8310, of which 4273 are active members. Out of the total business of about Rs 8.5 crore for various fruits, chickoo dominates the scene with as much sales as Rs 7 crore from the crop. Mango, a major contributor once upon a time, has been reduced to just Rs 60 lakh, and banana has almost disappeared. In fact, paddy has acquired somewhat an important place in business of the cooperative with

sales contribution of Rs 90 lakh. The decline in relative as well as absolute share of mango is attributed to the uncertainly of crop, fluctuations in its price, and short season which have led to area shift away from mango in favour of chickoo and paddy in the South Gujarat belt.

Similarly, the Gadat cooperative, registered in 1944, has 3152 members, of whom about 1800 are active members. The cooperative covers 800 hectares across seven villages. Like Amalsad, it has chickoo as its main business though banana and mango are also procured. Out of a turnover of Rs 4.075 crore, chickoo accounts for as much as Rs 4 crore. It also has tried selling mango pulp under the brand names of 'Triputi' and 'Amidhara'.

In Amalsad cooperative, every day about 200 farmer members bring graded produce to the society at its two collection centres, one of which is at Amalsad itself. The grading is done on the basis of size, shape and fitness of the fruits. A sample of 10 kg of chickoo from a lot is drawn in order to judge the quality. The number of fruits in the sample lot size determines the quality. The lesser the number of fruits, the better grade of quality is awarded to that lot. The system is known locally as 'Jantri' count. These quality and grade parameters are fixed for the season and can be changed from season to season or during the season itself depending on the behaviour of and price realization in terminal markets, agroclimatic situation, and general levels of quality in a season.

In the Gadat cooperative, grading is done in such a fashion that every five fruits more per 10 kgs of chickoo will lead to a Rs 0.70 cut in price per kg. This leads to the entire pooled produce being graded into three types – A, B and C. For procurement from member, within each grade the penalty for more number of fruits per 10 kg pack is imposed. The minimum number of fruits (chickoo) in a 10 kg pack could be 90 (A grade) and maximum 250 (C grade).

The Amalsad cooperative has two types of members – 'A' grade and 'B' grade. It has its own shop (outlet) in each village to cater to the needs of the members in 17 villages which have a population of the order of 35,000. Besides, the cooperative owns a petrol pump and a cloth store at Amalsad, though there is also a departmental store in the compound of the cooperative. There are eight
flours mills owned by the co-operative. The farmer members are given advance credit and many other input and consumption loans and facilities for the crop they agree to deliver at the time of harvest to the cooperative. And the defaulter rate is never more than 2-3 percent. The farmers are paid up to 86 percent of the value of pooled produce by the third day and the remaining is either paid or taken as deposit at bank rate of interest towards the end of the season after deducting actual expenses incurred by the cooperative.

Similarly, in the Gadat cooperative area, each village has a retail outlet of the cooperative along with a flour mill. This outlet supplies various agricultural inputs as well as consumer goods to farmer members. Besides, there is a rice mill owned by the cooperative and it sells rice under the brand name of "Ambica". In the Gadat cooperative also, the produce is pooled after the farmer has been paid up to 75 percent of the value of his produce as per the grade of the produce.

The Amalsad cooperative works through the commission agents to dispose off the produce in markets like Delhi, Bombay, Indore, etc. In fact, Delhi alone accounts for 90 percent of the total chickoo sales of the cooperative. Amalsad cooperative works in a highly competitive market. There are more than 10 private traders in the Amalsad market. But the cooperative accounts for 50 percent of the total market arrivals of fruits, and 95 percent of the produce from the 17 villages which are catered to by the cooperative. The cooperative has its own chickoo packaging machine worth Rs 14 lakh which is used to pack and load chickoo in trucks mechanically. Besides, the cooperative is also in the business of cleaning, packing, branding, and selling various food commodities at its main complex and through its various outlets.

In the case of Gadat, mango is sold to the American Dry Fruit Company (60 percent) as well as in the fresh fruit retail market (40 percent) through its own outlets which are located in Ahmedabad and Surat (2 each). Chickoo is sent to distant markets like Delhi as in the case of Amalsad. In fact, the cooperative is also planning to sell chickoo through retail outlets. Major factor in efficient marketing management in these cooperatives is the use of market information in decision making. They are equipped with various modes of communication and are in constant touch with the relevant markets and buyers.

With a paid up capital of Rs 2.16 lakh and reserve funds of the order of Rs 10 lakh, the Amalsad cooperative shows a robust financial performance. Besides members' share capital (Rs 10 per share), the cooperative has members deposits to the tune of Rs 3.28 crore. Also, the traders provide advance deposits to the cooperative for meeting its working capital requirements. The working capital in 1995-96 was Rs 7.06 crore, though the cycle of working capital is only about 3-4 days. But the traders' advance deposit is exhausted by the end of 3-4 sales transactions. The cooperative made a profit of Rs 2.13 lakh in 1995-96. On various indicators of financial performance of a cooperative organization like share capital, reserve funds, member deposits, working capital etc., the cooperative has had a consistently robust performance. The Gadat cooperative, with a share capital of Rs 2 lakh, and member deposits of the order of Rs 2 crore, is also fairly robust financially. The working capital requirements are facilitated by advance deposits from traders as in the case of Amalsad.

Amalsad cooperative has a board consisting of 21 members, of whom 19 are "A" grade members and two "B" grade members. Only five members are elected fresh every year. This ensures continuity with change so far as business of the cooperative is concerned. Also, this system provides for inducting new blood into the cooperative and providing an opportunity to the new members to participate in decision making.

One more feature of these cooperatives is that the membership does not come as a free option for the members. The members are expected to deliver produce to the cooperative and loyalty is valued. In fact, in order to keep the cooperative viable and manageable, the Gadat cooperative is planning to close its membership. The limited membership may not be in tune with the principles of cooperation, but it is crucial for the financial health of the cooperative. In fact, this has been one of the factors in ensuring the viable functioning of the so called "New Generation Cooperatives" in the US and of the sugar cooperatives in South Gujarat along with other factors like value added processing, linking of producer equity and product delivery rights, sale of tradable equity shares to raise capital and efficient use of market information.

2.5.3 HOPCOMS Bangalore

The present HOPCOMS was established as 'The Banglore Grape Growers' Cooperative Marketing and Processing Society Limited' (BGGCOMS) on 10th September, 1959 with the main objective of encouraging grape vine cultivation by providing the required inputs, technical know-how, marketing facilities etc. The society started handling fruits and vegetables apart from grapes since 1965. In 1983, the name of the society was changed as 'The Banglore Horticultural Producers' Cooperative Marketing and Processing Society Limited (BHOPCOMS) and subsequently in 1987 it became HOPCOMS.

The membership of the society consists of four categories viz. 'A' class members, who are the producers of horticultural crops in the area of operation, 'B' class members, who are admitted as associate members and include cooperative institutions, 'C' class earmarked for the Government of Karnataka, and 'D' class members comprise traders and commission agents. The society is authorized to raise share capital worth Rs 10 crore by issuing 4.9 lakh shares to 'A' class, 10,000 shares to 'B' class and 5 lakh shares to the Government. Each share is valued at Rs 100.

The jurisdiction of the society extends to eight districts of Karnataka, namely Banglore (both rural and urban), Mysore, Dakshina, Kannada, Kolar, Mandya, Tumkur and Shimoga. The society has one branch each in six districts barring Shimoga and Banglore (Rural). HOPCOMS is run under the guidance of the Department of Horticulture and is managed by a Board of Management consisting of 15 members – 11 elected from 'A' class and four Government nominees. The director of Horticulture is Ex-Officio President of the society. However, since 1992-93, the president is elected from among the 'A' class members. A senior class I officer of the Department of Horticulture is the Managing Director of the society. One Joint Registrar of Cooperative Societies and Special Officer (Grape Development) from the Department of Horticulture are the other two Government nominees.

The main business of HOPCOMS is procuring and disposal of fresh fruits and vegetables and the activities are discussed briefly here.

(i) Procurement of Fruits and Vegetables

The society procures fruits and vegetables both from cultivators (members as well as non-members) and the open market.

Producers at the nearby places bring their produce on their own and supply at the H.O. or at the branches. The cultivator has to take an indent from the society for the supply of fruits and vegetables and normally, the produce in excess of the indented quantity will not be accepted. The society bears the unloading charges and it makes payment to the cultivators immediately after procurement up to Rs 3000 in cash and if it exceeds Rs 3000, then cheque is issued to them.

In the mid 80s, HOPCOMS opened procurement centres at Sarjapur, Hoskote and Dodaballaput and of late, in Hassan and Channapatna. The fruits and vegetables growers in the nearby areas supply their produce at these centres. For transporting this to the H.O., the society charges a transport cost of 10 to 20 paise per kg of fruits and vegetables.

During the '70s, the society was procuring hardly 35 to 40 percent of fruits and vegetables from the field. However, in the 80s, there was a change in the policy of HOPCOMS in favour of field procurement and with the help of the procurement centres, at present, the society purchases nearly 85 percent of fruits and vegetables from the cultivators directly. Almost entire quantity of tomato, cabbage, cauliflower, cucumber, raw banana, pomegranate, papaya and mango is now being procured from the field.

A part of the produce is also bought from the local markets to meet the requirements of the bulk buyers like Government hospitals, hostels, factories etc. However, though this helps the society meet its commitments, the society pays a higher price for fruits and vegetables whenever it resorts to market purchases. The price differential is as high as Rs 4-6 per kg for fruits and around Rs 1 per kg for vegetables. Thus,

on an average, the society losses Rs 3 per kg of fruits and vegetables by purchasing from the market. It was observed that the policy of buying more from the market followed by the society in the 70s resulted in net losses to the society. The society buys about 15-20 percent of fruits and vegetables from the market.

In addition to procurement from producers and the market, HOPCOMS gets a small quantity of the produce from the other states. It gets apple from NAFED, The Himachal Pradesh Horticultural Produce Marketing and Processing Corporation (HPMC), National Dairy Development Board (NDDB) and GROWREP, Delhi, kinnow orange from GROWREP, orange from NAFED, Nasik and onion from Vegetable and Fruit Cooperative Marketing Society (VEFCO), Nasik. The procurement of fruits and vegetables is made on consignment basis.

Though HOPCOMS does not classify fruits and vegetables into grades like A, B, C, the society claims that it maintains the quality of fruits and vegetables by accepting only the good quality produce from the growers. It rejects the injured, damaged and diseased ones. Although this helps the society minimize the wastage and hence the loss, yet, from the producers' point of view this is not desirable.

(ii) Disposal of the Produce

HOPCOMS has a good network of 256 retail outlets spread over eight districts. These outlets are run by the salesmen of the society who get a commission of 3.7 percent from the society. The H.O. Bangalore sold about 71 percent of vegetables and 79 percent of fruits though these retail outlets. Further, about 80 percent of vegetables like cowpea, bhendi, knolkhol and tondekai (coccinea) and over 60 percent of tomato and brinjal were sold through these retail outlets. As regards fruits, around 95 percent of sapota, papaya, pomegranate, pineapple and banana (yelakki) and over 65 percent of orange, grape and banana reached the consumers through these outlets. It may also be observed

that HOPCOMS gets higher price for fruits and slightly less for vegetables when they are sold in these outlets.

HOPCOMS sells fruits and vegetables on bulk basis to certain 'Institutions' like government hospitals, hostels, factories and also to processors like KISSAN and Karnataka Agro Fruits. Normally, HOPCOMS supplies fruits and vegetables on credit basis and it charges 40-50 paise per kg of vegetables more than the stall price when vegetables are sold to the factories. In case of processors, transport cost is added to the price of the vegetables. This, perhaps, is the reason for the higher price that HOPCOMS gets for vegetables like tomato, bhendi, cucumber, onion etc. when it sells them to the bulk consumers.

(iii) Price Policy

HOPCOMS has an approved policy of fixing the procurement price slightly higher than the prevailing wholesale price in the market and the stall (outlet) price at a slightly lower level than the ruling retail price so as to maintain a margin of 25 percent (This margin was 15 percent up to 1989-90 and it was increased to 20 percent in 1990-91 and later on to 25 percent). An analysis of monthly prices of certain fruits and vegetables for the year 1992-93 revealed that the fruits and vegetables grower gets 75 percent of the stall price. It is observed that this generally earns more (33 percent) than the approved margin of 25 percent.

The price paid to the producer is 6-10 percent higher than the wholesale market price. This means that the producer gets the full wholesale price and a part of the retail margin. If we account for the commission charges, which is normally 8-10 percent of the wholesale price itself, then the producer is likely to get 18-20 percent higher than the price which he gets in the market. As regards the consumer, he is also benefited by the price policy as he gets the same vegetable or fruit at 10-12 percent less than the retail price in the market.

(iv) Production Related Activities

HOPCOMS supplies production requisites like vegetables seeds, fertilizers, PPC (fungicides and insecticides) and garden implements to the fruits and vegetables growers at reasonable price. It may be observed that inputs account for 8-10 percent of the total sales of HOPCOMS. Further, it is also to be noted that there has been a three fold increase in the value of inputs supplied to fruits and vegetables growers.

(v) Processing Activity

HOPCOMS takes up preparation of juice from grapes, mango, orange, etc., in Banglore, Mysore and Mangalore branches and sells it in bottles of 200 ml in their retail outlets. Although, with the opening up of the procurement centres, there was an increase in the supply of fruits, but a corresponding increase is not observed in their processing and juice sales have remained at around Rs 20 lakh (though there was an improvement in 1992-93) accounting for hardly one percent of the total sales of HOPCOMS as specific efforts were not made either in the juice preparation or its sales.

2.6 CONTRACT FARMING INITIATIVES

2.6.1 The Concept

Apart from linking the farmer to consumer through farmers organizations, another initiative for reducing transaction cost is establishment of direct channel between farmer-processor/bulk consumers, through contract farming. Several national and multinational processors or fast food chains are increasingly entering in to contract/alliance with the farmers to encourage them to cultivate farm products (fruit, vegetables, etc.) of the desired quality by providing them not only seeds and other inputs but also assured procurement of the produce at pre-decided prices. Marketing tie-ups between farmers and processors or bulk

purchasers have special significance for small farmers, who have small marketed surplus and do no have staying power. Such arrangements are being encouraged to help in reducing price risks of farmers and to also expand the markets for farm products.

Contract Farming (CF) can be defined as a system for the production and supply of agricultural and horticultural produce by farmers/primary producers under advance contracts, the essence of such arrangements being a commitment to provide an agricultural commodity of a type, at a specified time, price, and in specified quantity to a known buyer. In fact, CF can be described as a halfway house between independent farm production and corporate/captive farming and can be a case of a step towards complete vertical integration depending on the given context. Owing to the efficiency (coordination and quality control in a vertical system) and equity (smallholder inclusion) benefits of this hybrid system, it is being promoted aggressively in the developing world by various agencies. It basically involves four things – pre-agreed price, quality, quantity or acreage (minimum/maximum) and time.

CF is known by different variants like centralized model which is company farmer arrangement, outgrower scheme which is run by government/public sector/joint venture, nucleus-outgrower scheme involving both captive farming and CF by the contracting agency, multi-partite arrangement involving many types of agencies, intermediary model where middlemen are involved between the company and the farmer, and satellite farming referring to any of the above models. In fact, CF varies depending on the nature and type of contracting agency, technology, nature of crop/produce, and the local and national context.

The contracts could be of three types; (i) procurement contracts under which only sale and purchase conditions are specified; (ii) partial contracts wherein only some of the inputs are supplied by the contracting firm and produce is bought at preagreed prices; and (iii) total contracts under which the contracting firm supplies and manages all the inputs on the farm and the farmer becomes just a supplier of land and labour. The relevance and importance of each type varies from product to product and over time and these types are not mutually exclusive. Whereas the first type is generally referred to as marketing contracts, the other two are types of production contracts. But, there is a systematic link between product and factor markets under the contract arrangement as contracts require definite quality of produce and, therefore, specific inputs. Also, different types of production contracts allocate production and market risks between the producer and the processor in different ways. The price of the contracted produce can be growers' fixed price, residual (profit/loss) sharing by sponsor and grower, open market based price, spot market price, consignment based two-part split price, tournament price (fixed plus variable based on relative performance), base price plus quality based incentive price, or administered price.

For different reasons, both farmers and farm product processors/distributors may prefer contracts to complete vertical integration. A farmer may prefer a contract which can be terminated at reasonably short notice. Also, contracting gives access to additional sources of capital, and a more certain price by shifting part of the risk of adverse price movement to the buyer. Farmers also get an access to new technology and inputs, including credit, through contracts which otherwise may be beyond their reach. For a processor or distributor, contracts are more flexible in the face of market uncertainty, make smaller demands on scarce capital resources, and impose less of an additional burden of labour relations, ownership of land, and production activities, on management. The firm even gets an access to unpaid family labour and can make use of state funds indirectly through agricultural production sector which are directed at farmers by development agencies. Also, food processors can minimize their overhead costs per unit of production by operating their plants at or near fully capacity as contracting gives assured and stable raw material supplies from farms. The firm can also project an image of working with local producers as a partner when it undertakes CF and may even obtain statal and international agency incentives for its activities as developmental projects, instead of corporate farming. Contracts also help improve product quality by directly introducing incentives and penalties as there are problems of adverse selection and moral hazard in any contractual arrangement resulting in underinvestment or shirking by any of the parties.

At more macro economic level, contracting can help to remove market imperfections in produce, capital (credit), land, labour, information and insurance

markets; facilitate better coordination of local production activities which often involve initial investment in processing, extension etc.; and can help in reducing transaction costs. It has also been used in many situations as a policy step by the state to bring about crop diversification for improving farm incomes and employment. CF is also seen as a way to reduce costs of cultivation as it can provide access to better inputs and more efficient production methods. The increasing cost of cultivation was the reason for the emergence of CF in Japan and Spain in the 1950s and in the Indian Punjab in the early 1990s.

Some recommend CF as the only way to make small scale farming competitive as the services provided by contracting agencies can not be provided by any other agencies. Contract farming also lowers transaction costs for the farmers as many of the transactions are internalized by the procuring firm. CF is also an alternative to corporate farming which may be costly, risky, and difficult to manage and still not viable. Further, in India, supermarket chain growth including FDI in retail, international trade and quality issues like SPS, organic trade, fair trade, and ethical trade, promotion by the central and state agencies, banking and input industry push for CF, farming crisis and reverse tenancy, and failure of traditional cooperatives, are helping CF spread across crops and regions as they provide new space to this arrangement in the context of withdrawal of state from agricultural space. Even new IPR regime which encourages protection and exploitation of proprietary genetics is likely to accelerate contract farming practice.

But, generally, contracting agencies especially private, tend to prefer large farmers for CF because of their capacity to produce better quality crops due to the efficient and business oriented farming methods, large volumes of produce which reduces the cost of collection for the firm, their capacity to bear risk in case of crop failure, and various services provided by these large producers like transport, storage, etc. On the other hand, small farmers are picked up by firms for contracts only when the area is dominated by them, there is government directive to do so or they are found to be low cost producers in certain areas and crops. Further, firms may work with small farmers to make use of the state support (financial and technical) to these producers under various development programmes and to benefit from lower cost of production on these farms as these farmers have access to cheaper family labour, and being residual claimants of their labour, work more conscientiously than hired labour. In fact, some of them even use large growers, rural elite, and local small processors as sub-contractors to procure from the small growers for the company. The seed companies in India use small companies as subcontractors to procure seeds produced under contracts. In gherkin CF is carried out by small and marginal farmers as the crop requires plenty of labour inputs which these farming families can provide from within. Also, working with many small farmers in the case of small processors gives the required flexibility in procurement schedule helping to extend the processing season and use the equipment efficiently; and helps spread risk of supply failure as compared to working with a few large farmers.

2.6.2 Status and Experience in India

CF has various models/variants being practiced in India at present. There have been some studies of the CF system in India more recently. But, most of them look at the economics of the CF system in specific crops, compared with that of the noncontract situation and/or competing traditional crops of a given region, e.g. in gherkins (hybrid cucumber) in Tamilnadu and Andhra Pradesh, tomato in Punjab and Haryana and cotton in Tamilnadu. It is found that contract production gave much higher (almost three times) gross returns compared with that from the traditional crops of wheat, paddy, potato, tomato and onion in the case of gherkin and cotton due to higher yield and assured price under contracts. The studies of tomato contract production in Punjab and Haryana, of cucumber in Andhra Pradesh and cotton in Tamilnadu also found the net returns from these crops under contracts being much higher than those under non-contract situations though production cost in tomato was higher under the contract system. A more recent study across crops, companies and locations in Punjab also confirms this. In case of cotton in Tamilnadu, the contract growers had lower input cost, lower interest loans, faster payment for produce, and the crop insurance facility. The studies in the states of Punjab and Haryana reveal that contract growers faced many problems like undue quality cut on produce by firms, delayed deliveries at the factory, delayed payments, low price and pest attack on the crop. More recently, DSCL run input supply and CF program (Haryali Kisan Bazaar) for potato in Haryana

also showed higher net returns for growers compared with non-growers due to highr yields and higher prices, though the cost of cultivation was also higher (17-24%).

It was also found by all of the studies that most of the firms work mostly with large and medium farmers with the exception of firms in Karnataka, Tamilnadu, and Andhra Pradesh which worked with small and marginal farmers due the nature of the crops (cucumber/gherkin, and broiler chicken). Gherkin contracting was also smooth as there was no local market for the crop, there was flexibility in contracts due to the short term nature of the crop, and farmers maintained alternative sources of income. Similar was the case of iceberg lettuce grown for McDonalds in India which had a very thin market. This bias in favour of large/medium farmers is perpetuating the practice of reverse tenancy in regions like Punjab where these farmers lease in land from marginal and small farmers for contract production. Breach of contracts by farmers as well as firms has also been reported. Some of these studies recommend further expansion and promotion of CF system due to its benefits. The eligibility criteria for participation in CF projects/schemes like irrigated land, suitable land, land near main road, literacy level of the farmer are themselves discriminatory in terms of who can be a contract grower. In fact, in CF everywhere, private agribusiness firms have less interest and ability to deal with small scale farmers on an individual basis.

The more recent models of CF like franchising being practiced by the Tatas (Tata Kisan Sansar) for wheat in states of UP, Haryana and Punjab; and by the Mahindra Shubhlabh Services Limited (Mahindra Krishi Vihar) for paddy in Tamil Nadu, Andhra Pradesh, Karnataka and basmati and maize in Punjab and Haryana are also not delivering as expected. Mahindra & Mahindra's recent involvement in Punjab agriculture has not worked to the advantage of the farmers. In fact, this model creates a monopsony where a single buyer buys produce of hundreds and thousands of farmers. This system works to the disadvantage of those farmers who lack adequate information about the market, which is termed as asymmetry of information. This model increases the buyer's power disproportionately and puts seller entirely at the buyer's mercy. Small and marginal farmers have not gained from these experiments. Wherever any gain has been reported, it is

reported for the farmers in general and distinction between big/rich and small/poor farmer's gains is not reflected in any way. The interests of the poor farmers are not synonymous with those of large/rich farmers. One of the limiting factors in performance of the contract scheme in Punjab seems to be the minimum support price (MSP) which introduces price rigidity and acts unfavourably for the buyers and exporters. On the other hand, because Basmati is out of the purview of the MSP, its contracting performance has been quite favourable for the processors and exporters as they could discover a market price. Also, being an export crop, it enjoys a well established high value market which in turn has created a lot of comfort for the exporters. The performance of CF in Punjab has been tardy despite the fact that the state (PAFC) has been reimbursing the extension service fees to the companies, on behalf of the growers.

Further, the contracts protect company interest at all costs to the farmer and do not cover farmer's production risk e.g. crop failure, retain the right of the company to change price, and generally offer prices which are based on open market prices. Even organic produce buyers offer conventional produce market price based prices to their growers. This is a serious issue as even a significant premium over market price may not help a farmer if open market prices go down significantly which is not uncommon in India. The market price based price is offered to avoid grower defaults as they can, otherwise, sell the produce in the open market due to availability of alternative market due to product symmetry.

Some firms also manipulate provisions of the contracts in practice, e.g. in the case of broiler chickens in Tamilnadu where they picked up birds before due date or delayed it depending on the demand which meant losses for contract growers. They also delayed payments upto 60 days. But, growers were locked into these contracts due to the firm specific fixed investments they had made. Thus, many of the CF projects also failed due to either poor design of the project or default by any of the contracting parties.

Even state sponsored programme of CF did not deliver in Punjab. The contracted winter maize failed almost completely due to inclement weather and poor quality

seeds. In case of green peas, the contract growers were forced to dump their produce in open market, after being rejected by the PAIC on quality ground as per the contract specification, as there had been fungus infection due to inclement weather which was marked by heavy rains in winter season and then sudden rise in temperature. An area of 500 acres under contract production of green peas in Patiala and Fatehgarh Sahib districts had been affected. Some farmers found fault with the fungicide supplied by the contracted company in this regard. The dumping of contract-produced crop in open market led to fall in local market prices and it was being sold at Rs 3 per kg now as against a promised price of Rs 5 per kg by the PAIC. In general, across crops and regions, the CF program could not achieve the stated area goal. Not only it fell short in terms of contracted area being less than that stated by the agency, but also the farmers did not plant the entire contracted area with the contract crops. Most of the problems farmers faced related to production and quality (like quality of seed and extension) and not marketing of produce (except peas) as open market could take care of contract produce. Due to this experience, a large majority (60%) were not willing to enter into CF arrangement again. There have also been instances of corruption and malpractice in the PAFC run CF program due to conflicts of interest among implementing agencies and lack of monitoring.

It is not incidental that most of the CF projects are in the states of Punjab, Haryana, Gujarat, Maharashtra, Karnataka and Tamilnadu which are agriculturally developed states. On the other hand, vast areas of the country such as Bihar, Jharkhand, Chhatisgarh, Orissa, West Bengal, the entire north-east India and areas of Uttaranchal, Himachal Pradesh, Kerala and Jammu & Kashmir have been bypassed by CF projects. Does it mean that these areas and farmers would not benefit from commercialization and vertical integration of agriculture? These are areas with highest concentration of small and marginal farmers. This essentially means that contracting companies do not encourage the participation of those who need to be helped to participate as risk preference and innovativeness require not just attitude but also resources and risk taking capability to undertake risky crops and ventures. The aspects of contracting which contribute to CF excluding small producers are: enforcement of contracts, high transaction costs, quality standards, business attitudes and ethics like non/delayed/reduced payment and high rate of product rejection, and weak bargaining power of the small

growers. CF also reinforces reverse tenancy where in small and marginal farmers lease out land to large and medium farmers who are often contract growers for the companies as was the case in the Indian Punjab.

2.7 MAIN CONSTRAINTS IN EXISTING SYSTEM

Organized marketing of agricultural commodities has been promoted in India through a network of regulated markets owned, operated, and managed by Agricultural Produce Market Committees (APMCs). Most of the State Governments and Union Territories have enacted legislation (APMC Act) to provide for regulated markets and as on today, 7557 markets have been covered under regulation. Besides, there are 2,1731 Rural Periodic Markets (RPMs), about 15 percent of which function under the ambit of regulation. The major constraints in domestic agricultural marketing are as follows:

2.7.1 Variation in Market Fees/Market Charges

According to the provisions made in the APMC Act of the States, every market Committee is authorized to collect market fees from the licensees (traders) in the prescribed manner on the sale of notified agricultural produce brought by the farmers or traders in the market area at such rates as specified by the State Government. The number of commodities brought under the ambit of regulation varies from state to state. The market fee varies between 0.50 percent in Gujarat to 2 percent in Punjab and Haryana. The charges payable by buyers and sellers are also different. Several state governments have introduced other taxes/fees/cess/that create considerable confusion.

2.7.2 Neglect of Rural Markets

There are more than 21000 rural periodic markets which have remained outside the process of development. These markets constitute the first contact points between the producer seller and the commercial circuits. Most of these markets lack the basic minimum facilities.

2.7.3 Absence of a Common Trade Language

Different set of standards/specifications for agricultural commodities are followed by different organizations in the country. The standards laid down in the PFA Act are the National Standards. Besides this, there are Agmark Standards, BIS Standards, Standards followed by Army, Standards fixed by Warehousing Corporations and those by Food Corporation of India for procurement purposes. Traders of different commodities have got their own trade standards in different localities in the country. Thus, the absence of common trade language is a major deterrent for evolving a competitive agricultural marketing system in the country.

2.7.4 Variation in Entry Tax/Octroi and Sales Tax

The rates of entry tax/octroi tax and sales tax levied on different agricultural commodities vary from State to State which increases the cost of agricultural produce and gives distorted signals to farmers hampering production growth, and brings trade distortions. These also create hassles on the state borders causing considerable delays in interstate movement of goods.

2.7.5 Controls Under Essential Commodities Act

Though central government removed all restrictions on storage and movement of commodities, many state governments are still enforcing several control orders promulgated under the EC Act. These control orders give rise to rent-seeking by the enforcement functionaries at the border check points creating artificial barriers on the movement and storage of agricultural commodities. There has not been sufficient publicity about the withdrawal of restrictions under ECA. With the reintroduction of stocking limits recently, the situation has again become complex.

2.7.6 Other Barriers

Lack of infrastructure like storage, transportation, telecommunication, quality control, packaging, price risk management, integration of spot markets with

commodity exchanges, pledge financing through a chain of accredited storage and warehouse receipt system, cool chains, market led extension, and conducive framework for promotion of contract farming are some of the other important constraints for competitive agricultural marketing system in the country.

2.8 SUGGESTIONS FOR XI FIVE YEAR PLAN

2.8.1 Marketing System Improvement

- 1. A common problem faced in the farmers markets or the direct market systems is the infiltration of the traders or middlemen in the guise of farmers. Though identity cards have been introduced and there are periodical checks, the problem still persists in many farmers markets. There is a need to curb this malpractice through proper monitoring and penalties. The participating farmers groups could be given this responsibility as they have the highest stakes in curbing this practice.
- 2. Farmers' organizations should be assisted or helped to create basic infrastructure for their effective functioning like the case of Mahagrapes. This could even include, assistance for professional management. The active role of the government in bailing out MahaGrapes in these times of crisis and continuing to not intervene in its working is especially significant from a policy perspective. The role of the government over time has been akin to infant industry protection. The government support in the initial periods was forthcoming where without the support the ability to resume export would have been seriously in doubt. The state government stepped in and alongwith APEDA and NCDC provided financial support and subsidies to bale out MahaGrapes. MahaGrapes stands out as an encouraging example of public-private partnership that has delivered favorable outcomes for both large as well as small farmers. Ownership of MahaGrapes lies solely in the hands of the farmers; as they have collectively contributed their share in the fixed and operating costs of MahaGrapes and they also handle the governance of the firm.

However, the state initiative from institutions such as MSAMB was essential.

- 3. Cooperative marketing should not be brushed aside. The lessons from Amalsad and Gadat cooperatives should be widely publicized. In cooperatives like Amalsad and Gadat in Gujarat, the membership does not come as a free option for the members. The members are expected to deliver produce to the cooperative and loyalty is valued. In fact, in order to keep the cooperative viable and manageable, the Gadat cooperative is planning to close its membership. The limited membership may not be in tune with the principles of cooperation, but it is crucial for the financial health of the cooperative. In fact, this has been one of the factors in ensuring the viable functioning of the so called "New Generation Cooperatives" in the US and of the sugar cooperatives in South Gujarat along with other factors like value added processing, linking of producer equity and product delivery rights, sale of tradable equity shares to raise capital and efficient use of market information.
- 4. The primary agricultural cooperative societies (PACSs) should also be involved in primary value adition and marketing at the local level to gain benefits of collective bargaining and reduced cost of transport and marketing. There are 1,48,000 such PACS in India. Some PACS in Gujarat are doing this already.
- 5. There is a need to reduce the difference in market fee across market committees/states and this should be levied at single point. The variation in commission charges, sales/purchase taxes and other state specific fees/cess/taxes should also be made uniform and consignments allowed to move across state borders without hassles.

2.8.2 Contract/Corporate/Cooperative Marketing

6. Though there are concerns about the ability of the small farms and firms to survive in the changing environment of agribusiness, still there are opportunities for them to exploit like in product differentiation with origin of product or organic products and other niche markets. But, the major route has to be through exploitation of other factors like external economies of scale through networking or clustering and such other alliances like CF. The experience of CF across the globe suggests that it is not the contract per se which is harmful as a system but how it is practised in a given context. If there are enough mechanisms to monitor and use the contract for developmental purposes, it can certainly lead to a betterment of all the parties involved, especially small and marginal farmers.

- 7. Major conditions for successful interlocking between agribusiness firms and small producers include increased competition for procurement instead of monopsony, guaranteed market for farmer produce, effective repayment mechanism, market information for farmers to effectively bargain with companies, large volumes of transactions through groups of farmers, for lowering transaction costs, co-operation among genuine agribusiness firms in the area, and no alternative source of raw material for firms.
- 8. Further, for the sustainability of company-farmer partnership schemes, it is important that the company is able to successfully market its products so that farmers do not suffer from lack of market. Building of relationships of trust with farmers through company reputation rather than marketing gimmicks is crucial. This requires mutual respect, fair and transparent negotiation process, realistic assessment of benefits, long term commitment, equitable sharing of risk, and sound business plans.
- 9. Innovative pricing mechanisms like bonus at the end of the processing cycle, shares in company equity, dividends, producer's fixed price, and quality based pricing, which reward performance can help contract performance.
- 10. There are a large number of institutional arrangements to coordinate the small producers which should be assessed for their relevance and effectiveness in a given context, though a priori, it seems the cooperative and other similar forms of farmer organization are more relevant and

sustainable, especially the New Generation Cooperatives (NGCs) which are voluntary, more market oriented, member responsive, self-governed, and avoid free riding and horizon problems as they have contractual equity based transaction with grower members.

- 11. It is also important to note that farm sector problems like high cost of farming, lower returns, environmental sustainability require different kind of institutions (collectivities instead of individual enterprise) for which institutional innovations are a must. The legal system made available the new organizational option i.e. the Producer Companies (cooperative companies) under the Companies Act which farmers in many states have gone ahead with in various existing and new projects.
- 12. There have been a large number of institutional innovations in agriculture in India at the local level recently. These include the Non-Pesticidal Management (NPM) of crops especially cotton in Punnukula village in Andhra Pradesh, producer companies for organic produce in Kerala, regulation of private tubewell water prices by village council in West Bengal as a non-market based local level institution managing a local private market driven resource (groundwater), second-hand tractor markets in Punjab and cooperative tubewells by small and marginal farmers in West Bengal which have improved efficiency (lower cost) and equity in water access, and reduced reverse tenancy. These experiments point to the hidden local potential to create robust local institutions in such a crucial area of economy i.e. marketing. There is a need to allow and encourage such informal arrangements provided there are no irregularities and practices detrimental to the interest of the market participants. The role of the state in such situations should be supportive and somewhat supervisory in order to ensure the efficient functioning of these institutions which can deliver objectives of growth, equity, and sustainability. Another important aspect of these institutions is that they function fairly competitively, which is beneficial to the users of these markets as they get fair deal in their transactions.

- 13. Given the nature of modern farming involving tremendous amount of technological input and market orientation which require capital resources, it is but inevitable to involve private corporate business interests in agricultural development through CF system. Therefore, what is required is marketing extension in terms of better product planning at the farmer level, provision of market information, securing/accessing markets for farmers, provision of alternative markets and market orientation in terms of improved marketing practices at the farmer level.
- 14. Though there has been plenty of successful intermediation in primary production by state and NGOs, much more of it is needed in agroprocessing, credit, market access, information, and technology to enable small farmers to reap enhanced competitive benefits offered by freer market. Intermediation is required for small farmers to link them up with global markets in processing and marketing. In India, due to the small farm domination of agricultural sector, the delivery systems are to be attuned to the demands and needs of small farmers which are small in scale and of sporadic nature. Therefore, new institutional mechanism like groups, associations, cooperatives, New Generation Cooperatives (NGCs) and other collectivities or networks are needed to reach small and marginal producers more effectively. There is a role for the state agencies and the NGOs to intervene in contract situations as intermediaries to protect the farmer and broader local community interests. The NGOs can also play a role in information provision, and in monitoring and regulating the working of contracts. Better cooperation and coordination between companies and cooperatives for agricultural development also needs to be encouraged.
- 15. Both companies and state should promote group contracts with the intermediation of local NGOs and other organizations and institutions so that contractual relationships are more durable, enforceable, and fair. An insurance component in farming interventions is must to protect the farmer interest and it is noted that some companies are already doing it. But, the most important thing is to ensure market for the farmer produce at better price under these agribusiness projects. Government should also

play an enabling role by legal provisions and institutional mechanisms, like helping farmer co-operatives and groups, to facilitate smooth functioning of contract system, and not intervene in CF directly as seen in the case of Punjab where the experiment failed. On the other hand, the success and smooth functioning of the CF system in mint by AM Todd in the state (Punjab) with no involvement of the state, due to the nature of the crop, clear terms of the contract, ensured returns to growers by competitive prices and the commitment of the company, corroborates the point that CF is best left to the company and the growers. This was also the case in Thailand where the state facilitated it from outside with credit and extension.

- 16. Also, it is important to ensure competition in CF so that farmers have choice of options. For example, CF in gherkins in Karnataka was also successful, besides the reason of lack of local market for produce, due to the fact that more than two dozen companies operated in the state. This also helps reduce exploitation of the small growers. Further, since farmers did not put entire land under contract and cultivated only 0.5 acres under gherkin contracts on an average, they were not subject to any major risk of contract failure.
- 17. Corporate farming can also work favourably if corporate agencies resort to leasing of these lands to contract growers or provide contractual access to these lands to small and marginal farmers and landless labour, as corporate farming is unlikely to be viable. In fact, corporate farming is a double-edged weapon. It can help small farmers in better access to technology, but can also weaken their bargaining power with the company.
- 18. There is also no need to look for permanence in CF arrangements, though short or medium term sustainability is desired for availing of its effects on growers and local economy. But, as market conditions for a crop/commodity change, CF can wither away as market becomes efficient. CF as a vertical coordination mechanism is only a response to a situation of market failure and depends on commodity/crop/sector

dynamics which are liable to change anytime, especially in globalized and liberalized world. But, there are many indications that CF can continue even in the presence of competitive markets as in the developed countries or even Thailand. It is important to remember that CF is only an instrument/means to agricultural and rural development, not an end in itself.

- 19. It is difficult to police contracts due to the multiple variables involved in a farming contract like output price, input prices and supply, payments, and quality standards. Therefore, if the firm really wants to manipulate/sabotage a contract, there are dozen ways to do it. A government can not really do much to police a contract, and it should not impose contract on an unwilling firm or in an inappropriate situation. Further, the state/government may not always stand by the small growers due to the pressure from the agribusiness interests, and may suffer from the conflicting objectives of its various agencies. Since policy interventions can not really change the outcome of a fundamentally unworkable situation and the relevance of CF for small farmer development, it is better to have more realistic expectations about the policy intervention effect and define an appropriate niche for smallholder CF in terms of crops and markets. It is better to plan carefully ex ante for CF based on earlier experiences elsewhere. But, still, the state/government can play both regulatory and enabling/developmental role in CF. Legal protection to contract growers as a group must be considered to protect them from ill effects of contracting practiced by supply chains drivers.
- 20. The model contract agreement under amended APMC Act is quite fair in terms of sharing of costs and risks between the sponsor and the grower. But, it leaves out many aspects of farmer interest protection like delayed payments and deliveries, contract cancellation damages if producer made firm specific heavy investments, inducement/force/intimidation to enter a contract, disclosure of material risks, competitive performance based payments, and sharing production risks. Also, there are state level variations in the amended Acts and the spirit has been diluted. For example, in Gujarat, the amended Act makes the APMC as a party in the

tripartite contract stating the logic that APMCs have a useful role as facilitator as they have long standing relationship with farmers and can disseminate the CF concept and practice besides monitoring its practice. It makes the Gujarat State Agricultural Marketing Board (GSAMB) and the local APMC as the registering authority for contracts. The MD, GSAMB will examine the contract for its fairness to the farmers and can refuse to register the same if found inadequate in protection of the farmer interest. It is also the arbitrator in case of disputes. The registration costs is Rs 200 for the sponsor. Though the central model Act exempts contract procurement from market fee, the Gujarat Act makes it mandatory to pay the prescribed cess to the concerned APMC or in case of multi-location operations, to the GSAMB which will apportion it to the concerned APMCs. Though the monitoring role of APMC is desirable, but making it a party to the contract is totally unnecessary and undesirable as that is not the best way to protect the farmer interest, if that, at all, is the logic for giving the role of a party to the contract to the APMC in contracts between sponsors and the growers. Further, it is not known how far the model contract agreement will be adopted by the agencies unless it is conditionality to avail certain other incentives or policies.

21. The government of Punjab through PAFC has been reimbursing extension cost to the CF agencies/facilitators at the rate of Rs 100 per acre. But, doing it irrespective of the size of holding of the contract growers defeats the purpose as it does not ensure that small and marginal farmers who can not afford to pay for extension and need to be brought into the contract system are included. Similarly, the Ministry of Food Processing Industries has been providing an incentive since the beginning of the IX Plan in the form of a reimbursement of five per cent of the value of raw materials procured through CF with farmers with a maximum ceiling of Rs 10 lakh per year for a maximum of three years with the condition that any organization (private/public/cooperative/Non Government Organization (NGO)/joint venture/assisted) should work with at least 25 farmers under contract for at least three years. It needs to be continued.

2.8.3 Role of Farmers Organizations/CSOs/NGOs

22. Producers' organizations amplify the political voice of smallholder producers, reduce the costs of marketing of inputs and outputs, and provide a forum for members to share information, coordinate activities collective decisions. Producers' organizations and make create opportunities for producers to get more involved in value adding activities such as input supply, credit, processing, marketing and distribution. On the other hand, they also lower the transaction costs for the processing/marketing agencies working with growers under contracts. Collective action through cooperatives or associations is important not only to be able to buy and sell at a better price but also to help small farmers adapt to new patterns and much greater levels of competition. There is also need to strengthen small farmer organizations and provide them technical assistance to increase productivity for the cost competitive market, provide help in improving quality of produce, and to encourage them to participate more actively in the marketing of their produce in order to capture value added in the supply chain. Finally, the problem of financing the small producers needs to be tackled by finding innovative ways to provide finance.

Besides the resources and technology which determine CF performance, it is the relationship among state, companies, and farmers, which shapes formal and informal institutions and gets mediated by them, that matters. The practice of contracts needs to be monitored by farmer organizations or NGOs. In fact, the companies should proactively involve NGOs into their CF operations and even organize farmer cooperatives or groups for more sustainable CF programs. The groups or farmers' organizations like cooperatives not only lower transaction costs of the firms but also lower input costs for the farmers and give them better bargaining power as was the case of a potato growers' cooperative in north Thailand which acted as a link between the growers and the company.

2.8.4 Others

23. The state and development agencies need to internalize the fact that increasingly product markets will mean supermarkets. Therefore, marketoriented programmes and policies will indeed be supermarket oriented. If, in a given country, a few chains command majority of the food sector, then development policies and programmes need to learn how to deal with this handful of big companies. The development agencies also need to realize that small farmers and entrepreneurs have to gear up quickly to compete in the new markets that are spreading over most of the food economy. The local market niches are disappearing and the distinction between global and domestic market is getting blurred. The government and the donors will have to focus their programmes not just on exports but also on the growing local supermarkets. It is important to promote good business practices that optimize retailer-supplier relations, protecting both sides. This can be initiated by establishing or improving contract regulations and business rules of practice some of which are already available in the form of legal acts in the US and Argentina. These practices can also be forced by private sector codes of practice. Regulation of supermarket chains to control or mitigate their market power can be a potential tool to ensure the presence of small growers in value chains as seen in the case of banana trade regime in pre-WTO period in the EU policy, single channel (monopoly) exports by producer bodies in some exporting countries like South Africa, and regulation of domestic import markets in France. However, regulations do not ultimately change the economic forces under which the supermarkets operate and the changes in procurement systems are driven by these forces. These changes and the basic requirements they impose on growers are conditions which will have to be met if the growers are to be able to tap the powerful market of the supermarkets. Therefore, it is crucial that government and donor agencies help small farmers and entrepreneurs to make the investments in equipment, management, technology, commercial practice and the development of strong and efficient organizations to meet those requirements.

CHAPTER 3

STATUS OF AGRICULTURAL MARKETING INFRASTRUCTURE (PHYSICAL AND INSTITUTIONAL)

3.1 RURAL PRIMARY MARKETS

Rural Primary Markets include mainly the periodical markets known as haats, shandies, painths and fairs which are estimated to more than 21,000 to a maximum of 47,000 in the country. These are located in rural and interior areas and serve as focal points to a great majority of the farmers – mostly small and marginal for marketing their farm produce and for purchase of their consumption needs. These markets, which also function as collection centres for adjoining secondary markets, are devoid of most of the basic needed marketing facilities. The commodities collected in these markets find their way to the wholesale assembling markets in the process of movement to consumers.

Provision of rural infrastructure at a level that will allow the development of a strong and productive agricultural sector is sine-qua-non for development of agrarian economy. In rural and tribal areas, a weekly market is the first link in the marketing channel for a small/marginal and tribal farmers and the price they receive at this market constitute their cash income. It is estimated that 90 percent of the total marketable surplus in the remote areas is sold through these markets. Improving efficiency of this grass root level market outlets will facilitate proper price formation, minimize costs and pave way for introduction of innovations. A weekly haat is also a place where majority of the population buy their daily necessities such as soap, shoes, clothes, utensils, and agricultural inputs. Social information is exchanged in these markets along with settlement of marriages.

Number of studies has shown that the efficiency of rural markets is poor due to number of problems, such as the high degree of congestion at market yards, less number of traders and non-availability of supporting services. This, in turn, affects the market turn over. The efficiency of rural assembly markets, as a link in the marketing chain have positive impact on types of crops to be grown and resource allocation by agricultural producers.

Normally the programmes designed for development of Rural Primary Markets (RPMs) especially tribal markets emphasize increase in agricultural production assuming that increase in production will automatically increase their incomes. Experience has shown that increase in production may be a necessary condition, but certainly not a sufficient condition to increase farmers' income. As the tribal development envisages improving the quality of life and level of living standards by increasing their income, improvement in market outlets constitutes its integral part. Yet, very little efforts have been made by the government agencies/market authorities to develop rural tribal markets/weekly haats/ shandies. A programme designed to increase tribal's income and purchasing power through a competitive market network is a much more forceful tool for direct attack on poverty alleviation.

A well planned and efficiently operated market is the nucleus of rural growth center in rural and tribal areas. Farmers wish that their produce, once brought to the haat is sold quickly at higher price with the minimum market charges, without any malpractices in trading. With requisite technical support, weekly Haats and Shandies can also be used for effective credit delivery, input marketing, procurement and other socio-economic activities. By bringing such services to the rural and tribal haats, rather than waiting for the people to come, much more effective services can be provided. Under the changed economic environment, rural and tribal markets can be a financially self-supporting unit and a source of income to finance for further developmental infrastructure.

Rural Primary Markets play a very vital role in marketing of produce, particularly of small and marginal farmers including landless labourers. Rich farmers with higher surpluses generally take their produce to nearby wholesale assembling markets. At times, they purchase surpluses from other small farmers and carry the same along with their produce to the assembling markets for disposal. The

small cultivators with limited surplus find it uneconomical to go to wholesale assembling markets located at long distances from their villages.

The number of primary rural markets in the country is more than 21,000. According to the report of Marketing and Research Team (MART), New Delhi on Traditional Haats and Melas in India, a study sponsored by the Ministry of Rural Development during 1995, it is estimated that there are 47,000 Haats of which 75 percent are held once a week, 20 percent twice a week and 5 percent are held daily. The study indicates that, on an average, one haat caters to approximately 14 villages. The relationship between the distribution of villages according to population or range and the availability of haats, smallest villages (population less than 500) held the fewest haats (only 1.6%). Majority of haats (47.9%) are held in big villages (those with a population of over 5000 persons). The study reveals that nearly 2/3rd of the haats are held at a distance of 16 kms, 23 percent are held at 6 to 15 kms distance and 9 percent within a distance of 1 to 5 kms. The amenities and facilities available in these haats are far from satisfactory.

In the study, it was observed that 50 percent haats were organised by the panchayats or town administration. The majority were managed by private parties or Krishi Utpadan Bazar Samities (KUBs) in Bihar and regulated market committees (RMCs) in Orissa. Every participant has to pay market tax or fee to sell goods at the haat. The fee is determined either on the basis of quantity of produce sold or type of commodity and selling space used. The rates of fee vary from Rs 0.50 to Rs 25. The private contractors are not interested in investing money in providing infrastructural facilities in these markets as their lease is valid for a limited period of one year only. Significant number of buyers (36%) particularly from nearby villages walk to the haats. The standards weights and measures are not used at these haats. The exploitation of illiterate tribals/farmers by traders through willful miscalculation and over charging is a common phenomenon.

Very little efforts have been made so far by the government agencies/market authorities to develop the rural primary markets. Only 15 percent of these

markets have been brought under the ambit of regulation. During 1972-73, a Central Sector Scheme was initiated to provide central assistance for the development of selected wholesale regulated markets in the country. This scheme was further extended to cover different categories of markets in command areas, commercial crops producing areas and terminal markets for fruits and vegetables. Another scheme for development of primary markets was launched during 1977-78 to serve the interests of small and marginal farmers. In the light of experience gained in operating these schemes, these were integrated into a single scheme in 1988-89 and termed as 'Scheme for Development of Agricultural Produce Markets' with the objectives to help the States/UTs for creating infrastructure facilities in the market yards.

Under this scheme, an amount of Rs 93.30 crore was provided to the States/UTs for development of 3658 markets covering 855 principal markets and 2803 Rural Primary Markets. As a sequel to the general decision of the National Development Council, the scheme has been transferred to the States/UTs from 1st April, 1992. However, the High Power Committee constituted by the government of India in 1992 studied the impact of the scheme and recommended that the Central Sector Scheme for providing grants-in-aid to the State Governments for development of basic infrastructure facilities in agricultural markets should continue and remain with the central Government for effective implementation and monitoring.

3.2 THE WHOLESALE/ASSEMBLING MARKETS

The Wholesale/Assembling Markets or the secondary markets numbering 6359 constitute the cardinal link in the market structure of the country. Although better organized than the rural primary markets, these markets present divergent picture with regard to facilities offered and services provided. Most of these are located in the district and taluk headquarters, important trade centres and nearby railway stations and perform assembling and distribution functions. In most of these markets, a large number of commodities is traded. Specialized single commodity markets are not many except few markets for cotton, jute, oilseeds, fruits and vegetables. The layout of most of the secondary markets is

inconvenient and unsatisfactory. The business is conducted according to market practices established by age old customs, or as per the regulations of APMC wherever regulated. These markets play an important role in determining the prices of agricultural produce assembled there and as such have a governing impact on terms of trade between agriculture vs. other sectors of economy. The users of these markets (buyers or sellers) have to pay fee to the managers of the market places. Facilities in the places vary extensively. Nearly 2/3rd of market yards and sub yards were laid out initially on vast land area with such facilities as auction platforms, shops, godowns, rest houses and parking land. However, studies have shown that facilities available in these yards are considerably short of the requirements and also most of them have become congested.

3.3 REGULATION OF MARKETS

Over the years, to achieve an efficient system of buying and selling of agricultural commodities, most of the State Governments and Union Territories enacted legislations (Agricultural Produce Marketing (Regulation) Act (APMR Act) to provide for regulation of agricultural produce markets. Most of the wholesale markets and some of the rural primary markets have been brought under regulation. Agricultural Produce Market Committees constituted as per APMR Acts manage the markets. Many of the regulated wholesale markets have a principal market with large area and relatively better infrastructure and number of subyards attached to the principal market. The establishment of regulated markets has helped in creating orderly and transparent marketing conditions in primary assembling markets. Further, increase in the number of regulated market yards, from a meager 286 at the time of independence to 7557 in year 2005, has helped in increasing the access of farmers to such orderly market places. These regulated markets (7557) consist of 2428 principal markets and 5129 sub yards. Some wholesale markets are outside the purview of the regulation under APMR Acts.

This development, coupled with construction of approach roads and roads network linking primary markets with secondary wholesale and terminal markets, also improved the process of price discovery at the primary market level where most of the small farmers dispose off their produce. Increase in access of farmers to market places, apart from reducing transaction costs of farmers has helped the small farmers having low-marketed surplus and are not able to transport their surpluses to long distances. Though precise data on the proportion of benefits of regulated markets going to the small and marginal farmers are not available, there is evidence to show that expansion of such physical infrastructure in rural areas has helped small and marginal farmers more by increasing their access to the markets. During 1992-93, agricultural commodities worth Rs 62,000 crore were traded in these regulated wholesale markets, which account for about 43 percent of the value of marketed surplus.

However, this does not mean that everything is fine in all the regulated markets of the country. The facilities created in market yards continue to be inadequate. The cleaning, grading and packaging of agricultural produce before sale by the farmers have not been popularized by the market committees on a sufficient scale. Even facilities for these have not been created in most of the market yards. The institution of State Agricultural Marketing Boards was created for expeditious execution of the market development work. So far 25 States and two UTs (Delhi and Chandigarh) have established Agricultural Marketing Boards in their respective States/UTs. Out of these 27 States/UTs, in A.P. the SAM Board has been established with only advisory functions under the provisions of the market rules. Although the purpose of establishment of State Agricultural Marketing Board is almost the same in all the States where Statutory Boards exist; a broad variation has been observed in their composition/constitution and functioning. It is necessary to bring more uniformity in powers and functions of Boards and demarcations of activities between the Directorate of Marketing and State Agricultural Marketing Boards. This can facilitate proper regulation of marketing practices as well as building more infrastructure facilities so as to achieve a faster growth and better private participation.

The number of regulated markets is relatively more in geographically larger states viz. Andhra Pradesh, Bihar, Maharashtra, Madhya Pradesh, Uttar Pradesh and West Bengal. These six States account for 53 percent of total regulated

markets in the country. However, some of the regulated markets are nonfunctional, as actual transactions do not take place in their market premises, but market fee is collected by the APMC at designated check posts. In such cases, it is more of a fee collection activity rather than providing marketing functions. The States of Punjab and Haryana though geographically small, have a large number of regulated markets owing to sizeable quantity of surpluses of rice and wheat. These two states account for 9.5 percent of the total regulated markets in the country.

The area served by each regulated market across the States reveals large variation. The area served per regulated markets varies from 115 Sq. Km in Punjab to 11215 Sq. Km in Meghalaya. On an average, a regulated market serves 435 Sq. Km area in the country, which is guite high. Farmers have to travel long distances with their produce to avail the facility of regulated market. The National Commission on Agriculture (1976) and National Commission on Farmers (2004) have recommended that the facility of regulated market should be available to the farmers within a radius of 5 Km. If this is considered a benchmark, the command area of a market should not exceed 80 Sg. Km. However, in the existing situation, except Delhi and Pondicherry, in no State/UT, the density of regulated markets is even close to the norm. The area served per market yard is as high as 7096 Sq. Km in Sikkim, 1465 Sq. Km in Himachal Pradesh, 940 Sq. Km in Uttaranchal and 823 Sq. Km in Rajasthan. The studies have shown that increase in the density of market has a positive impact on agricultural productivity. The targeted norms can be broadly achieved if the remaining wholesale markets and rural periodic markets are developed as regulated markets.

Area served by the market may not be a right indicator to assess the optimum density of the markets, because the non-crop area which gets added to this indicator may not require a market. Therefore, the gross cropped area served by each market can be taken as useful indicator for assessing the density of the markets and adequacy of number of markets in a state. As per this criteria, the State of Punjab has one market for 18,000 ha of gross cropped area. Similarly, one market exists for every 13,580 ha of gross cropped area in West Bengal, 15380 ha in Andhra Pradesh, and 37,050 ha in Madhya Pradesh. According to

this information, it can be presumed that one market for every 15,000 to 18,000 ha of gross cropped area will be optimum so as to meet the requirements of the farmers. This, however, depends on the number of functional regulated markets in a state. For example, though the regulated markets are shown as 889 in Andhra Pradesh, about 500 markets are either non-functional or very little transactions occur in those markets. Though, the indicator of gross cropped area per market will give more realistic indication of the adequacy of markets in a state, the actual requirement will have to be assessed based on the field study, depending on the cropping pattern, seasonality, and production of crops. For example, the market arrivals are maximum during the wheat harvesting season in Punjab as at that time the market infrastructure and the market density may appear to be highly inadequate, requiring opening up of collection centres/sub-yards. However, after the season there may be little activity in these sub-yards.

The benefits available to the farmers from regulated markets depend on the facilities/amenities available rather than the number of regulated markets in the area. Both covered and open auction platforms exist in two-thirds of the regulated markets. One-fourth of the markets have common drying yards. Traders modules viz. shop, godown and platform in front of shop exist in 63 percent of the markets. The cold storage units exist in only nine percent of the markets and grading facilities exist in less than one-third of the markets. The basic facilities viz., internal roads, boundary walls, electric light, loading and unloading facilities and weighing equipment's are available in more than eighty percent of the markets. Farmer's rest houses exist in only half of the regulated markets.

The comparative status of regulated markets and area served by them is depicted in Figure 3.1. The state-wise comparison of market density according to population, geographical area, and gross cropped area is given in Figure 3.2.

Figure 3.1



Figure 3.2



3.4 GRADING INFRASTRUCTURE

Grading at primary market level is grossly inadequate. There are only 1968 grading units at the primary level, which include 587 units with cooperatives and 298 units with other organizations. At the level of regulated markets, there are only 1093 grading units in 7557 regulated market yards/sub-yards. Only around seven percent of the total quantity sold by farmers is graded before sale. During 2004-05, 6.62 million tonnes of agricultural produce and 26.1 crore pieces valued at Rs 6224 crore were graded at primary market level. Due to lack of proper handling (cleaning, sorting, grading and packaging) facilities at the village level, about seven percent of foodgrains, 30 percent of fruits and vegetables and 10 percent of spices are lost before reaching the market.

3.5 TERMINAL MARKETS

Terminal markets which have become an important feature in developed countries, is expected to gain ground in India. The Safal complex of NDDB is one such format, located at Bangalore. They are expected to be located nearer to big cities and terminal points providing the final link in the market structure. The sellers are usually the traders and not the growers in these markets unlike the primary and secondary markets. The terminal market concept promoted in India is expected to link the farmers to these markets directly through collection centres. Government of India has announced to set up eight terminal market complexes for perishables at Nagpur, Nashik, Bhopal, Kolkatta, Patna, Rai, Chandigarh and Mumbai during 2006-07. The proposed terminal market complex will be in "hub and spoke" format, with terminal market as "hub" and collection centres near to the production areas as "spoke". The terminal markets are expected to reduce post harvest losses and increase farmers' realization.
3.6 RETAIL MARKETS

Retail markets are an assembly of retail shops centralized and located at a specific place or in a building constructed for the purpose. Retail markets handling food items are the most active elements in the food distribution chain, particularly low and middle income consumers. They serve the needs of inhabitants in a particular locality. Directly serving the common man, they constitute last links in the marketing chain. Millions of retailers are involved in the task of providing food items through retail markets to the consumers in the country. The "MOM and POP" stores are popular in the country as they provide food produce at the next door of the consumer. In recent times, there is tremendous interest in setting up of retail chains for food items including fresh produce. Number of private corporates is jumping into this area and it is expected to revolutionize the system of handling of agricultural produce.

3.7 STORAGE

Three tier system exists in storage viz. at the National/State, district and village level in the country. The Central Warehousing Corporation (CWC) has been providing warehousing facilities at the centres of All India importance and the State Warehousing Corporations (SWCs) and the State Governments at centres of States and district level importance. Cooperatives are providing storage facilities at the primary and marketing societies level, which are located at village/taluka. Financial assistance was provided to various States for construction of Godowns at the rural level under the scheme of National Grid of Rural Godowns, which stands transferred to State Governments with effect from April 1, 1992. The Food Corporation of India (FCI) constructs godowns for storage of food grains procured by it for distribution and buffer stocking. It constructs storage capacity at certain nodal points, keeping in view its requirements. The Central Warehousing Corporation constructs/creates storage capacity for FCI as well as for the general warehousing.

3.7.1 Public Sector Storage Capacity

About 30 percent farm produce is stored under open condition, leading to wastage and distress sales. If the consumption level shoots up from current 100 gms of fruits and 200 gms of vegetables per capita per day to the recommended dietary level of 140 gms and 270 gms respectively by 2010, the domestic market for fresh fruits and vegetables could be as large as Rs 50,000 billion at present price structure. However, this would require commensurate supply chain infrastructure in terms of handling, storage, and transportation. Post harvest stocks stored in public warehouses is estimated to value at Rs 935.67 billion of which 12 percent gets wasted due to lack of quality storage. Preventable post-harvest losses of foodgrains are estimated at about 20 million tonnes a year, which is nearly 10.5 percent of the total production.

The scheme of warehousing was initiated at the center and state level after the enactment of the Agricultural Produce (Development and Warehousing) Corporation Act, 1956. The State Government also enacted the Warehousing Acts during July 1957 to August, 1958. The Government of India bifurcated the Warehousing Act of 1956 in to the National Cooperative Development Corporation Act 1962 and the Warehousing Corporation Act of 1962. Over a period of time, sizable scientific storage/warehousing capacity has been developed by various agencies and they have plans to increase it further. The total covered capacity available with FCI for storage of foodgrains including the capacity hired from CWC and SWC was 252.96 lakh tones as on June, 2006. The hired capacity with the FCI was 101.59 lakh tonnes. In the Tenth Five Year Plan, FCI and CWC have proposed to construct additional storage capacity of 6.42 lakh tonnes and 9.37 lakh tonnes respectively, with a total proposed capacity of 15.79 lakh tonnes. The details of storage capacity constructed by these agencies during the X Five Year Plan are given in Table 3.1.

The total storage capacity available with different public sector agencies is 78.83 million tonnes. In the cooperative sector, NCDC has assisted in creation of 13.73 million tonnes storage capacity with the rural cooperatives. In addition, a capacity of 16.6 million tonnes has also been created under Rural Godown Scheme.

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Table 3.1

					•	-
Agency	2002-03	2003-04	2004-05	2005-06	2006-07	Total
					(Proposed)	
FCI	0.94	1.32	0.97	0.23	0.21	3.67
CWC	3.59	2.98	1.17	2.76	5.90	16.40
Total	4.53	4.30	2.14	2.99	6.11	20.07

State Capacity by FCI and CWC during X Plan

(Lakh tonnes)

Source: Department of Food and Public Distribution, Government of India

3.7.2 Storage and handling of Food grains – National Policy 2000

The National policy on Handling, Storage and Transportation of Foodgrains (2000) aims to harness efforts and resources of public and private sectors, both domestic and foreign, to build, operate infrastructure for bulk handling, storage and transportation of foodgrains in the country. Under the National Storage policy, the bulk grain handling facilities would be created on the BOO basis at identified locations in the country. Accordingly, the Department of Food and Public Distribution has sanctioned for creation of silo storage and bulk handling on a BOO basis for meeting the requirements of FCI. The private entrepreneur has been provided with guaranteed storage utilization by FCI. This facility is first of its kind in India.

In traditional storage method, the grain is stored in bags without cleaning and drying. In Silos grain is stored as bulk. Before grain is stored in the silos, the grain is cleaned, and dirt, dust and other impurities are removed. Similarly, in case of wet grain it is dried to certain moisture level if required. First in first out principle of storage is maintained in silos, as against in godowns the first gunny bag is stacked at the bottom and the last one is stacked at the top. While removing, the gunny bag placed at the last is removed first.

The components of Silo storage system are as follows:

- (a) Receiving plat form with hoppers
- (b) Grain cleaner

- (c) Silos and Silo accessories
- (d) Grain conveying equipment
- (e) Motor Control centre
- (f) Auto weigning and bagging system

3.7.3 On Farm Storage

Of total production, about 60 percent is retained and stored by the farmers for consumption and use as seed, feed and payment of wages to labourers. Only 40 percent is marketable surplus which is handled by traders, cooperatives and government agencies. With the advent of improved agricultural technology, the farmer can afford to store the grain for longer periods. Comparatively, higher quantities of grains stored by farmers and traders are not on scientific basis and hence the extent of loss is on the high side. At rural level, grains are stored mostly from three months to two years depending upon the need. Post-harvest losses occur both in terms of quantity and quality. Grain during storage is attacked by insects, rodents, birds and micro-organisms. Apart from this, grain is contaminated by the excreta of the insects and hairs and pellets of rats which lead to consumer hazards. The grains are stored mostly in rooms as bulk storage, which is prone to extensive damage by rats and insects. Most farmers stores foodgrains and oilseeds in gunny bags of different capacities with or without inside plastic lining: mud bins having 100-1000 kg capacity, baked earthen containers of 5-100 kg capacity; in heaps on flat floor in the corner of houses ranging from 100-1500 quintals; bamboo structures; wooden bins and underground structures. These are not scientific ways of storing food grains and thus, 5-10 percent losses in quantitative terms are incurred during storage period of 3-8 months, especially during rainy season. Metals bins are one of the best storage facilities available with varying capacity. The bin (GI sheets of 240 cm length and 120 cm width of 18 or 20 gauge) having a capacity of 2 quintal, costs about Rs 1000. The Indian Council of Agricultural Research through its network of coordinated research projects, research institutions and agricultural universities has developed large number of improved rural storage technologies for minimizing the storage losses. This includes, designing of storage structures like Pusa Bin, Pusa Kothar, and PKV Bins, which can be used for storage of food grains by the farmers at village level.

3.8 COLD STORAGE

India produces around 11 percent of worlds' vegetables and 9 percent of worlds' fruits. Presently all horticulture crops put together cover approximately 7 percent of the cropped area of the country. The present marketing system of agricultural produce in the country, particularly for fruits and vegetables, lacks systems approach. Producers sometimes fail to realize expenses incurred on transportation of fruits and vegetables to markets, let alone the cost of production and capital investment, during the period of glut. Fruit and vegetable growers are receiving only a small part of price paid by the consumers as lion's share is either lost in the marketing chain or taken by the middlemen. The profit margin of intermediaries is disproportionate to their services. There is also considerable loss and wastage due to inefficient handling, transportation and storage methods. It is estimated that as high as 25 to 30 percent losses occur in different perishables depending upon the type of produce, the season and length of journey. The lower returns to the farmers act as disincentive for higher production. Thus, to extend the shelf life of fruits and vegetables, cold storage and cold chain system is essential. Cold Storage has been largely adopted for long term storage of potato, orange, apple. etc. The cold chain concept is employed for high value crops like grapes, pomegranates, flowers, seasonal and perishable nature of potatoes, other vegetables and fruits. The provision of adequate storage, under scientifically controlled conditions, is one such mechanism which could ensure that a crop harvested over a period of one or two months meets a year round market demand. The role of cold storages/storages in cutting down of losses due to spoilage, avoiding gluts and distress sale by grower's, reducing transport bottlenecks at the peak period of production, and maintenance of quality of the produce cannot be under estimated. Since the production of potato is usually bulked between December and March, the consumption needs and seed requirements for rest of the year have to be met out of the stored stocks. This obviously leads to a situation which is characterized by:

- (a) Crashing of prices during the peak season which forces the growers, particularly the small & marginal farmers, to dispose of stocks at a price which sometimes may not even cover the cost of production;
- (b) Wide price disparity between peak and lean period arrivals sometimes ranging upto 100-150 percent;
- (c) Control of the market by such traders and agents who command large cold storage capacity spread over different states and thus regulate the flow of supply to different markets; and
- (d) The erratic price and arrival pattern leads to discouragement of farmers who have taken up this crop for cultivation. Lack of adequate cold storage accommodation makes this decision almost inevitable.

With this background, the only suitable option to tide over the problem caused by seasonal surpluses is to undertake expansion of cold storage capacity and integrate it with a sound marketing system.

The sector-wise and commodity-wise break up of cold storage capacity as on 31/12/2005 is as given in Table 3.2 and Tables 3.3.

Table 3.2

Sector-wise Availability of Cold Storage Capacity

Sector	Number	Capacity (lakh tonnes)				
Private	4243	185.32				
Cooperative	394	9.75				
Public	125	0.82				
Total	4762	195.89				

Table 3.3

Commodity	Number	Capacity (lakh tonnes)
Potato	2806	160.28
Multipurpose	1080	32.32
Fruits & Vegetables	126	0.51
Meat & Fish	456	1.83
Milk & milk products	209	0.79
Others	85	0.16
Total	4762	195.89

Commodity-wise Availability of Cold Storage Capacity

3.9 COMMODITY FUTURES AND FORWARD MARKETS

Commodity futures trading in India had been revived during the last five years. With effect from April 1, 2003, futures trading in 54 agricultural commodities have been permitted. Futures are traded through 24 recognized exchanges, of which three have been recognized as national commodity exchanges. These are NMCE, Ahmedabad (w.e.f 10/1/03); MCX, Mumbai (w.e.f 26/9/03); and NCDEX, Mumbai (w.e.f. 20/11/03). These three exchanges have 1500 members and 800 agents spread over 400 centres and account for 94 percent of the total commodities futures trade in India. After the promotion of national multi commodity exchanges, there has been a rapid growth in the value of futures trade. It increased from Rs 34495 crore in 2000-01 to Rs 571759 crore in 2004-05. Out of the total trade during April-September 2005, agricultural commodities traded in futures exchanges are guar seed/gum, gram, soya oil, sugar, raw cotton, gur, castor seed, rubber, wheat, rice and other oilseeds/edible oils.

Futures trading being a risk-mitigating instrument both for buyers and sellers, it requires a conducive and effective regulatory mechanism. Current policy initiatives include amendment in FCR Act for granting more teeth to the Forward Market Commission (FMC) for effective regulation. A Bill to this effect has been placed before the Parliament. In addition, three other measures, being pursued at different levels, are quite critical in taking the advantages of futures trade to the farmers. These are (a) overhauling of Essential Commodities Act (ECA) and

food related laws; (b) strengthening of marketing infrastructure particularly warehouses, grade standards, and warehouse receipt system; and (c) a network of outlets to disseminate futures prices, along side the spot prices, to the farmers.

3.10 CENTRES FOR PERISHABLE CARGO (CPC)

Major problems faced by the Indian exporters of perishable products relate to the poor and inefficient handling of the perishable commodities at the cargo centres resulting in poor quality of products reaching the international markets. It hampers the export performance and also damages the image of Indian goods in the international market. During summers, when temperature cross 35 degrees Celsius, the handling is inefficient and palletisation procedure is slow resulting in spoilage of perishable commodities. The documentation procedure is also cumbersome and time consuming. This necessitates more efficient and wellequipped cargo centres for perishable commodities. The improved and wellequipped centre for perishable cargo is an important platform in the supply chain of horticultural products from the farms to the international markets and ultimately to the consumers. The APEDA has established six CPCs at Bangalore, New Delhi, Chennai, Thiruvananthapuram, Hyderabad, and Mumbai of varying capacities. The total handling capacity at these six CPCs is 2.16 lakh tonnes per annum. The operating and ground handling agencies have been designated for each CPC. The prescribed charges for users vary from Rs 0.35 per kg to Rs 2.29 per kg.

In addition, APEDA has signed MoUs for setting up of CPCs at Cochin, Ahmedabad, Amritsar, Kolkata, Bogdogra, Lucknow, and Goa. As an interim measure, APEDA has provided walk-in type cold rooms at Kolkata, Agartala, Guwahati, Lucknow, Coimbatore, and Ahmedabad.

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3.11 AGRI EXPORT ZONES (AEZS)

The importance of agri export zones can hardly be over emphasized. Already 60 AEZs have been notified in different states for specific commodities including basmati rice, fruits, vegetables, flowers, spices, wheat, vanilla, tea, coriander, cumin, sesame seed, cashewnuts and potato. The estimated investment varies from Rs 3.5 crore to Rs 212.65 crore which will be shared by the centre, state governments and private entrepreneurs in varying proportions. The present approach of diffused operation of the AEZs should be reviewed and provide for convergence of fund flow of various schemes, farmers can benefit from AEZs only if they organize into groups and are linked with players in AEZs directly or through contract farming arrangements. During the last six years, AEZs could not attract targeted private investment mainly doe to lack of public investment and diffused definition of AEZs (whole district is defined as AEZ).

3.12 FARM ROAD INFRASTRUCTURE

The Indian road network is the largest in the world aggregating 3.32 million kilometers, consists of 65,569 km of National Highways, 1,28,000 km of State Highways, 4,70,000 km of Major District Roads and 26,50,000 km of other District and Rural Roads. National Highways account for only 2 percent of the total length of roads, but carry about 40 percent of the total traffic across the length and breadth of the country. Though the main road network is important for movement of agricultural produce, the more crucial part of bringing the produce from the field to the transport point is more often ignored. Even the programmes of rural road connectivity mostly concentrates linking the villages, which is no doubt, important. From the farmers point of view, the farm roads that facilitate transportation of farm produce from fields to the collection centre/mandi are very vital. Providing farm roads will help in transportation of the farm produce without loss of time thus protecting the quality of the produce, which is very crucial factor in perishables. The farm roads and other road network also affect the quality of the perishable produce. Since, handling of the perishables is still in primitive stage i.e. more often stuffed in gunny bags, or tightly packed in the baskets and staked one above the other, the quality of the road decide the extent of the damage to the produce. The recent developments in packaging has no doubt provided protection to the produce especially fruits like apples, but majority of fruits are still out side the purview of proper packaging.

Public investment in rural roads, by increasing rural connectivity, can have a significant impact on access to markets by farmers, the development of supply chains, and overall marketing efficiency in addition to other beneficial impacts on rural households. Various studies of rural road investments found reduction of poverty by 5-7 percent through lower input and transportation cost, higher agricultural production and output prices, and higher wages. They further reveal that the rural road investments contributed 36-68 percent reduction in transport expenses, 27 percent increase in agricultural wages, 5 percent decrease in fertilizer costs, and 4 percent increase in output prices.

3.13 MARKET INFORMATION INFRASTRUCTURE

The system of market information has continued to be far from satisfactory. While the traders and processors use their own informal sources, farmers depend both on formal and informal sources. Though, both market news and market intelligence are equally important but farmers are more interested in market news. Market news of interest to farmers is collected/compiled by APMCs, SAMBs, State Departments of Agricultural Marketing, field staff of Directorate of Economics and Statistics and Department of Food. The information is disseminated through display boards in market yards, by announcements during open auction by newspapers, radio broadcasts and TV channels. Farmers also gather information through personal contacts with other farmers and traders. However, the market news is able to provide only a broad overview to the farmers due to several defects in the system. The price quotations are not backed by grades and the information is available with considerable time lag. This information is not linked to local grade standards. Quite often, a range of prices is made available, which is of little use to farmers. There is also a serious misconception about the buying and selling price, which are distinctly different. However, developments in information technology have opened new opportunities for dissemination of real price information across the country. Agmarknet, a public portal connecting 2900 markets all over the country and display of information of about 400 commodities on daily basis is the most successful intervention in this area. An amount of Rs 35 crore has been spent during X Plan period.

3.14 LIVESTOCK MARKETS

India is world's largest milk producer and is the fifth largest country in egg production. The Dairy sector has a potential to employ 4.2 crore of people. The poultry industry is showing growth rate of 15 percent per annum consistently. Meat production in the country is rising and has reached a level of 5.69 million tonnes per annum. As a component of the agricultural economy, the livestock sector may become the most significant component in the days to come.

The production of livestock products is through an extensive, multi-locational system which keeps million of farmers occupied, but limits the productivity to meet only the domestic demand and enable sale of the surplus to the nearby market at the earliest as they are perishable and cannot be kept long without cooling facilities. Marketing of cattle is a big business for the farmers and animal dealers. There are more than 1300 livestock markets in 11 States. These markets are generally held in open space in melas/haats. Amenities and facilities available in these haats are far from satisfactory. Most of these markets are under APMCs. However, the trade practices of livestock markets are not yet fully regulated in most of the States.

A study conducted in Haryana reveals that from 280 cattle fairs organised by Panchayat Samities or Zila Parishads, an annual income of Rs 130 lakhs is earned by the State Government. In these markets, livestock are either purchased or exchanged mainly consisting of draught animals such as bullocks, calves and camels. The market charges levied per animal are 4 percent of the sale price and is collected as registration fee from the buyer. Beside this, a fee of Rs 2 to 5 per animal is charged from the seller. In addition to this, a fee @ Rs 15-25 for issuing license to a broker is charged and a toll tax of Rs 5 per animal is charged for an

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animal transport vehicle. So far as the amount of expenditure by the cattle fair authorities is concerned, generally the organizing authority is permitted to incur an expenditure equivalent to 10 to 20 percent of the total revenue accrued to the government. It is evident that there is high incident of market charges without providing proper infrastructural facilities and services in the livestock markets.

The issues associated with the current state of livestock markets are:

- Markets are primitive, with no facilities for weighbridges, ramp facilities for loading and unloading, feeding and watering.
- There are no separate markets for different species of animals.
- Transactions could be direct under private arrangement or through brokers/commission agents, or through auction. However, there is no licensing of merchants, brokers or suppliers, transactions are also taking place under cover (Hatha) system leading to non-transparent pricing.
- There is no veterinarian support available to certify animal health in the livestock markets.
- Marketing margins amount to 30% of the consumer price in wholesale livestock markets.
- The market revenue not utilised for upgradation of facilities, but is diverted for other purposes.

Livestock markets need to have adequate facilities for animals and men (water, shelter etc.) and should provide veterinary support too. The transactions need to be undertaken in a fair/transparent manner. This requires stringent guidelines on:

- Animal welfare.
- Design of the proper auction/sale methods (registration of the intermediaries must be compulsory).
- Procedure of identification of the animal and availability of veterinary certificate for the same.

3.15 POULTRY AND LIVESTOCK MEAT MARKETS

India is the world's largest producer of indigenous buffalo meat, second highest in indigenous goat meat production, fourth highest producer of hen eggs and fifth highest producer of indigenous chicken and duck meat. Livestock production is an integral part of crop farming and contributes substantially to household nutritional security and poverty alleviation through increased household income. Returns from livestock on small and medium holdings are larger and highly sustainable. The progress in this sector results in more balanced development of the rural economy and improvement of economic status of poor people associated with livestock.

3.15.1 Slaughter Houses

Poultry meat is the fastest growing animal protein segment in the country. It has grown at a CAGR of 11 percent during 1991–2003 from a production base of 4.20 lakh metric tonnes broiler in 1991 to a production of 15 lakh metric tonnes in 2003. The poultry industry output is valued at over INR 120 bn (USD 2.5 bn), with production of 1.5 million tonnes of broiler meat and 39 million eggs in 2003. A large share of the industry is unorganised. There are 4030 slaughter houses in the country, most of them do not have adequate storage facilities of raw meat. These slaughter houses need to develop their own cold storage facilities and private entrepreneurs should be encouraged to install cold storages adjacent to slaughter houses. At present, only two modern abattoirs are set up by Bombay Municipal Corporation at Deonar and M/s Brooke Bond India limited now taken up by M/s Alana Group at Ahmedabad. During the last couple of years, integrated organised players have emerged in the Indian market. The integrated players have the cost advantage due to less intermediation in the system. Some of the players have started their own distribution set up and retail outlets. This system

is advantageous in terms of higher hygiene standard and lower and stable price over the presently available wet market system.

3.15.2 Unorganised Slaughtering

Most cities in India have banned street side slaughter of large animals. These animals are slaughtered in authorized slaughter houses and the meat is sold through licensed wet market shops. However, in the case of poultry and other small animals, most municipalities (with the exception of Delhi) permit slaughter of poultry within their municipal limits. Slaughter takes place at different shops across the city (about 2000 in Mumbai) although these shops do not have a license to do so. There are several issues associated with street side slaughter of poultry. Improper slaughter leads to:

- Imperfect bleeding
- Meat hardening/blackening due to pitting against the drum used
- Primitive and crude de-feathering techniques
- Quality of water used may not always be potable
- Poor hygiene practices in manual handling for defeathering, chopping, and removal of viscera
- Cross-contamination in slaughter houses
- Lack of chilling after de-feathering resulting in immediate bacterial attack.
- Lengthy farm-to-slaughter time, leading to dehydration; also causes shrivelled meat
- Improper ventilation as density of birds per sq.ft. is abnormally high
- Chicken droppings/feed/feathers spread micro-organisms while being transported within the city (for example, slaughter waste generated per day in Mumbai alone is 150 tonnes)

3.15.3 Regulation of Slaughter Houses

The infrastructure and facilities at most slaughter houses are inadequate and outdated. The fee charged on animal slaughter which is supposed to be used for maintenance and up-gradation is diverted to other uses by most state governments. Further, the operating authorities are also responsible for providing licenses for slaughter. The lack of separation of these roles leads to laxity in adhering to operating standards. For instance, the animals are often kept in poor conditions which violate the defined norms.

3.15.4 Retail Markets for Poultry & Meat

The present system of retailing in poultry and meat is in bad shape, with most unhygienic conditions. The system is highly conducive to contamination and does not permit clean handling. The waste disposal is also a major problem. Lack of cold storage at retail level also enhances microbial contamination.

3.16 INTER STATE DISPARITIES IN INFRASTRUCTURE

These apart, there is considerable and continued inter-regional disparities in infrastructure for marketing. The index of infrastructure at state level compiled by the Centre for Monitoring Indian Economy shows that the infrastructure is relatively well developed in the state of Kerala, Tamilnadu, Haryana and Gujarat. But it has continued to be weak in Madhya Pradesh, Bihar and Rajasthan. This is, obviously, reflected in the inter-regional differences in efficiency of agricultural marketing system. The study conducted by World Bank during 2006 in Orissa, Uttar Pradesh, Maharashtra and Tamilnadu also shows wide variations in marketing infrastructure in different states.

CHAPTER 4

REVIEW OF ONGOING SCHEMES ON AGRICULTURAL MARKETING INFRASTRUCTURE DURING X FIVE YEAR PLAN

4.1 MULTIPLICITY OF SCHEMES

Realizing the extensive necessity of infrastructure to support agricultural development, Government of India initiated a large number of schemes over a period of time to support creation of agricultural marketing infrastructure both in the public and private sector. The infrastructure required for the total value chain from post-production to the consumer, either in the domestic or global markets, is falling under various Ministries/Departments of Government of India. Under individual Ministry/Department, more than one scheme exists for creating the infrastructure under different categories of sub-sectors/crops. The multiplicity of schemes is, no doubt, justified owing to the business allocation under Transaction of Business Rules of the Government of India and the vastness of the sector. However, this multiplicity has caused serious problems of implementation, duplication of efforts, inconvenience to the entrepreneurs and consequential delay in execution of the schemes. The list of government agencies involved in the policy formulation and implementation of programmes/schemes in agriculture marketing infrastructure creation is given in Table 4.1.

The Main Ministries of Government of India viz. the Ministry of Agriculture; Food Processing Industries; Consumer Affairs; Food and Public Distribution; Health and Family Welfare; Commerce; Rural Development, and Finance, are responsible for formulation of policy related to the sector and regulation in their respective areas and the implementation of programmes related to agricultural marketing. They have launched 39 schemes in agricultural marketing. These schemes promote private investment in domestic trading, post harvest management, exports, quality management and support initiatives for capacity building, food safety and improving market information.

Table 4.1Government of India Agencies Involved in Promoting Agricultural Marketing
and Agro-Industry Development

Agency	Policy Formulation	Regulation	Domestic Trading	Post Harvest Management	Agro- Processing	Agro- Exports	Grades, Standards, SPS	Training Capacity building	Market Information	Direct Marketing Activities
Ministry of Agriculture										
Dept of Agriculture and										
Cooperation	Х									
Directorate of Marketing										
and Inspection		Χ	Х				Х	Х	Х	
Directorate of Plant										
Protection, Quarantine and										
Storage						X	X			
Horticulture Division	X			X		X	X	X	X	Х
Dept. of Animal Husbandry										
and Dairying	X	Х	X				X			
Boards and Autonomous										
Bodies			v	v	v		v	v	v	
National Horticulture Board			×	×	×		×	Χ	Χ	
			v		v		v	v	v	v
Cocoput Development			^		^		^	^	^	^
Board			x		x			x		
National Oilseeds and			^		^			^		
Vegetable Oils Development										
Board			x	x	x			x		
National Insecticides Board	Х					х	Х			
National Institute of										
Agricultural Marketing			х	Х	Х			Х		
National Institute of Post										
Harvest Technology				Х	Х			Х		
National Cooperative Devt										
Corporation			Х	Х						
National Agricultural										
Cooperative Marketing										
Federation of India										X
Small Farmers Agribusiness				v	N N					
			X	X	X					
Ninistry of Food										
Processing industries			}							
Industrios	v	v			v		v	v		
Dent of Agro and Pural	^	^			^		^	^	<u> </u>	
	x									
Ministry of Consumer										
Affairs, Food and Public										
Distribution										
Dept. of Consumer Affairs	Х	Х	İ		İ					
Bureau of Indian Standards		X	X				X			

Dept. of Food and Public	v		v							
Distribution	×	v	Χ		v					
Directorate of Sugar		Χ			X					
Vegetable Oils and Eats			v		v					
Control Worobousing			~		^					
Central Warehousing										v
Corporation of India			v							X
Ninistry of Small Saala			X							X
Industrias	v	v		v		v				
Ministry of Commorce	^	^		^		^				
and Industry										
Dopt of Commorco	v					v				
Dept. of Endustrial Policy	^					^				
and Promotion	Y	Y			x					
Directorate General of										
Foreign Trade									x	
Autonomous and Statutory										
Bodies										
Indian Institute of										
Packaging			х		х		х			
Agricultural and Processed										
Food Products Exports										
Development Authority										
(APEDA)			Х			Х	Х	Х	Х	
Marine Products Export										
Development Authority			Х		Х	Х	Х	Х	Х	
Export Inspection Council					Х	Х				
Coffee Board			Х	Х		Х	Х	Х	Х	Х
Rubber Board			Х	Х	Х	Х	Х	Х	Х	
Spices Board			Х	Х	Х	Х	Х	Х	Х	
Tea Board			Х	Х	Х	Х	Х	Х	Х	
Tobacco Board			Х	Х		Х		Х	Х	Х
Ministry of Health and										
Family Welfare	Х				Х					
Ministry of Finance										
National Bank for										
Agriculture and Rural										
Development			Х	X	X	Χ				
Ministry of Rural										
Development			Х	X	X			Х		
Ministry of Panchayat										
Raj	X	Χ	Х	Х	X				X	Х

Source: (i)

Ministry of Food Processing Industries, Annual Report 2004/05

(ii) (iii) Ministry of Commerce Annual Report 2004/05

Patnaik, G., 2005, "Review of Government of India Agricultural Marketing/Processing Policies and Programs", Global Agri-System Pvt. Ltd.

These schemes involve providing an investment grant to private entrepreneurs for a range of projects. The investment grants under various schemes range from 10 percent to 50 percent of the total project cost, although the majority of schemes are supporting through the subsidy in the range of 25 to 33 percent. As may be seen from the details of the schemes, there exists considerable overlap on the components of the scheme for which support is given. In other words, many projects can be funded under more than one Ministry/Department. Within the Ministry, there are more than one schemes which can support the same project. But the administration of the scheme, extent of grant may vary even for the same project under different schemes of the same Ministry or schemes of different Ministries/Departments. The important features of these schemes can be listed below:

- (i) Majority of the schemes supporting private investment are credit linked with 25 to 33 percent back-ended subsidy depending on the area and category of the beneficiaries.
- (ii) The administration of subsidy is either direct or through NABARD/Bank.
- (iii) A number of schemes also support investment by state agencies.
- (iv) There is no single platform/window through which an entrepreneur can choose a scheme for taking the benefit, which is most suited to his project.
- (v) Many times the beneficiary may have to run between the Ministries/Departments for getting No Objection Certificate or No Subsidy Claim certificate for the same project from more than one scheme.
- (vi) Project preparation support to the entrepreneurs is not adequately available under most of the schemes.
- (vii) Some of the schemes require sponsoring of the project by the State Government.
- (viii) There exists maximum subsidy limit for most of the schemes. This varies from Rs 15 lakhs to 75 lakhs per project.

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- (ix) There is divergence of eligibility amounts.
- (x) There is no system of information sharing between the Ministries/Departments.
- (xi) There is no single database which can be used by various stakeholders.
- (xii) There is no system of publicizing the infrastructure created which can be made use of by future investment proposals.

The plethora of schemes, though increases the attractiveness of investment in agricultural marketing for private entrepreneurs but also results in causing widespread overlap and duplication. There is an urgent need for coordination among GOI agencies to ensure greater consistency across development programmes, minimize duplication, more effectively track the level of support to the sector and eliminate the possibility of double dipping.

4.2 PERFORMANCE DURING X FIVE YEAR PLAN

The performances of some of the major schemes in the X Five Year Plan are given in Table 4.2. The estimated expenditure on these schemes is Rs 1468 crores, consisting of Rs 510 crores of Department of Agriculture and Cooperation, Rs 229 crores of Ministry of Food Processing Industries, Rs 254 crores of APEDA, Rs 292 crores of National Horticulture Board, Rs 164 crores of National Horticulture Mission and around Rs 19 crores of Technology Mission for NE region.

Table 4.2

Performance of Major Schemes in X Five Year Plan

(Rs in crore)

Name of the Scheme 2002-03 Achievem		3 ment	2003-04 nent Achievement		2004-05 Achievement		2005-06 Achievement		2006-07 Estimates		Total Finacial
	А	В	А	В	А	В	А	В	А	В	
1).Department of Agriculture & Cooperation											
i).Scheme for Development/Strengthening of Agril. Marketing Infrastructure, Grading & Standardization	Nil	Nil	Nil	Nil	Nil	Nil	178	4.07	1224	67.00	71.07
ii)Construction of Rural Godowns	65.51	65.65	40.23	90.75	34.81	80.65	24.61	71.97	10.00	100.00	409.02
iii) Marketing Research & Information Network	Nil	Nil	537	5.45	860	11.00	627	9.67	230	3.55	29.67
2).Ministry of Food Processing Industries											
ii) Packing Centres											
iii)Modernized Abattoirs	N.A.	28.46	N.A.	13.70	N.A.	11.82	N.A.	6.34*	N.A.	N.A.	60.32
iv)Integrated Cold Chain Facilities											
v)Value added Centre											
vi) Irradiation Facility											
vii)Scheme for Technology Up- gradation/ Establishment/ Modernization of Food Processing Industries	N.A.	15.56	N.A.	29.29	N.A.	51.29	N.A.	48.17*	N.A.	N.A.	144.31
viii) Setting up/Up gradation of Quality Control Laboratories	N.A.	11.33	N.A.	3.99	N.A.	2.99	N.A.	6.04*	N.A.	N.A.	24.35
3)APEDA	0.5	44.74		00.01	100	10.10	105	00.45	454	40.00	110.07
i) Infrastructure Development	85	16.71	83	20.91	102	18.10	105	22.15	154	42.00	119.87
ii) Market Development	105	7.17	124	5.83	159	6.05	233	1.75	316	8.00	34.80
iii) Quality Development	85	3.18	69	3.99	78	6.32	150	8.43	187	9.00	30.92
iv)Research and Development	19	0.94	15	1.00	12	2.75	7	0.26	4	1.00	5.95
v)Transport Assistance	94	4.65	80	10.77	110	11.85	159	21.23	235	18.00	66.50
4).National Horticulture Board Infrastructure Scheme	67593	46.45	10208	60.80	12017	73.83	5833 0	40.61	70000	70.00	291.69
5).National Horticulture Mission(PHM)	-	-	-	-	-	-	120	22.36	726	142.02	164.38
6)Technology Mission for North Eastern States.(PHM)	40.00	4.02	38.00	2.25	62.00	4.80	72.00	7.68	-	-	18.75

Physical Achievement A:

B: Financial Achievement

* Figure upto Dec.2005 Note: Physical Achievements of Rural Godowns is in lakh tonnes and that of NHB are in tonnes.

4.3 SCALE OF SUBSIDY

As mentioned earlier, there are multiple government aided schemes for promoting marketing infrastructure by various Ministries/Departments of Government of India. Though they differ in-terms of scale of subsidy, mode of administration, and channel of fund flow, most of the schemes are back ended subsidy schemes and are credit linked with 25 percent grant. It is seen that in some of the infrastructure promotion schemes of other sectors, the scale of subsidy permitted is up to 40 percent of the project cost. In textile sector for infrastructure creation in cluster development, the scale of subsidy is 40 percent of the project cost and each cluster project cost can go upto Rs 50 crore. Agriculture being a disadvantaged area for private investment, as seen and hence for promoting infrastructure in this sector, the scale of grant or incentives have to be much more attractive. The business in agriculture is risky due to small poor farmers, technological backwardness, weather holdings, resource dependence, and dispersed nature of raw material sourcing. To provide adequate protection for meeting the above risk factors, the incentives for investment have to be much more attractive in this sector. The present level of subsidy of 25 percent is covering only the interest cost and in no way subsidizes the capital cost of the project, though, the name of the incentive is capital subsidy. If an enterprise has set up a project of Rs 10 lakhs, he is eligible for Rs 2.5 lakh backended subsidy which exactly equals to the interest cost. Virtually there is no capital subsidy. Thus, it is proposed to scale up the subsidy for promoting infrastructure investment to 50 percent of the total cost during XI Five Year Plan. Subsequently the subsidy can be brought down to 20 percent uniformly.

4.4 CONSTRAINTS IN SELECTION AND EXECUTION OF SCHEMES

Based on the analysis of the on-going schemes of the Ministry and the extent of effective creation of infrastructure in the XI Plan, an innovative way of formulating and administering the private/public sector support programmes is the need of the day. Due to multiplicity of the schemes and Departments, the entrepreneur is unable to decide the appropriate scheme for want of correct information in the public domain. This forces the entrepreneurs to go by the

hearsay and approach the respective scheme implementing authority for the support. It is also an agreed fact that the time taken for getting the sanction and implementing the project is much more resulting in making the project unviable. Wherever credit linkage is mandatory, the delay on the part of the financial institutions in sanctioning loan further creates the problem for the entrepreneur. The cumbersome process of approvals/sanctions have also led to change the attitude over a period of time, and the entrepreneurs try to grab the benefit irrespective of the quality of the project. The implementation of the schemes has also suffered for want of professional capability in identifying the investment opportunities and converting them into technically feasible and commercially viable projects. The institutional capacity for such professional job is not adequate and, therefore, requires a new approach. It is also seen very often that some of the schemes could not have utilized the budgeted provision and where as some others would be requiring additional fund allocation. The financial control of the government would not permit easy transfer of surplus resources from one scheme to another where demand exists. This lack of flexibility, many times, leads to execution of low quality projects. Another major problem in this sector is watertight demarcation of support for various stages of the value chain and various commodity value chains coming under various Ministries/Departments. For example, Agriculture Marketing Infrastructure scheme administered by Ministry of Agriculture will be dealing only with the stages of value chain covering primary processing i.e. no change in the form of the produce. However, from the entrepreneur point of view, it is totally irrelevant whether it is primary processing or secondary processing and he would like to have support for the project covering various stages of the value chain depending on the feasibility. A project for food processing may also contain components of primary processing. Similarly, a project of post-harvest management may like to have few stages of food processing also. The artificial demarcation for the convenience of administering Ministries/Departments is against the entrepreneurs' interests and creates problems in the scheme administration and also leads to misuse of the funds by the entrepreneurs. Further, due to variation in the scale of subsidy among the schemes and method of administration, the entrepreneurs may not be in a position to choose right scheme suiting their requirements. Lack of information in the public domain about all these schemes at one place compounds the problem.

4.5 SOLUTION TO ADDRESS THE CONSTRAINTS

In order to address the above constraints, an innovative method of converging the schemes or ensuring effective coordination among various Ministries/Departments should be found out. One way of overcoming these problems could be to redraw the schemes with uniform scales of subsidy and method of administration and provide the scheme details at single public domain. The schemes of total plan should be made available at single source both in hard form and soft form. The fund allocated for all these schemes could be interchangeable between the schemes depending on the requirement through a Committee without going through the cumbersome process of revision of allocations. Another way of addressing this issue could be to have a single allpurpose scheme covering various stages of value chain from production to consumption and the Ministry/Department can be left to the choice of the entrepreneur. For this purpose, a single window system of application by the entrepreneurs should be evolved and depending on the choice of the entrepreneur, the case can automatically go to the concerned Department. This convergence/coordination will also help in promotion of the infrastructure creation by all agencies without any duplication of efforts. Presently, the same set of entrepreneurs would be approached by various Departments/Ministries. All the schemes should be re-drafted from the point of view of easy access by the entrepreneurs and quick approval process. Notwithstanding these considerations, a common information management system for all the Ministries should be developed which can be used by the respective implementing agencies through secured user-id, password system.

4.6 ALTERNATIVE FINANCIAL INSTRUMENTS

The existing system of providing grant may not be adequate to meet the divergence in the circumstances of executing the projects. Some projects may have the participation of the government in the form of equity in order to reduce the risk. Some projects which may require number of clearances from various

agencies may also have the participation of the government in the form of equity so that the government coordination mechanism can be utilized for effective implementation. Another alternative that has been opened by the Ministry of Finance is Viability Gap Funding route. The present system does not provide for selecting the option by the entrepreneur depending on the project and his comfort. It is proposed to provide for various alternatives of funding the project depending on the choice of the entrepreneur either through one time grant, equity participation or the route of viability gap funding. Since the sector is besieged with a number of uncertainties, the option of choosing the comfort in terms of financial assistance/regulatory support should be available to the entrepreneur. Further, the scheme should also provide for availing the viability gap funding in addition to the grant or equity participation. The mechanism of funding viability gap should be simplified and the decision making should be left to the Ministry concerned with the participation of representative from Finance. The internal capability of project implementing authorities for evaluating the projects for funding through viability gap should also be created. There should be a system of creating panel of professional consultants from whom any Ministry/Department can choose to prepare/apprise any project. The procedural formalities of funding these projects should be simplified.

4.7 NEED FOR SIMPLIFICATION OF APPROVAL PROCESS

The plan approval process as it exists now is highly complicated and time consuming. Any new scheme for final approval would require, through the existing system, a minimum of 2 to 3 years from taking the decision to have such a scheme. If it is taken from the conceptualization of the idea, it would require minimum of 4 to 5 years to ground the scheme. The multiple consultation process among the Ministries, in the Planning Commission, and in the Finance is draining the energy of the administering departments from actual implementation. In view of time consumption process, the continuity of implementing officers is also becoming a problem. Though the Ministry of Finance has enhanced the approval powers of a scheme to the concerned Head of the Ministry substantially, still the levels need to be further increased. The XI Five Year Plan preparation, which is on the way, should culminate in sanction of schemes on April 01, 2007 so that full five years are available for implementing the scheme. There are several experiences wherein the schemes proposed in the Plan could get the approval only in the third or fourth year of the Plan period. There are number of schemes which took 2 to 3 years in clearance.

Similarly, as a part of mid-course correction, any changes to be brought in to improve the implementation may also be kept in mind. Again the approval process of amendments in the scheme even without change in the financial allocations is highly cumbersome and such changes should be left to the concerned Ministry/Department. The approval process should be from the point of view of the administering Ministry and not from the end of regulating agencies. Similarly, the scheme implementation should be from the point of view of the beneficiary but not from the implementing agency side.

4.8 SUGGESTIONS FOR XI FIVE YEAR PLAN

The guiding principles of five year plan are provided by the basic objectives of growth, employment, self reliance and social justice. Each five year plan takes in to account the new constraints and possibilities faced during the period and attempt to make the necessary directional changes. The approach and suggestions for XI Five Year plan to encourage investment in agricultural marketing infrastructure by way of simplifying the procedures should be on the following lines:

- (a) Mobilize consensus among the States for creating favourable policy/legal environment for investment by private sector either on their own or in Public Private Partnership.
- (b) Mobilize public investment in areas which are public or social in nature and no private player is ready for venturing into because of commercial considerations.
- (c) The income from the sector should be ploughed back to the sector and requisite incentives be also provided by the Central Government.

- (d) Encourage States to professionalize the management of existing marketing channels and regulated markets by outsourcing the activities in the markets. The states must also modernize the markets in PPP mode.
- (e) Public support grants must be provided to fill the viability gap of the projects and the same be estimated to be around 50 percent of the project cost in this green field areas. Therefore the grant for private/state agencies may be pegged at 50 percent of the project cost.
- (f) There should not be a limit for maximum size of the project.
- (g) The administrative procedures must be uniform across all the schemes by all the Ministries/Departments.
- Single window application system must be put in place with an integrated ICT interface among all implementing agencies.
- A coordination committee meeting must take place every quarter with all the Ministries/departments.
- (j) The budget allocations for all the specified schemes should be permitted for re-appropriation among the ministries/departments with the approval of the coordination committee.
- (k) A panel of professional consulting agencies must be prepared for projectising the investment opportunities. All the Ministries/Departments can make use of them from time to time. A system of adding a new agency or deleting an agency to the panel should be put in place.
- (I) The approval process must be simplified so as to ensure grounding of various schemes at least by June, 2007.
- (m) Planning Commission must evaluate the schemes after two years of implementation and take mid course correction. The planning commission

must have professional agencies empanelled centrally, and the ministry/department may choose from among the panel.

(n) The approval process must be in a seamless ICT interface.

CHAPTER 5

PROJECTIONS OF INVESTMENT REQUIREMENTS FOR MARKETING INFRASTRUCTURE DURING XI FIVE YEAR PLAN

1.1 PROJECTIONS OF MARKETED SURPLUS

Suitability and adequacy of marketing infrastructure depends on the type and quantity of marketed surpluses of agricultural produce in the country. The marketed surpluses have been projected by various agencies depending on the growth rate proposed over the years. IIM in their report on Doubling of Food Production by 2011-12, have projected marketed surplus of 166 million tonees of foodgrains and 37 million tonnes of oilseeds. The National Horticulture Mission (Ministry of Agriculture) projected marketed surplus of 235 million tones of fruits and vegetables. The estimated marketed surpluses of various commodities are given in the Table 5.1.

Though the XI Five Year Plan approach paper has envisaged 4 percent growth rate in agriculture, on realistic estimation by Directorate of Marketing and Inspection (DMI), based on the annual growth rate during the preceding years of X Five Year plan period, the marketed surplus of total food grains is expected to be about 138 million tonnes. Similarly the marketed surplus of oilseeds, fruit and vegetables is expected to be 25 and 153 million tonnes respectively. The details of estimated production and marketed surpluses as arrived by the DMI are given in the Table 5.2, which have been used for estimating infrastructure requirement in this report.

1.2 INFRASTRUCTURE REQUIREMENTS AND INVESTMENT PROJECTIONS

An Inter-Ministerial Task Force (2002) set up by the Ministry of Agriculture, Government of India, New Delhi has estimated an investment requirement of Rs 11,732 crore for creation of needed infrastructures for agricultural marketing during X five year plan. This assessment does not cover the infrastructure requirements for livestock, poultry and meat, fisheries, forest produce, food safety infrastructure, food processing and export infrastructure. Based on a comprehensive assessment of the present status of the infrastructure, international experiences, and the proposed objectives of increasing the efficiency of marketing system, the infrastructure requirement has been assessed and indicated under each category. The proposed infrastructure need to be developed in totality, over a period of time, but not in isolation.

Table 5.1

Estimates and Projections of Marketed Surpluses of Various Commodities

Commodity	Marketed	Production	Production	Production	Marketed Surplus		lus
	surplus	in base	in the year	in terminal	Marketed	Marketed	Marketed
	ratio (%)	year 2001-	2006-07*	year 2011-	surplus	surplus	surplus
		02		12	2001-02	2006-07	2011-12
Rice	51.9	91.75	108.38	129.36	47.62	56.25	67.14
Wheat	53.8	73.53	91.06	112.79	39.56	48.99	60.68
Jowar	39.7	8.26	10.31	12.88	3.28	4.09	5.11
Bajra	45.4	7.07	8.61	10.49	3.20	3.91	4.76
Maize	46.2	13.18	18.14	24.97	6.09	8.38	11.54
Other Coarse	57.1	5.01	5.81	6.75	2.86	3.32	3.85
Cereals							
C. Cereals	-	33.52	42.87	55.08	15.43	19.70	25.26
Total	-	198.80	242.32	297.33	102.61	124.94	153.08
Cereals							
Pulses	53.9	13.79	17.94	23.36	7.43	9.67	12.59
Food grains		212.58	260.26	320.69	110.04	134.61	165.67
Oilseeds	79.6	21.18	31.31	46.33	16.86	24.92	36.88
Sugarcane	92.9	300.10	360.38	432.80	278.79	334.79	402.07
Fruits and Vegetables*	88.2**	131.62	205.38	266.06	116.08	181.14	234.66

(Million tonnes)

Source: Report - "National Action Plan Towards Doubling of Food Production (2001/02- 2011/12) P 187 " by Centre of Management in Agriculture (Indian Institute of Management, Ahemdabad)

* Source: Project Report "National Horticulture Mission" Ministry of Agriculture, Department of Agriculture & Cooperation, Government of India, New- Delhi. P 35-36

** Source of Marketed Surplus (MS) Output Ratio for Fruits and Vegetables is Achyra, S S (2003). Agril. Marketing in India, (as a Part of Millennium Study of Indian Farmers), P134 (Original Source- Agril Statistics at a Glance 2001. Agril. Statistics Division, Directorate of Economics and Statistics, Ministry of Agriculture, New Delhi).

Table 5.2

Projections of Production and Marketed Surplus for XI Five Year Plan

						(Million tonnes)							
Commodity	20	07-08	2008-09		20	09-10	201	0-11	2011-12				
Group	Prod	Market	Prod	Markete	Prod	Markete	Produ	Market	Prod	Markete			
	uctio	ed	ucti	d	uctio	d	ction	ed	ucti	d			
	n	surplus	on	surplus	n	surplus		surplus	on	surplus			
Cereals	200.4	119.48	204.	121.71	208.0	123.98	212.01	126.36	215.	128.72			
	7		21		3				97				
Pulses	14.47	8.74	14.6	8.85	14.82	8.95	15.01	9.06	15.1	9.17			
			5						9				
Food grains	214.9	128.10	218.	130.44	222.8	132.81	227.02	135.31	231.	137.77			
	4	00.07	86	00.04	5	00.05	00.05	04.00	16	0474			
Ollseeds	27.73	22.96	28.2	23.34	28.80	23.85	29.35	24.30	29.9	24.76			
Sugarcane	274.2	225.66	274	226.09	275.2	226 53	275 77	226.96	276	227.39			
e agai earre	0		72	/	5		2.0	220170	29				
Tea**	0.98		1.00		1.01		1.03		1.05				
Coffee	0.34		0.35		0.36		0.37		0.38				
Rubber	0.80		0.84		0.87		0.91		0.95				
Fruits	60.34	58.53	61.7	59.90	63.20	79.83	64.68	62.74	66.2	64.22			
			5						0				
Vegetables	101.7	84.43	102.	85.42	104.1	86.42	105.33	87.42	106.	88.44			
	3		92		2				56				
Cotton@	20.13	20.13	20.7	20.76	21.41	21.41	22.08	22.08	22.7	22.77			
			6						7				
Fish	7.20	7.20	7.34	7.34	7.54	7.54	7.75	7.75	7.96	7.96			
Milk**	114.0	68.41	119.	71.71	125.2	75.17	131.36	78.82	138.	82.94			
NA stars and	2	0.00	52	2.45	9	2.04	2.50	2.50	24	4.04			
Mutton and	2.33	2.33	2.65	2.65	3.04	3.04	3.50	3.50	4.04	4.04			
Goat Meat^^	4.22	4.22	4 4 1	1 11	1 4 1	1 4 1	4.00	4.00	E 04	E 04			
	4.22	4.22	4.41	4.41	4.01	4.01	4.82	4.82	00.C	5.00			
Meat**													
Meat(Total)**	6.55	6.55	7.06	7.06	7.65	7.65	8.32	8.32	9.10	9.10			
Chicken**	1.25		1.36		1.48		1.65		1.81				
**Eggs#	62.72	55.32	67.6	59.68	73.01	64.39	78.82	69.52	85.3	75.32			
			7						9				

Eggs in billion No.

** Projection for the Calendar year

@Bbale of 170 Kgs

Note: (1) Source of Marketed Surplus (MS) Output Ratio (for Cereals, Pulses, Foodgrains, Oil seeds, Sugarcane, Cotton, Fruits, vegetables, Milk, Meat, Fish, Eggs) is Achyra, S S (2003). Agril. Marketing in India, (as a Part of Millinium Study of Indian Farmers), p134 (Original Source- Agril Statistics at a Glance 2001. Agril. Statistics Division, Directorate of Economics and Statistics, Ministry of Agriculture, New Delhi). (2) The projection of foodgrains are based on the different forecasting techniques selected for different States and CAGR.

(3) Projections for the livestock product^{**} is based on Policy paper (No 21) of National Centre for Agricultural Economics and Policy Research entitled as "Demand and Supply Projections for Live stock Products in India" for the year 2010 and 2020.

(4) The projection of commercial crops are also based on CAGR.

(5) Projections estimated above are indications and at approximate level.

5.2.1 Rural Primary Markets

Considering the importance of Rural Primary Markets, there is an urgent need to develop these rural periodic markets in a phased manner with necessary infrastructural amenities to have a strong base of the marketing channel. The task of developing more than 21,000 Rural Periodic Markets is a gigantic one. Therefore, only selected markets may be developed initially and the rest can be developed in phases. The selection of markets should be based on economic considerations rather than financial viability in view of their socio-economic importance and equity. It is, therefore, suggested that at least 5000 rural primary markets should be taken up for need based development during XI plan period providing grants under the Central Sector scheme, subject to a ceiling of Rs 0.25 crore per market, which would require financial allocation of Rs 1250 crore.

5.2.2 Primary Processing/Collection Centres (Multi-Purpose Agri-Service Centres)

Production of fruits and vegetables including other high value crops need well structured infrastructure and integrated market for their guick post harvest handling and sales transactions to avoid losses and reduce marketing costs. The production of these crops is confined to different areas by small and marginal farmers. The produce is being sold in different wholesale markets where perishables are also traded. It is necessary to develop collection centres nearer to the farmer's field with proper infrastructure of grading, sorting, packing and transport. Moreover in the present system, the value addition is minimal at the farm gate level. This results in lower realization to the farmers. Further, lack of grading, cleaning, packing and transport of the produce, especially perishables, lead to loss of value and wastage. Various studies have indicated that the postharvest losses accounts for 30 percent of perishable produce amounting to an estimated value of Rs 50,000 crore per annum. One major opportunity in agriculture marketing sector is to create infrastructure for facilitating cleaning, grading, packing and other primary processing activities both for foodgrains and perishables at the village level. This will not only create employment in the rural hinterlands and improve post-harvest handling of the produce but also provide means of transferring higher value to the farmers from the existing value chain.

It is proposed to create primary processing centres for a cluster of villages with minimum infrastructure of drying yards, small storage facility, cleaning and grading equipment, and if required cold storage, and basic food safety testing/soil health testing facilities. These centres must provide facilities for handling multi-commodities and also provide other value addition services such as soil testing for soil health management. Soil health management is acquiring importance for promoting precision farming and enhancing productivity which will be critical for sustenance of agriculture. These centres will be inter-connected through ICT. Soil testing on a regular basis can create soil health map for various nutrients. This is also important in view of growing market demand for organic foods and also bringing in traceability mechanisms.

The primary value addition centres can not be sustainable for every village. One centre must cover a cluster of villages depending on the production potential and type of commodities. Fine tuning of infrastructure will be based on the type of commodities produced in the area. Each centre is expected to cost Rs 30 lakhs. Panchayat Institutions can promote this infrastructure through a professional, in agri-marketing or it can be on a self sustaining basis. These centres can also be developed on Public-Private Partnership basis with government support upto 50 percent of the cost of the project. Considering the vastness of the country at least 50,000 Primary Value Addition/collection centres may be developed @ 30 lakh per center amounting to Rs 15000 crore. Depending on the facilities available, Rural Primary Markets can be converted into these centres or they can be developed as an adjunct to Rural Primary Markets. Such centres can become Rural Business Hubs.

1.1.1 Rural Business Hubs

The Ministry of Panchayati Raj Institutions and CII are promoting Rural Business Hubs in different blocks on the lines of the successful THAI experience of one Tambom one project (OTOP) by building linkages between Panchayats, Industry and Business to create successful business models. The Prime Minister has announced a strategy for developing Rural Business Hubs through Panchayats. These hubs are a first ever Public Private Panchayat Partnership (PPPP) to improve and refine locally available resources and produce goods to enable larger

market access. The Rural Business Hubs are groups of entrepreneurs, including farmers and artisans, working together under the aegis of a village/block panchayat to enhance the value of their products with private sector participation for greater market access and prosperity. With this initiative, villagers will be encouraged to produce products and develop services by using local know-how. The product range will include food and drinks, and herbal products. About three-fourth of our population resides in rural areas and almost the same proportion in still dependent on agriculture for sustenance. To ensure inclusive and equitable growth, there is a need to knit and integrate rural areas into the modern economic processes that are rapidly transforming our country. In this context, the Rural Business Hubs are required to be set up. The primary processing centres proposed above, depending on the availability of space and potential, could be converted into Rural Business Hubs. The mode of implementation in such cases will be based on PPPP model. Since, Primary Value addition centres/Rural Primary Markets and Rural Business Hubs can be synonymous depending on location, no separate allocation is envisaged in XI Five Year Plan, in case the allocation proposed for Primary Value Addition Centres and Rural Primary Markets is accepted.

1.1.2 Wholesale Markets

Considering the inadequacy of infrastructure in most of the wholesale markets, it is necessary that states/UTs may prepare State Master Plans for development of markets on scientific lines in a phased manner. The Expert Committee on Agricultural Marketing (June-2001) has suggested that for development of 7293 wholesale markets over a ten year period an estimated investment of Rs 6026 crore for up-gradation/modernization would be required. However, based on the experience of assessing the infrastructure upgradation requirement in Andhra Pradesh in about 37 wholesale markets, through the Nabard Consultancy Services (NABCONS), (a subsidiary of NABARD), has revealed that on an average, each market would require about Rs 3 crore for modernization. The 2428 principle yards require modernization in all the States. This would require an investment of Rs 7284 crore. The modernization may require relocation of some of the markets depending on the existing location and space availability. Similarly modernization of sub-yards (5129) would require investment of Rs 5129 crore @

of Rs 1 crore per sub-yard. Thus, the total requirement for modernizing the existing wholesale markets would be Rs 12413 crore in the XI Five Year Plan.

Considering the existing constraints in the markets, the modernization should provide for transparent auction system for price discovery of the agricultural produce, bulk weighing arrangement, bulk handling, proper parking, waste disposal, and storage facility. The details of infrastructure needed for an ideal wholesale market are given below:

Core Facilities

Platforms for Automatic weighing Auction Platforms Packaging & Labelling Equipments Drying Yards Loading, Unloading & Dispatch Facilities Grading Facilities Standardisation Facilities

Price Display Mechanism Information Centres Storage/Cold Rooms Ripening Chambers Public Address System Extension and Training to Farmers

Service Infrastructure

Rest Rooms Parking Sheds for Animals Market Education Soil Testing Facilities Drainage

Support Infrastructure

Water Supply Power **Veterinary Services** Sanitary Facilities Posts & Telephones Banking Input supply and Daily Necessity Outlets POL **Repair/Maintenance Service** Office **Computerised Systems** Rain Proofing

Maintenance

Infrastructure Cleaning and Sanitation Garbage Collection & Disposal Waste Utilisation Vermi-Composting Bio-gas Production/Power

1.1.3 New Wholesale Markets

In view of Agricultural Marketing Reforms initiated by the Government of India/States, it is expected that new markets in private sector, will be established and will become competitive markets for the existing regulated markets. The private competitive markets are expected to be established in important agriproducing states. On a conservative estimate, about 75 private markets should be promoted with necessary modern infrastructure with an investment of about Rs 10 crore for each market. The total investment required for this is Rs 750 crore. This investment will be in the private sector. The government has to only create an enabling environment.

5.2.3 Terminal Market Complexes

The terminal Markets of National Importance (MNI) should be established to function as reference markets. These will function as national auction centres for domestic bulk buyers for industries and exports. These centres will be dealing only in standardized and graded products. The operation and management of these centres will be professional. Quality will be maintained at international level, auctioning system will follow the modern techniques maintaining absolute transparency. These markets will be built under private sector on the lines of NDDB model. The Ministry of Agriculture has proposed for development of terminal market complexes which are capital intensive projects up to and beyond Rs 100 crore for each project. They are proposed to be assisted in PPP mode through Government participation as equity, towards project assistance. Upon redemption, such equity (assistance) is proposed to be preferentially allocated to farmers organizations enabling their participation and share holding in the terminal market complex. The participation of the government is in the form of equity in a terminal market, basically to provide the required comfort to the private entrepreneur and fill the financially viability gap. The Central Government as co-shareholder in the project would coordinate with the State Governments for providing the necessary regulatory environment and facilitation for successful operation of the terminal market. These markets would be alternate competitive market places that would operate independently of and parallel to the existing set up of government regulated markets/mandies and collect user charges with
caps on basic service provided. These Modern Terminal Markets would be established by the private enterprises based on their own business model and would determine the size of the markets and scale of its operation based on financial viability and commercial consideration. To begin with, these terminal markets based on 'hub and spoke model' are being considered for development at eight places. To compete in the global markets, it is necessary to develop terminal markets in major metropolitan cities during XI Plan. 35 terminal markets in cities with more than a million population, serving as important export centres may be set up with private sector participation with an outlay of Rs 50 crore for each terminal market. The total outlay required for development of such terminal markets would come to Rs 1750 crore.

5.2.7 Direct Marketing System/Farmers Markets

Direct marketing encourages farmers to undertake marketing of farm produce at the farm gate and obviates the necessity to haul produce to regulated markets for sale. Direct marketing enables farmers and processors and other bulk buyers to economize on transportation costs and to considerably improve price realization. In South Korea, for instance, as a consequence of expansion of direct marketing of agricultural products, consumer prices declined by 20 to 30 percent and producer-received 10 to 20 percent higher prices. This also provided opportunities to large-scale marketing companies to increase their purchases directly from producing areas.

In the present marketing system, it is estimated that 10 percent of the total produce is marketed through above channel and remaining is sold through other marketing channels. Marketing through other channels involves considerable amount of marketing cost. The studies indicate (Acharya, 2003) that 77 percent of the marketing cost amounting to Rs 50127 crore is estimated as avoidable loss during handling, transport and storage. Investment in marketing infrastructure can save these losses and also increase employment opportunities. An estimation has been made on marketing of total food grains during 2005-06 based on the production and estimated value of the produce to be marketed. Table 5.3 is an indicative exercise which shows promotion of direct marketing will enhance the share of producer – seller by curtailing middle men and reducing the marketing

cost. In Direct Marketing the share of producer is generally 10-20 percent higher as compared to the traditional marketing channels. Therefore, an amount of Rs 892.16 Crore (10 percent more as compared to traditional channel) is expected to be realized. Similarly, out of total estimated avoidable loss of Rs 50127 crore, marketing cost could be saved upto 10 percent amounting to Rs 5012 crore by shortening the marketing channel through direct marketing. The details are given in Table 5.3.

Table 5.3

Production and	Total Value	of Different	Commodities	during	2005-06

S. No.	Commodities	Estimated market surpluses (M.T.)	Rate (Rs/ Quintal)	Total Amount (Crore Rupees)	Estimated produce routed through Direct Marketing (million tones)	Estimated price realized by the producer in traditional channel at price offered in column 4 (Crore Rs)	Estimated price realized by the producer 10 % more in Direct Marketing as compared to price offered in column 4 (Crore Rs)
1	2	3	4	5	6	7	8
1.	Rice	54.09	650	35158.50	5.40	3515.85	3867.44
2	Wheat	43.59	700	30515.80	4.39	3051.58	3356.74
3	Coarse Cereals	18.20	600	10920.00	1.62	1092.00	1201.20
4	Total Cereals	115.88		76594.30	1.61	7659.43	8425.38
5	Pulses	8.45	1500	12621	0.84	1262.10	1388.31
6	Total Foodgrains	124.33		89215.30	12.45	8921.53	9813.69

Direct marketing enables farmers to meet the specific requirements of wholesalers from the farmers' inventory of graded produce and of retail consumers based on consumers' preferences, thus, enabling farmers to dynamically take advantage of favourable prices and improve their net margin. It encourages farmers to undertake grading of farm produce at the farm gate and obviates the necessity of farmers to haul produce to regulated markets that are not necessarily spaced on the principles of efficiency. Direct marketing thus, enables farmers and buyers to economize on transportation costs and to improve price realization considerably. The Expert Committee (2001) and the Inter-Ministerial Task Force (2002) set up by the Ministry of Agriculture have

suggested promotion of direct marketing as one of the alternative marketing structure that sustains incentives for quality and enhanced productivity, reduce distribution losses, improving farmer incomes with improved technology support and methods. The market will operate outside the purview of the Agricultural Produce Marketing Act and will be owned by professional agencies in private sector, wholesalers, trade associations and other investors. The government's role should be that of a facilitator rather than that of having control over the management of the markets.

Considering the useful role of direct marketing in the interest of both producers and consumers, it is required to be promoted in all the States/UTs. It is, therefore, suggested that financial assistance to set up 1152 Apni Mandies/Rythu Bazaars in all the districts of the country (2 per district on an average) would require financial investment of Rs 576.00 crore @ Rs 50.00 lakhs per market during XI Plan period. This investment can be made by Agricultural Produce Market Committees/Boards, or private entrepreneurs, who would identify locations and provide maintenance, management and supervision. Government support and commitment are required in this regard.

5.2.8 Commodity Specific Markets – Fruits and Vegetables

The importance of horticulture in improving the productivity of land, generating employment, improving economic conditions of farmers and entrepreneurs, enhancing export and above all, providing nutritional security to the people is widely acknowledged. The National Horticulture Mission was launched in May, 2005 as a major initiative to bring about diversification in agriculture and augment income of farmers through cultivation of high value crops. The mission seeks to double the horticultural production by 2011. The infrastructure facilities available in the markets at present are far from satisfactory. Keeping in view the specific needs of the perishable commodities, there is need for developing specialized markets for fruit and vegetables, flowers, medicinal and aromatic plants, spices, etc.

5.2.8.1 Markets for Fruits and Vegetables

It has been assessed by the Expert Committee on Strengthening and Developing of Agricultural Marketing that there are at least 241 such places in the country where fruits and vegetables markets should be developed. The investment requirement for fruits and vegetables markets in the country at the rate of Rs 20 crores is Rs 4820 crores.

5.2.8.2 Markets for Flowers

The flower cultivation in the country is practiced since times immemorial, but floriculture has blossomed into a viable business only in recent years. The increased growing of temporary cut flowers like rose, gladiolus, tuberose, and carnation has lead to their use for bouquets and arrangements for gifts as well as decoration of both home and workplace, besides exports. Availability of diverse agro-climatic condition in the country facilitates production of all major flowers, throughout the year in some part of the country or other and improved transportation facilities have increased the availability of flowers all over the country. According to the latest information, the estimated area under flowers is 98000 hectares with a production of 5.56 lakh tonnes lose flowers and 8034 million cut flowers. The major flower growing states are Karnataka, Tamilnadu, Andhra Pradesh, West Bengal, Maharashtra, Rajasthan, Delhi, and Haryana.

The major markets of flowers are located at Pune, Nasik, Ahmedabad, Bangalore, Guntoor, Delhi, Lucknow, Varanasi and Patna. A study conducted by the DMI reveals that the major marketing season of cut flowers extends from February to June in case of Gonda, Gulchadi, and Lily, whereas roses, and Jeswaldi start coming from August and continue for 4-6 months depending upon the type of flowers. The marketing channels adopted in Bombay market is, producer – Itinerant merchant – Commission agent – Retailer – Consumer. Whereas in Ahmedabad, the common channel is the producer – commission agent – retailer – consumer. The inadequate marketing infrastructure has hampered the efficient marketing of flowers. The lack of cold storage, grading, improved packaging material and suitable transport increases the marketing costs. These markets

need improvement immediately to protect the losses in handling and transportation. Modern state-of-art flower markets are required to be developed near major metropolitan and bigger cities. It is proposed to take up such markets at 15 locations with an estimated cost of Rs 10 crore for each market. The total requirement of investment for development of flower markets will be Rs 150 crore.

5.2.8.3 Markets for Medicinal and Aromatic Plants

India has been considered as a treasure house of valuable medicinal and aromatic plants species. There are over 9500 plant species considering their importance and use in the pharmaceutical industry. Out of these, about 65 plants species have large and consistent demand in the world trade. However, limited quantities of these plant materials are produced in the country. In terms of market share in production value, India holds only the sixth place with a mere 7 percent share. On the contrary, India is importing 10 types of essential oils to the tune of 8000 tonnes per annum. There is a need to develop markets for medicinal and aromatics plants especially in hilly and tribal areas where concentration of production of these plant species is more. Proper market infrastructure for medicinal and aromatic plants is required in the states of Kerala, Chattishgarh, MP, Uttarancahl and North Eastern states. About 500 such markets are required to be developed in these States at a cost of around Rs 1 crore for each. The total investment required will be Rs 500 crore.

5.2.8.4 Markets for Spices

Spices constitute an important group of horticultural crops. These are used for flavouring, seasoning and imparting aroma in foods. The major spice producing states are Andhra Pradesh, Kerala, Gujarat, Rajasthan, Maharashtra, West Bengal, Karnataka, Tamilnadu, Orissa and Madhya Pradesh. North-Eastern Region and Nicobar Islands have also been identified as potential areas for spices cultivation. There is an urgent need to develop at least 50 specialized markets of spices in the country with an investment of Rs 0.50 crore per market amounting

to a total investment of Rs 25 crore. The infrastructure needed for these markets include electronic weighing, cold storage, and reefer vans.

5.2.8.5 Markets for Livestock

An analysis of livestock trade mechanisms of other countries highlights that stringent government guidelines are necessary to ensure fair trade practices and animal welfare and hygiene levels. Most countries across the world are shifting from physical livestock markets to:

- Contracting direct sale agreements between processor and the farmer.
- Technology based auctions with multiple, well-defined criteria for governing the price of the animal.

In India, the long term solution to better livestock trading mechanism requires the removal of ban on rearing buffaloes for slaughter and interstate movement of cattle and small ruminants. This would allow contracting, as has been the trend in other countries. Buffalo male calf mortality is exceptionally high (more than three times of the normal mortality rate) essentially due to starvation and negligence of the owners in city dairies. In cities, the man made mortality rate is 95 to 98 percent. These calves could be saved and reared for meat production through economical feeding and by providing critical inputs.

The existing livestock markets lack basic amenities such as proper ground for holding livestock fairs, drinking water for animals, medical facilities, and space for animals. There is also exploitation of farmers by the unlicensed brokers and contractors. Lack of proper market infrastructure and financial limitation for holding these fairs affect the efficient marketing of livestock. It is, therefore, necessary that proper infrastructure like cattle shed, office building, water troughs, bathing place for animals, veterinary dispensary, and sanitary arrangements, may be provided in these markets so that the transaction of livestock is carried out more efficiently. There are 47 crore livestock in the country and assuming that for 10,000 heads of livestock one market is needed,

there is need to develop 4700 such market across the country. To begin with, initially development of 1000 livestock markets with an investment of Rs 20 lakhs per market during XI Five Year Plan may be planned. The total outlay required for development of livestock markets thus would come to Rs 200 crore.

5.2.8.6 Poultry and Meat Markets

It is also essential to upgrade the infrastructure to meet the modern requirements in terms of healthy and hygienic meat. Since, most of these facilities fall in the purview of local bodies, it is recommended that each municipality should adopt the following criteria with regard to animal slaughter:

- Permit 1 to 3 (based on size of city, meat requirement) slaughter plants to be set up in proximity to the city. The slaughter plants can be owned and operated by private parties with the government stipulating the design, animal welfare standards and the slaughter fee structure.
- As is the current system, the traders/farmers will continue to bring the birds to the city. The birds would be slaughtered at the common facility and then sold by the farmers to the existing wet market shops. The slaughter facilities should have freezers and storage for frozen chicken to allow traders/farmers to store the meat temporarily if selling prices are low.
- The slaughter plants should be connected to a rendering plant so that the offals and other organic waste generated by the slaughter can be used as pet food or as organic fertilizer.
- The slaughter facilities must have independent veterinary inspectors to ensure compliance with standards
- The slaughtered chicken would get transported in chilled/frozen condition in insulated boxes/reefer vans by the distribution/traders.

The ban can be implemented in a phased manner targeting metros in the first phase, followed by other cities. This is being looked after by Animal Husbandry and hence no separate investment strategy is draw up.

5.2.9 Slaughter Facilities

Currently there are 4030 slaughter houses in the country which are recognized/authorized by local bodies. In addition, a considerable number of animals are slaughtered in unauthorized places. Industry sources estimate that upto 50 percent of animals slaughtered in any urban center are from unauthorized slaughter houses.

5.2.9.1 Municipal Slaughter Houses

As mentioned earlier, the infrastructure and facilities at most slaughter houses are inadequate and outdated. The fee charged on animal slaughter which is supposed to be used for maintenance and upgradation is diverted to other uses by most state governments. Further the operating authorities are also responsible for providing licenses for slaughter. The lack of separation of these roles leads to laxity in adhering to operating standards. For instance, the animals are often kept in poor conditions (due to lack of adequate infrastructure) which violates the defined norms. Given that this subject is highly controversial and there is hesitation on the part of state governments to be associated with further investments in slaughter, privatization of municipal slaughter houses is the solution. The proposed system would have the following features:

- The Government through a tendering process, can invite private parties to upgrade and operate existing slaughter houses.
- The guidelines for operating the slaughter houses should be laid down by the government. These guidelines should address:
 - Animal welfare standards.

- Commercial interest of the private sector party (The government should stipulate a maximum fee that can be charged by the operator for each slaughter).
- Quality and hygiene aspects.
- Ensure adequate veterinary support at the slaughter house.
- Rendering facilities for offals and ETP to treat abattoir effluent and set minimum certification standards which need to be met such as HACCP/ISO 9002.

5.2.9.2 Private Slaughter Houses

Most large export houses need private slaughter houses to meet the quality standards required for exports. However, as meat is a highly controversial subject, few private slaughter houses have been permitted so far (even though meat processing was delicensed in 1991). Locational clearance for a slaughter house is the most difficult to obtain due to social issues related to allocation of land for slaughter.

A possible solution to this is that exporters/processors are allowed to set up their own slaughter units inside the premises of the municipal slaughter houses. Several municipal slaughter houses (including the one at Deonar in Mumbai) have vacant land in their premises which could be leased/sold for setting up private slaughter houses. This will also generate extra revenue for the municipal slaughter houses.

There is tremendous scope for private participation for modernizing and setting up of modern slaughter houses and modern abattoirs. Private Public Participation with local bodies and the stakeholders in the sector can form alliance for setting up and managing the facility in BOO basis. An estimated investment of Rs 500 crore is assessed to be required at the rate of Rs 10 crore per modern abattoir near each major city of population of a million and more, for modernizing the slaughter houses and setting up of modern abattoirs.

5.2.9.3 Retail Outlets for Meat

The unorganized retail outlet markets of livestock and poultry meat are functioning in most unhygienic conditions and even sell the produce by display on the grounds which are hazardous to the health. There is need to develop proper infrastructure in these markets across the country. A system of modernizing these outlets and providing basic minimum facilities such as running water, waste removal, cold storage etc is to be put in place. Such infrastructure is to be developed on cluster basis. About 1000 clusters may be required in all Metropolitan cities. Each cluster may require an investment of Rs 5 crore for creating common infrastructure. In each of that cluster individual retail outlets will have to create their own infrastructure. About an investment of Rs 5000 crore may be required for creating this infrastructure in all major towns/cities. Most of this investment should be met under Jawaharlal Nehru Urban Renewal Mission being implemented by Ministry of Urban Development. The PPP mode of investment must be explored.

5.2.10 Retail Marketing

Currently retailing in India is estimated to be a \$ 200 billion or Rs 900,000 crore activity. Of this, organized retailing is near 3 percent in the form of various kinds of Shopping Malls (22 million Sq. Ft space), Super Markets (47), Hypermarkets (36), Discount Stores (27), Specialty Stores (45), Departmental Stores (18), Convenience Stores (9) and E-Trading (9). Retail trade and services provide employment to large number of persons. For many of hawkers and street vendors retailing is a source of livelihood. While bulk of retailing will continue to be in the small scale and informal sector, it must be recognized that modern organized retailing brings many advantages to producers as well as to consumers. Organized retailing in agricultural produce can set up supply chains, give better prices to farmers for their produce and facilitate agro-processing industries. Modern retailing can bring in new technology and reduce consumer's

prices, thus, stimulating demand and thereby providing more employment in production.

Retail marketing in India has not been attended adequately. The retailers, especially in fruits and vegetables trade, are not the representatives of buyers in wholesale markets but are agents of wholesalers. The studies relating to fruit and vegetables retail markets have pointed out that hardly 30 percent retailers trade with wholesalers in cash and the balance is on credit. Wholesaler's agents make daily collections from the retailers. The retailers, like producers, are not organized and constitute a weak link in agricultural marketing. Retail markets in the country are by and large left to civic authorities. Marketing authorities do not look after their performance in terms of marketing practices or facilitating infrastructure. They are devoid of minimum facilities and services and are quite inhospitable to consumers. It would be desirable to promote organized retail chains in urban centres through promotion of entrepreneurship amongst the educated unemployed youth in urban areas to cater to the urban consumers. The organized retail chains should be equipped with cool chambers and other facilities to maintain the freshness of the products as well as to minimize deterioration. The private sector is active in this area and hence no investment requirements have been projected. Since the investment will be completely in private sector, no projections are considered necessary. All concerned government departments and organizations should be sensitized to facilitate and promote retail outlets.

5.2.11 Supply Chain Management – Partnership with Farmers

Certain private sector organizations in India have sought to surmount challenges that are involved in the management of our agricultural supply chain. The fragmentation, lack of infrastructure, presence of middlemen and the plethora of rules and regulations have not proved to be too daunting for certain inventive and resourceful organizations.

What is different is that partnership becomes the prime criteria in supply chain management. These partnerships are in processing, Research and Development (R&D), extension services marketing or indeed with the farmers directly. The focus of these private sector initiatives has been more towards the elimination of

waste, increase in farm incomes and productivity enhancements. The government should provide fiscal and financial incentives to the private entrepreneurs for development of such food supply chain management systems in the country. An integrated supply chain infrastructure is nothing but aggregation of appropriate components such as collection centres, cold chains, storage, wholesale market, and retail market. Since all these components are already covered individually, no separate provision is made under this. However, an implementation mechanism should be put in place to ensure such an integrated approach.

5.2.12 Storage Infrastructure

In order to assess the adequacy in the present and to estimate future requirement of agricultural marketing infrastructure in the country, marketed surpluses have been envisaged based on the projections of agricultural production. The ratios of marketed surpluses to production of selected commodities estimated during various surveys have been used to arrive at the quantity of marketed surpluses of selected agricultural commodities based on the production estimates for the various years of XI Five Year Plan viz. 2007-08 to 2011-12. Table 5.4 gives the estimates of marketed surpluses of various commodities for the years 2007-08 to 2011-12.

It has been estimated that additional marketed surplus of 138 million tonnes of foodgrains, 25 million tonnes of oilseeds and 228 million tonnes of sugarcane will arise in the country by 2011-12, for which requisite infrastructure in terms of markets and storage facilities is to be created. Based on above estimates of marketed surplus, the assessment of additional warehouse capacity for foodgrains, oil seeds and sugar have been worked out and shown in Table 5.5.

The proposed capacity during the year 2005-06 to 2006-07 of FCI, CWC and Gramin Bhandaran Yojana is 16.11 lakh tonnes. This includes 6.11 lakh tonnes of FCI and CWC and 10 lakh tonnes of Gramin Bhandaran Yojana, out of which 1.54 lakh tonnes of GBY has been covered up to June 2006. On an average, capacity of SWC and others is increasing at the rate of 8.57 lakh tonnes per year.

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Total storage requirement of foodgrains, oilseeds and sugar to meet the increased marketed surpluses in XI Five Year Plan is (3.87+0.74+0.10)=4.71 Million Tonnes. Existing Storage (Warehousing) capacity of different agencies in country as on June 2006 is shown in Table 5.6.

Total Storage requirement and cost projections for Additional Storage are shown in Table 5.7.

Table 5.4

Projections of Production and Marketed Surplus of Agricultural Commodities for XI Five Year Plan

(million tonnes)

Commodity	2007-08		2008-09)	2009-10		2010-11		2011-12	
Group	Product	Market	Produ	Marke	Product	Market	Producti	Market	Product	Market
	ion	ed	ction	ted	ion	ed	on	ed	ion	ed
		surplu		surplu		surplus		surplus		surplus
		S		S						
	200.47	119.48	204.2	121.7	208.03	123.98	212.01	126.36	215.97	128.72
Cereals			1	1						
Pulses	14.47	8.74	14.65	8.85	14.82	8.95	15.01	9.06	15.19	9.17
Food grains	214.94	128.10	218.8	130.4	222.85	132.81	227.02	135.31	231.16	137.77
_			6	4						
Oilseeds	27.73	22.96	28.26	23.34	28.80	23.85	29.35	24.30	29.91	24.76
Sugarcane	274.20	225.66	274.7	226.0	275.25	226.53	275.77	226.96	276.29	227.39
			2	9						
Tea**	0.98		1.00		1.01		1.03		1.05	
Coffee	0.34		0.35		0.36		0.37		0.38	
Rubber	0.80		0.84		0.87		0.91		0.95	
Fruits	60.34	58.53	61.75	59.90	63.20	79.83	64.68	62.74	66.20	64.22
vegetables	101.73	84.43	102.9	85.42	104.12	86.42	105.33	87.42	106.56	88.44
			2							
Cotton@	20.13	20.13	20.76	20.76	21.41	21.41	22.08	22.08	22.77	22.77

Note: (1) The projection of foodgrains is based on different forecasting techniques selected for different States.

(2) The projection of commercial crops is based on CAGR.

Table 5.5

Marketed Surplus of Foodgrains, Oilseeds and Sugar and Storage Requirement

(Million Tonnes)

S. No.	Description	Marketed Surplus and Storage Requirement
	Foodgrains	
1.	Marketed surplus in 2005-06 as per estimation	125.17
	Less: Exportable surplus (10%)	<u>12.68</u>
	Net marketed surplus likely to be available for storage	112.65
2.	Warehousing capacity created as on 2005-06	80.76
3.	Marketed surplus in 2006-07 as per estimation	125.82
	Less: Exportable surplus (10%)	<u>12.58</u>
	Net marketed surplus likely to be available for storage	113.23
4.	Additional Warehouse capacity required by 2006-2007 (X Plan)- (3-2)	32.48
5	Additional storage capacity expected to be created during 2006-07 (in the pipeline)	2.314
6	Net shortage of warehouse capacity by the end of X Five year Plan (4-5)	30.328
5.	Marketed surplus in 2011-12 as per estimation	137.77
	Less: Exportable surplus (15%)	<u>20.66</u>
	Net marketed surplus for storage	117.11
6.	Additional warehousing capacity required by 2011-2012 (XI Plan) (5-3-4)	3.87
	Oil Seeds	
1.	Marketed surplus in 2005-06 as per estimation	22.10
2.	Marketed surplus in 2006-07 as per estimation	22.53
3.	Increase in Marketed surplus in 2006-07 over 2005-2006(2-1)	0.43
4.	Additional Warehousing capacity required by 2006-2007 @ 33% of	0.142
	increased marketed surplus) (X Plan)	
5.	Marketed surplus in 2011-12 as per IIM Report	24.77
6.	Increase in Marketed surplus in 2011-12 over 2006-2007(5-2)	2.24
7.	Additional Warehousing Capacity required by 2011-12 @ 33% of	0.74
	increased marketed surplus	
1	SUGAR	070.1/
1.	(a) Production of sugarcane during 2005-2006 as per TIM Report (b) 60,4% milled for production of sugar	2/3.10
	(b) 60.4% Initial for production of sugar	104.99
	(d) Storage requirement for 60.5% of sugar produced	10.47
2	(a) Production of sugarcane during 2006-2007 as per IIM Report	273.68
2.	(b) 60.4% milled for production of sugar	165.30
	(c) Sugar produced (10.5% of sugarcane Milled)	17.35
	(d) Storage requirement for 60.5% of sugar produced	10.5
3.	(a) Production of sugarcane during 2011-2012 as per estimation	276.29
	(b) 60.4% milled for production of sugar	166.88
	(c) Sugar produced (10.5% of sugarcane Milled)	17.52
	(d) Storage requirement for 60.5% of sugar produced	10.60
4.	Storage requirement in 10 th Plan (2d-1d)	0.02 (10.5-10.48)
5.	Storage requirement in 11 th Plan (3d-2d)	0.10 (10.60-10.50)

Table 5.6

Existing Storage Capacity

(in lakh tonnes)

Agencies	FCI*	CWC**	SWC**	Gramin Bhandaran Yojana	Others	Grand Total
Storage Capacity	252.96 (167.97)	102.82	199.49	166.70	170.60	807.58#

Note: * Storage capacity of FCI as on 01-06-2006.

** Storage capacity of CWC and SWCs as on 01-06-2006.

#As the capacity of the FCI includes 84.99 lakh MT capacity hired from the CWC and SWCs, therefore the grand total includes only the FCI capacity to avoid the double counting.

Table 5.7
Total Additional Storage Capacity Requirement for XI Five Year Plan

Backlog Storage Capacity Gap During X Plan (in m tones)	Additional Storage Capacity Required During XI Plan (in m tones)	Unit Rate per Tonne (Rs)	Total Amount for Backlog Capacity of X Plan (Rs crore)	Total Amount for Additional Storage During XI Plan (Rs crore)	Grand Total (in Rs crore)
1	2	3	1x3=4	2x3=5	6
30.328	4.71	2500	7582	105.50	7687.5

Note: The unit rate per tonne is based on the average of the estimates calculated for Private, Cooperative and Public Sector as given by IIM, Ahemdabad.

The projected storage requirement is huge and taking the past performance, it is unlikely that the above capacity can be created during the XI Five Year Plan. However, in view of growing importance of Commodity Futures markets, scientific storage capacity creation is essential for availing the benefits by the farmers. The storage capacity is required to be created for bulk handling and also small capacities in a decentralized manner to make it available to all the farmers. There is necessity for expanding small storage capacities with each farmer or at least in each village on a community basis. The Primary Value Addition Centres proposed at 50,000 clusters must have a minimum storage capacity to cater to the needs of the farmers in that cluster.

5.2.13 On Farm Storage Infrastructure

Since 60 percent of the food grain produced is stored at farm/farmer level in traditional storage structures that cause losses in terms of quality and quantity, promotion of scientific storage at farmer level is to be encouraged. Promotion of metal bins, pusa bins etc. can reduce losses substantially. The rural godowns at farm/farmer level with 50 to 100 MT capacity at village level owned by individual farmer or group of farmers or cooperatives can revolutionalise the storage practices. The scheme of Construction of Rural Godowns initiated by Government of India and implemented in X Plan has proved the need for scientific storage in rural areas. As brought out in the evaluation report on the scheme, creating scientific storage at farm level has helped the farmers in preventing distress sale and reduce losses. The rural storage structure of required size for multipurpose use, in every village either on community basis or individual farmer basis need to be promoted. The investment requirements for this is detailed under storage infrastructure. However, special incentives are required to promote small storage structures at farm level especially of the size of 10 to 15 MT. The ongoing schemes are required to be modified to meet this requirement.

5.2.14 Cold Storage Infrastructure

While India's strength in the horticulture sector has led to a large production base of fruits and vegetables, the enormous amount of wastage (estimated to the extent of 30 percent) due to the inefficient supply chain has prevented the farmers and processors from reaping the benefits. While efforts have been made by both public as well as the private sector towards developing warehousing facilities, but creation of cold chain facilities is yet to be taken up on a similar scale. Given the increasing demand for perishable produce by consumers, creation of cold chain from grower to the consumer is of crucial relevance for maintaining the quality of the product. This requires having control over various factors such as fluctuations in temperature and humidity and incorrect handling across the supply chain.

The present number of cold storage units in India is 4762 with a capacity of 196 lakh tonnes. However, most of the available capacity does not have facilities to

store a wide range of products across varied temperature ranges. An analysis of the various commodities going into the cold chain presently shows that potato constitutes almost 81 percent of the total capacity of cold storages being handled. On the other hand, storage of fruits and other vegetables (excluding major vegetables such as onion that do not need cold store facilities) accounts for only 0.2 percent of the total capacity and just about 0.1 percent of the total production of the fruit and vegetable production in the country.

The cold chain industry in India consists of a dozen large players such as Snowman, Frick India, Voltas Ltd, and Blue Star, that provide services ranging from refrigeration equipment and storage services to integrated logistics. However, the requirement of cold chain across the country by the stakeholders far outstrips the handling capacity of these players. Moreover, the services being presently provided rarely cover nationally leading to breakages in the cold chain and consequent produce wastage. The key issues in the Agri-logistics related to the development of the cold chain industry are of non-standard pricing, limited financial capabilities of the transporters, opportunistic profiteering, lack of scientific handling of produce and consequent high prices and limited choices for the consumers.

In addition to the above factors, the perishable nature of the commodity and the fact that the requirement for cold chain varies across each commodity even within the same class, makes the task very complicated. For example Mushrooms require 2 degree Celsius temperature and 90 percent humidity, Peas require 0-1 degrees Celsius temperature and 98-100 percent humidity, Beans require 4 to 7 degree Celsius temperature and 95-98 percent humidity, and Litchi requires 2 to 6 degrees Celsius temperature and 90 percent humidity. Frequent breaks in the cold chain (for example, even at the stage of loading into the aircraft) and the absence of dedicated fleet of cold chain enabled aircraft leads to the product (that may be as perishable and delicate as flowers) to be kept on the tarmac which is at temperatures sometimes exceeding 40 degree Celsius and consequent extreme variations in these parameters leads to frequent spoilage (such as browning and decay) and wastage of these commodities. In this respect, the experience of countries such as of Egypt and Kenya is noteworthy as these

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countries have taken a lead in the global fresh produce markets through a National Focus on Infrastructure and Policy Interventions.

The requirements for cold chain extend right across the product value chain and can be very complicated depending upon the nature of the produce and the ultimate customer preference. Two such routes are given below:

- (i) Harvest-Primary Market Transport-Secondary Market Transport-Processor-Consumer
- (ii) Harvest-Pre-cooling-Packaging- Reefer Transport-Perishable Center Handover-Dock Unloading-Dispatch-Tarmac-Aircraft

The development of the cold chain network must take into account the needs of the produce right from the farmer to the ultimate consumer. This would reduce not only wastage of produce but also lead to a greater income in the hands of the farmer.

5.2.14.1 Development of Cold Chain in Rural Areas

Development of Cold Chain in rural areas presents the biggest challenge due to lack of existing infrastructure, poor financial strength of the farmers in taking part on an individual basis (high cost of services) and security issues. This can, however, be circumvented through the adoption of an Integrated Cluster Approach involving aggregation of villages in the form of clusters, which can be done in an effective manner wherein infrastructural facilities (such as that required for pre-cooling and pack houses in case of fruits and vegetables and bulk cooling in case of milk) can be provided in a pooled manner to the farmers. This would not only provide stability to the operations in terms of scale and sustainability but also lead to an increase in the general level of quality of the produce. The concept of Pooling as practiced by farmers in the United States can be applied here as it would enable Risk Sharing, Improved Marketing and Market Power among producers besides going a long way in assuring Quality Control and Economies of Scale. Pooling refers to the combination of production from many producers under the marketing skills of a specialized staff. Towards this end, various initiatives being undertaken by the government such as that of Rural Business Hubs, and strengthening of cooperative/farmer organizations can be included in order to realize fully the benefits.

5.2.14.2 Development of Cold Chain in Urban Areas:

The development of cold chain infrastructure in the urban areas presents a larger challenge given that most of the fruits and vegetables flow to the primary markets from where it changes multiple hands before reaching the ultimate consumer. The nature of fruits and vegetables determines the storage condition as well as the length of storage. A good example is that of apples that are stored for an average time period of 3 months while flowers might stay only for a few hours. Given the lack of facilities along the transportation route and frequent hold ups at check posts and city borders, traders and farmers often face problems due to produce getting wasted and deteriorated in quality. The need of the hour, hence, is that of an effective cold chain network at these places in order to enable the transporter/owner to store the produce in a congenial atmosphere. The provision of cool chambers and Plug in points at border areas, check posts and at frequent intervals along highways would reduce the present problems encountered in in-transit storage. This can be especially of value at key arterial routes such as the Golden Quadrilateral (GQ) covering 7,300 km of North-South East-West (NSEW) corridor connecting Delhi, Mumbai, Chennai and Kolkata. The "Green Corridor" concept of China is a good illustration of the same. China opened a 27,000 kilometer agricultural transport network that facilitates the transportation of fresh agricultural produce, including fresh vegetables, fruits, aquatic products, livestock, meat, eggs and milk. Along the network, special passages are opened for vehicles carrying perishable products.

In the context of the above, the aggregated costs for providing cool chain facilities keeping the current storage capacities and benchmarking it with current production levels would work out to Rs 15700 Crore (considering facilities such as Pre-Cooling, Pack House Units, Ripening Chambers, CA Storages, Reefer Vans, CPC, Refrigerated ULD Containers, Refrigerated Containers, Retail Cabinets, Mobile Retail Cabinets).

Key assumptions taken in the estimation of requirement of Cold Chains include:

- 1. Onion does not need cold storage
- 2. Cold storage needs of potato has been considered separately owing to special storage needs
- 3. Cold storage needs of apple has been taken separately from other fruits considering that most of it is kept in controlled atmosphere storage units
- 4. Key infrastructure required for milk has been taken to be Bulk Coolers given that they have the potential to provide decentralized cooling option
- 5. Ripening chamber has been assumed for banana and this has been excluded from the quantity going into fruit storage
- Retail cabinets and mobile retail cabinets have been assumed given industry estimates of the retail sector to be reaching approximately 4000 formats(both large and small)

5.2.15 Farm Road Infrastructure

The GOI recognized the need to strengthen rural connectivity. It is a welcome development that under Pradhan Mantri Gram Sadak Yojana (PMGSY), 53,000 kms of new roads have been constructed, 27,000 kms of rural roads have been upgraded, and 37,000 habitations have been provided all-weather connectivity with an investment of Rs 15117 crore. Under Bharat Nirman program, the Ministry of Rural Development aims to build by 2009 about 146,187 kms of rural roads to link 66,802 unconnected habitations of over 1000 people and ensure full market connectivity by upgrading 194,132 kms of existing associated routes to improve rural connectivity. An estimated amount of Rs 40,000 crore is proposed to be invested.

Ideally, every landholding should have access to all weather road for the benefit of better post harvest handling of the agricultural produce. If it is not to that extent, farm road network should be such that, every field should be accessible to a road by a distance of not more than one km. That means every bit of 100 ha should have a connected farm road. This is more important in the irrigation command areas. Though the major irrigation command areas have taken up construction of ayacut roads, the achievement is far from satisfactory.

It is proposed to provide for optimum farm road infrastructure in selective clusters of National Horticulture Mission based on felt necessity for evacuating the perishable produce. With this infrastructure, these clusters should be developed as green corridors. Though fund from other on going initiatives of GOI and states will be dovetailed for farm road infrastructure, a critical gap fund need to be provided at the rate of Rs 5 crore for each NHM cluster to fill critical gaps. At least 100 NHM clusters may be taken up during the XI Five Year Plan. A total investment of Rs 500 crore is envisaged for this purpose.

5.2.16 Commodity Futures and Forward Markets Infrastructure

The expanding trade volume in the futures markets are of little significance, in the present, to farmers. No doubt, price discovery function is showing its effect through forward trading. However, the other important expectation of price risk mitigation for the farmers, through futures trading is far away from reality. The integration of futures markets with spot markets and creating enabling infrastructure such as warehousing, grading, bulk handling, efficient transport mechanisms etc. coupled with enabling regulatory mechanisms such as promotion of grading/standardization, warehouse receipt system, farmers' access for participation in the forward trading at their door step, demystifying the futures trading by extensive awareness creation, putting compulsory minimum requirement of 25 percent contracted value to be physically delivered in each transaction and effective regulation can ensure and achieve the objective of price risk mitigation for the farmers. The warehousing infrastructure and other items are already covered under appropriate items and hence no separate investment is projected.

The extension of futures trading, will be in the form of Electronic National Spot Markets, by which national markets without barriers can be created. The Commodity Exchanges have already initiated for creating such spot exchanges. In order to ensure that the farmers are at the focus of the initiative following precautions are indicated for adoption of spot exchange markets. These measures are essential to prevent the spot markets from becoming speculative trading hubs.

- (a) The membership of National Electronic Spot Markets should be freely available to all, including farmers. The membership should not be restricted only to the commission agents in the APMCs but should be permitted outside the APMC also. The tendency of monopolizing the membership by the commission agents of APMC should be prevented/discouraged. This practice will avoid monopoly situation.
- (b) National Electronic Spot Markets should own at least 25 percent warehousing capacity at each centre of delivery. Rest of the needed warehousing capacity can be arranged on accreditation basis. The rural godowns constructed under Central Sector Scheme may also be considered for accreditation for this purpose. The investment in the form of warehousing capacity will create confidence and depth for the spot markets which can remove the apprehension of fly-by-night including speculative operations.
- (c) The contracts in the spot markets invariably lead to delivery of the commodity and no trading should be allowed without corresponding physical delivery of the commodity.
- (d) Each terminal of the spot market should have permanent price display board with arrangement for display of the price related information of Agmarknet.
- (e) The mandi tax will be collected from the buyer by the member of the spot market and remitted to the APMC.
- (f) Since most of the States have amended the APMC Act facilitating direct purchase, the delivery of material by the farmer to the National Electronic

Spot Market warehouses, need not be through APMC License holder. Since the member of the National Electronic Spot Markets is also to be registered with APMC/ Mandi Board, the mandi fee payment will be the responsibility of the member/ broker.

- (g) Since farmers do not have the wherewithal to deliver the commodity at distant warehouses, National Electronic Spot Markets should ensure the availability of warehouses near to the farmer and at any cost not beyond 5 kilometers radius. If no such facility is available, transporting the commodity from the farmers custody to the warehouses shall be the responsibility of the National Electronic Spot Markets. This is required in view of the fact that dynamics of transport logistics may not be understandable by the farmers and hence the responsibility of transport should be left to the National Electronic Spot Markets. In such cases the grading of the commodity should be attended to at the farmers site itself.
- (h) National Electronic Spot Markets shall accept all grades of a commodity, may be at differential prices. Since the farm produce will not be of single grade and the farmers would like to dispose of his complete produce irrespective of the grade standards, National Electronic Spot Markets shall provide the facility for procurement of complete commodity which is segregated into different grade standards.
- (i) The certification of grading and standards should be done by approved graders of APMC/Mandi/DMI. The graders should get trained in grading and standards of agricultural produce under the supervision of Mandi Board/DMI for which the required infrastructure should be created. Such training modules can also be organized through NIAM for creating large number of graders and allied equipment in each of these areas.
- (j) It will be essential to create facilities for grading near to the farmer/village so as to enable the farmer to decide to take his produce either for spot market or to the APMC.

(k) The spot price that will be quoted by the buyer should be net payable to the farmer including the brokerage charge. The transport cost and other miscellaneous cost to deliver at warehouses should be borne by seller and the buyer should quote only the net payable price to the farmer.

Along with price risk management that is expected to be achieved by commodity futures, production risk management through appropriate insurance products is very crucial for sustaining agriculture. The insurance products that are now available are totally inadequate for this purpose. The recent innovative products such as whether insurance are likely to be a solution for filling the gaps. However, the infrastructure of whether data collection is highly inadequate. Setting up of automatic whether stations in Private/Public Private initiatives can be a solution. If required, such initiatives, on an area basis, need to be funded for filling the viability gap for setting up of such low cost automatic whether stations. These stations can be net worked through broad band connectivity and the data generated can promote the whether products for each crop and for each farm. Taking the cost of such automated weather station as Rs 1 lakh, setting up of about 50,000 stations would cost Rs 500 crore. Managing them for an initial period of initial three years, during which no income is likely to be generated, is estimated to be around Rs 360 crore(50000 stations X 3 years X 0.24per station per year). Thereafter, the stations will be generating income to sustain further. The whether data can be used for not only promoting crop specific, location specific, season specific insurance products, but also for promoting precision farming with high value agriculture.

5.2.17 Centres for Perishable Cargo (CPC)

The APEDA has created many types of infrastructural facilities at number of airports. However, the infrastructure created does not address the problem of cool chain management and quick evaluation of produce at airport/sea ports. The cumbersome exports facilitation and multiple agency handling also add fuel to the fire. The infrastructure for managing the seemless handling of perishable cargo should be available at important air/sea ports. The state-of-art infrastructure proposed at Amritsar international airport with an estimated cost of Rs 20 crore is likely to be the role model for replication at all air and sea ports. It

is proposed to take up this at 15 locations for creating such infrastructure in PPP model with an estimated investment of Rs 300 crore during XI Plan period.

5.2.18 International Facilitation/Transshipment Centres

In order to facilitate the nascent effort of exporting the agri-produce, common infrastructure for storage or transshipment or display should be created at important destination points in other countries. The infrastructure could be in the form of leased space. This can facilitate the export by the beginners. No specific provision has been earmarked as the requirement need is to be assessed based on present pattern of exports, destinations and future markets.

5.2.19 Quality and Food Safety Infrastructure

With the establishment of the World Trade Organization (WTO) and signing of non-tariff agreements, viz. Agreement on Sanitary and Phyto Sanitary Measures and Agreement on Technical Barriers to Trade, the international scenario for food trade has rapidly changed and opportunities are available to all countries to benefit from greater access to world markets. In the given scenario, the role of standards and conformity assessment has become very important in ensuring that the product is safe and is of the desired quality. It is necessary that certain rules and regulations are followed so that the standards/regulations do not act as unreasonable barriers to trade. This aspect has been taken care of through the non-tariff agreements, which basically lay down the rules and discipline with regard to standards and conformity assessment procedures for international trade.

These Agreements basically aim at free flow of trade by adherence to international standards in respect of quality and safety, safety management systems, laboratory testing and conformity assessment (inspection and certification) systems and mutual recognition by member countries of each other's systems. Such mutual recognition is further based on establishment of accreditation mechanisms in each country for inspection, certification or laboratory testing activities based on widely-accepted international criteria.

Food safety is a growing concern across the world. There is increasing need to provide greater assurance about safety and quality of food to consumers. Compliance with international food standards is a pre-requisite to gain a higher share of world trade. At the same time there is growing consciousness among Indian consumers (given recent controversies) on safety of many food products.

The capacity of our country to penetrate world markets depends on its ability to meet increasingly stringent food safety standards followed in developed countries. Food standards are expected to acquire greater importance, given increasing concerns on food safety on the back of breakout of diseases such as BSE and Avian on the one hand and growing consumer demand for products which are healthy on the other. Therefore, compliance with international food standards is a pre-requisite to gain a higher share of world trade. The existing mechanism for setting and harmonizing food standards is not adequate in the context of the increasing importance of food hygiene and safety and evolution of international standards. This is due to limited infrastructure for food testing and generating/analyzing scientific data. Many laboratories do not have basic facilities to test available pesticide residues, antibiotic residues, heavy metal contamination and other toxic contaminants in food products.

"Vision, Strategy and Action Plan for Food Processing Industries in India" prepared by the Ministry of Food Processing Industries, cited the needed infrastructure of 140 government and 50 private laboratories in the country. The Report mentioned that industry is of the view that the current level of infrastructure for testing, referral services, development of standards and equipment is highly inadequate. The laboratories are not only insufficient but also lack world-class facilities and infrastructure. Many laboratories are not equipped even with basic facilities. The four-tier structure of the laboratories envisaged is as follows:

• National level laboratory should be at par with the international benchmark in all respects. It should be able to cater to the

international export requirements. The laboratory should be a role model for other laboratories in terms of maintaining the accreditation system, test protocols, reference materials and manpower training.

- Regional level laboratory should be identical in all respects with the national level laboratories. While performing their own task, they should also work as support laboratories to the national level laboratories.
- The state level laboratories should be able to perform the regulatory testing as under PFA, AGMARK or ISI requirements.
- The local laboratories should be able to perform the basic chemical and microbiological tests and may keep themselves upgraded to cater to the local industry demands.

Ministry of Food Processing Industries have also commissioned a study to assess the status and needs of food testing laboratories and their capabilities. The study is expected to provide a blue print on the following:

- Mapping food testing laboratories in the country (Public and Private) classifying them into four-tiers viz. national, regional, state and local.
- Identify requirements for a model food laboratory.
- Identify gaps in infrastructure, equipments, manpower, sampling/testing protocol in the existing laboratory and resources required to fill the gaps.
- Suggest location for setting up new laboratories to ensure regional dispersal.
- Suggest mechanism of networking of all R&D institutions and food labs.
- Identify laboratories which can provide input to Codex committees, and participate in method validation, and method development.

 Evaluate existing system of accreditation, certification, monitoring of such laboratories by NABL and suggest ways and means for developing uniform laboratory standards, methods and calibration procedures.

Ministry of Health and Family Welfare is implementing the provisions of Prevention of Food Adulteration Act, 1954. Recently Ministry of Health and Family Welfare have issued a Notification in PFA Rules, 1955, wherein it is required that complete nutritional information per 100 gram of the product shall be given on the label of pre packaged food. The information shall include (a) energy value in K J or K Cal (b) protein, carbohydrate, fat in food expressed per 100 gram (c) type of fatty acids, and (d) vitamins and minerals. The industry has been given six months time to comply with the labeling requirements. The provisions of the Notification will be required so that small scale industries can get their samples analyzed for declaring the correct information on the label. Non-compliance with the provisions of the Rules may lead to prosecution.

Conformity assessment relates to methods of inspection, sampling, testing, certification, accreditation, etc. Uniform and standardized conformity assessment techniques are essential for credibility in test results and thereby ensuring safety of the food product. Issues such as accreditation of laboratories and inspection and certification activities are important. In our country, capability in terms of equipment and manpower needs to be strengthened in terms of state-of-the art equipment and manpower that is qualified and trained to operate such equipment. The laboratories need to be accredited to National Accreditation Board for Testing and Calibration Laboratories (NABL) as per international standard ISO 17025 to ensure that adequate quality controls are in place to provide reliable test results. NABL is an autonomous body under the aegis of Department of Science and Technology, Government of India and is solely responsible for third party assessment of the quality and technical competence of testing and calibration laboratories in the country. It is essential to strengthen laboratories to ensure that products exported meet the SPS requirements of the importing country and there are no unnecessary rejections. In addition, recognition and networking of public as well as private laboratories within the country may be useful.

Based on present requirements in the PFA Rules, It is felt that of the four tiers of laboratories proposed by the Ministry of Food Processing Industries, two tiers namely, local laboratories and regional level laboratories are not relevant. In place of this, there is need to develop a two-tier food testing infrastructure in the country. The objective is to enhance the usage of food testing laboratories as well as to optimize resources available. The laboratory at the first tier shall be at least one in each district and this should analyze food samples for quality parameters, nutritional facts viz. protein, fat, carbohydrate percentage, types of fatty acids, vitamins, minerals, etc. and food safety parameters viz. residues of pesticides, heavy metals, mycotoxins, and microbiological parameters. Though the ultimate aim may be to accredit the laboratory to NABL, it may not be necessary in the beginning. The laboratory shall be used by Small Scale Industry for estimation of quality and safety parameters in addition to nutrition information which is required to be printed on the label (made mandatory in the PFA Rules).

The laboratories at the second tier shall be at least one in each state and at all ports of import. It shall have sophisticated instruments for the estimation of quality parameters, nutrition facts, food safety parameters and microbiological parameters as mentioned above. The laboratory shall be accredited to NABL. The analytical data generated by these laboratories shall also be used for framing of standards in various sub committees of Central Committee for Food Standards as per the provisions of Prevention of Food Adulteration Act, 1954 and various Committees of Codex Alimentarius Commission to protect the interests of the people of country.

The first-tier food testing laboratory should be able to estimate quality parameters, nutrition facts and food safety parameters. Cost of equipment, chemicals, and reference standards, shall be around Rs 75 lakhs as detailed below (excluding the cost of building, furniture, and manpower).

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Total	– 75 lakhs
Computer, books, publications, etc.	– 2 lakhs
Microbiological media	– 1 lakh
Reference standards	– 5 lakhs
Glassware	– 1 lakh
Chemicals	– 1 lakh
Equipments	– 65 lakhs
	(in Rupees)

The equipment includes GC, HPLC, AAS, UV-VIS Spectrophotometer, electronic balance, viscometer, refractrometer, visible spectrophotometer, and Digital potentiometer.

The second-tier food testing laboratory will be more sophisticated than the firsttier laboratory. It shall have the sophisticated instruments like GC MS and LC MS, and HPTLC, for more accuracy and for confirmation in addition to the equipments described for first-tier laboratory. The cost of these equipments is approximately Rs 300 lakhs. As such the cost of the laboratory shall be approximately Rs. 375 lakhs. It does not include the cost of building, furniture, and manpower. It is proposed to establish 500 first-tier and 50 second-tier food testing laboratories in the country. The estimated cost is Rs 750 crores as shown in Table 5.8.

Table 5.8

Cost of Proposed Food Testing Laboratories

Category of the Laboratory	Number	Unit cost (Rs Lakhs)	Total cost (Rs Lakhs)
First tier	500	100	50000
Second tier	50	500	25000
Total	550		75000

5.2.20 Promotion of Good Agricultural Practices (GAP)

Food safety has traditionally focused on enforcement mechanisms to remove unsafe food from the market instead of the prevention of food safety problems. Generally, the orientation of many food safety systems tend to be reactive and defined by enforcement criteria instead of preventive and holistic in approach to risk assessment and reduction. Integrated strategies for reducing most significant risks throughout the entire food chain should be incorporated into any strategic direction in food safety systems. The Government as a preventive approach has proposed the Food Safety and Standards Bill, 2005, which has been passed by the Parliament and lays emphasis on Food Safety Management Systems.

The production of safe food requires that all the stakeholders along the food chain should recognize that the responsibility lies with those who produce, process and trade in food. It covers the whole food chain from primary production to final consumption. Primary production refers to initial steps in the food chain from where food originates. Effective controls at the point of primary production are essential in assuring the quality and safety of the final product. The primary producer (farmer) should apply appropriate level of control to reduce the likelihood of introducing a hazard which may adversely affect the safety and suitability of food at later stages of the food chain. More specifically, primary producers should apply measures (GAP) to minimize potential food safety hazards arising from the soil, water, fertilizers, pesticides or any other agent in process of primary production.

The development of a food chain approach to food safety and quality has profound implications for agricultural production and post-production practices and offer opportunities to address sustainable use of resources. FAO's definition of food chain approach recognizes that the responsibility for supply of safe, healthy and nutritious food is to be shared along the entire food chain by all those involved with the production, processing, trade and consumption of food. This approach encompasses the whole food-chain from primary production to final consumption.

The concept of GAP has gained importance in recent years in the context of a rapidly changing and globalizing food economy and as a result of the concerns and commitments of a wide range of stakeholders about food production and security, food safety and quality, and the environmental sustainability of agriculture. GAPs help to meet the specific objectives of food security, food

quality, production efficiency and environmental benefits in both medium and long term.

Broadly defined, GAP applies available knowledge to addressing environmental, economic and social sustainability for on-farm production and post-production processes resulting in safe and healthy food and non-agricultural products. Many farmers in the country already apply GAP through sustainable agricultural methods such as Integrated Pest Management, and Integrated Nutrient Management. At present, GAP is formally recognized in the international regulatory framework for reducing risks associated with the use of pesticides, taking into account public and occupational health, environmental, and safety consideration. The use of GAP is also being promoted increasingly by the private sector through codes of practice and indicators developed by food processors and retailers in response to emerging consumer demand for sustainably produced wholesome food. This trend may create incentives for the adoption of GAP by farmers by opening new market opportunities.

An example of promotion of GAPs by the private sector is EUREPGAP. EUREPGAP is a private voluntary international farming standard that was initiated by European retailers for farmers to comply with Good Agricultural Practices on horticultural products. EUREPGAP standards address compliance with food safety of the product; environmental farm management; and worker health, safety and welfare. Indian farmers exporting horticulture produce to European countries are adopting EUREPGAP standards and getting their farms certified as per the laid down procedure. It is being done to comply with the demand from European buyers. A project was launched by the Federation of Indian Chamber of Commerce and Industries (FICCI) with the cooperation from Norwegian Agency for Development Cooperation (NORAD) to create awareness and promoting requirements of EUREPGAP standards by demonstrating their use by implementing them in a few farms which could act as a model for large scale application. APEDA is also involved in the project. Under the project, training is provided to trainers, awareness seminars were conducted to explain the concept and training of auditors for certification was provided. Few farms were selected as model farms where training on all aspects was provided to the farmer/manager.

The example of promotion of GAPs by the Government is available in Malaysia. In January 2002, Malaysia launched its Farm Accreditation Scheme with the acronym SALM. This Scheme recognizes and accredits commercial farms which adopt GAPs that are environment friendly and yield farm products that are of quality, safe and suitable for human consumption. The Scheme is a national programme implemented by the Ministry of Agriculture. SALM accreditation is a value added incentive for farmers producing food commodities by adhering to GAPs. SALM is based on the concept of inspection and evaluation of commercial farms and farming practices for conformance to accepted and defined protocols, national guidelines, standards legislation and policies.

APEDA had prepared a document IndiaGAP based on EUREPGAP, Codex guidelines on GAPs and Indian conditions. The document provides procedure for farm certification, guidelines for certification of grower groups, accreditation criteria, and accreditation procedure. The major benefits of certification include uniform approach to good practices, development of farm infrastructure, improvement in environment and soil fertility, availability of safe and healthy food, employment generation, increased competitiveness (value addition, credibility) and better returns to farmers.

Following steps are proposed for the implementation of India GAP:

- (a) Acceptance of India GAP document and its notification in a suitable Act.
- (b) Identification of an implementing agency.
- (c) Training programme of 20 officers from each State in India GAP certification. These officers shall organize awareness programmes in their State to publicize India GAP.
- (d) Steps to provide publicity to the certification programme. Since most of the farmers in the country are small and marginal players, the ideal step forward would be to encourage farmers to form

groups for the certification programme so that the cost could be reduced. Agricultural graduates can take up assignments to work as coordinators of the farmers in the group to implement the Internal Control Systems.

(e) Some farms may be identified for development as model IndiaGAP certified farms in each district for demonstration and replication by other farmers.

The investment requirement for India GAP is Rs 193.50 crores as shown in Table 5.9. Farmers should have infrastructure for storage of fertilizers, pesticides and cleaning and washing facilities. It is estimated that the cost for infrastructure and certification will be Rs 1 lakh. The cost will come down when small farmers form a group and take certification. The amount may be spread over five years of XI Five Year Plan.

	I		
S.	Activity	No	Financial Requirement
No.			(Rs Lakhs)
(i)	Training of trainers sponsored by State Government	500	50
(ii)	Publicity and training material in regional languages	Ι	300
(iii)	Awareness and training programmes of farmers	2000	8000
(iv)	Development of model farms	1000	1000
(v)	Subsidy to farmers for creating infrastructure and	10000	10000
	certification	clusters	
	Total		19350

Table 5.9

Investment Requirements for India GAP

5.2.21 Promotion of Farmers' Organizations for Marketing

As mentioned earlier, inefficient marketing system leads to an avoidable waste of around Rs 50,127 crore. A major part of this can be saved by introducing scale and technology in agricultural marketing. Milk and eggs marketing are two success areas of role of scale and technology in marketing. The extent to which the farmer-producers will benefit (out of saving of avoidable waste) depends on the group-marketing practices adopted by the farmers. In this sense, farmers' organizations need to be promoted for undertaking marketing activities on behalf of the individual members of the group.

While looking at the options for promoting marketing based farmers' organizations, cognizance of existence of the following three groups of organizations needs to be taken:

- (i) There is a network of farmers' cooperative organizations promoted during the last five decades. These include national level cooperatives (NAFED, TRIFED); state level general and commodity specific organizations, and primary level marketing and credit societies. Primary level marketing cooperatives have mainly remained preoccupied with input supply rather than output marketing. The PACS at the village or cluster level mainly handled credit and inputs rather than output. Nevertheless, in some states (Gujarat, Maharashtra) and for some commodities (milk, oilseeds, sugarcane), cooperatives have played an important role in output marketing too.
- (ii) During the last two decades, large number of self-help groups (SHGs) have emerged in the country. A nation-wide programme to link SHGs to the banking system was launched in 1992. Currently, there are three types of SHGs viz. (a) formed and financed by banks; (b) formed by other agencies but financed by banks; and (c) financed by banks using NGOs. Up to March, 2004, there were 10.8 lakh SHGs linked to the banks and 90 percent of these were women groups. However, micro-finance programme did not explicitly target the agricultural sector. Extending SHG programme to farmers will require internalization with PACS, which may not be easy.
- (iii) In recent years, Krishi Vigyan Kendras (KVKs) and other organizations have formed commodity based farmers' clubs, which is a good initiative.
 NABARD has organized 13664 farmers' clubs up to March 31, 2005.

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(iv) There is an initiative to promote joint liability groups of farmers by NABARD for involving them in various developmental programmes. These groups can also be used as focal points.

Based on the international experience, in view of expanding retail trade, organizing the farmers and equipping the organizations can facilitate the aggregation of produce and also enhance the bargaining power of the farmers. The experience in Malaysia, Thailand and Philippines indicate that the retail chains will depend on some intermediary agency for sourcing the produce. If this role can be taken by the farmers' organization, the commodities can move directly to the market without any intermediary. Further, adoption of technology both in production and post-harvest management which is expected to flow from the organized retailers and other research institutions can be efficient through the farmers' organizations. There is no single model for organizing the farmers' institutions, various models could be adopted. The model of farmers' marketing organizations cannot be the same throughout the country. It can be cooperatives, SHGs or any other form. The critical factors for their success would be:

- Involve NGOs or some SHG-promoting institutions.
- It should be a homogenous and cohesive group of farmers.
- Freedom to the group to decide membership and terms of functioning.
- Linkages with higher level organizations for marketing and processing.
- Function in a network (Hub and Spoke) model.
- Promoting Vertically Integrated Societies/Farmers Groups with appropriate processing, grading and packaging facilities at different locations on the pattern of milk marketing network or in a 'hub and spoke' mode.
- Intensive training of farmers in quality standards and specifications.

The farmers' organizations usually suffer from lack of professional managerial capability to meet the changing market requirements. The farmers' organizations should be provided initial seed capital for building the organizations and also
hand holding for some period by professional managers. A basic minimum infrastructure is required for each organization for their effective functioning. Therefore, it is proposed to provide government support at the rate of Rs 5 lakhs for each farmer's organization for supporting infrastructure. It is proposed to assist 5000 such farmers' organizations in the country over a period of five years. Total investment requirement comes to Rs 250 crore. Various ongoing programmes can be dovetailed to provide this support.

5.2.22 ICT Infrastructure

Networking the production centres and markets through ICT will be the new strategy for taking the Indian farmers to the global markets and raise to the global standards. Marketing Intelligence is likely to play crucial role in enhancing the farmers income. ICT will be a major tool for this purpose. While modernizing the existing markets, use of ICT will be a compulsory component for brining transparency in the marketing activities and improving the marketing efficiency. The existing effort of "Agmarknet" portal must be strengthened to take it to the next orbit. The "Village knowledge/Information Centres proposed to be set up may become centres of marketing knowledge dissemination for the farmers. The major challenge for effective use of this infrastructure is going to be the content creation. A PPP initiative in collaboration with Research Institutions/State Agricultural Universities is likely to be the answer for this problem. There is no need for separate allocation for ICT as this is being proposed separately in sixth section of this report.

5.2.23 Total Investment Requirements

Total investment requirements on creation of new marketing infrastructure as proposed based on the likely production/marketed surplus of agricultural commodities is summarized in Table 5.10. It is estimated that the total investment in agricultural marketing infrastructure during the XI Five Year Plan needs to be of the order of Rs 64312 crores.

Table 5.10

Infrastructure Investment Outlay for the XI Five Year Plan

S. No.	Infrastructure	No.	Unit cost (Rs lakhs)	Total (Rs	Appropriate PSP Option	Private Sector
				Crore)		Outlay
1	Development of Whole sale markets					
	a) Principle Markets	2428	300	7284	BOT	3000
	b) Sub markets	5129	100	5129	BOT	1000
2	Rural Primary Markets	5000	25	1250		
3	Primary Value addition Centres and Soil health mgt infrastructure	50000	30	15000	Concession	5625
4	New Wholesale Markets	75	1000	750		750
5	Livestock Markets	1000	20	200		
6	Terminal Markets	35	5000	1750	Concession	1300
7	Apni Mandis/Direct Markets	1152	50	576		
8	Markets for Spices Crops	50	50	25		
9	Storage capacity (Million MTs)	6.67	0.03	2000		
10	Cold storage (lakh tons)	45	0.045	15708	Concession	11500
11	Specialized Commodity Markets (F&V)	241	2000	4820	Concession	3600
12	Flower Markets	10	1500	150	Concession	100
13	Medicinal and Aromatic and Forest Produce Markets	500	100	500		
14	Modern abbattoirs	50	1000	500	BOT	500
15	Retail Market Infrastructure for Poultry	1000	500	5000	BOT	2500
16	Centre for Perishable Cargo	15	2000	300		
17	Farm Road Infrastructure/Green corridors	100	500	500		
18	Quality and Food Safety Infrastructure	500	100	500	BOT	250
19	Specialized Quality and Safety Infrastructure	50	500	250		
20	GAP and Certification Infrastructure	100000	1	1000		
21	Model Farms for India GAP Certification	1000	1	10		
22	Farmers' Organizations support infrastructure	5000	5	250		
23	Post Harvest Mechanization Infrastructure					
24	R&D infrastructure for Market led production					
25	Production risk management infrastructure- setting up of automatic weather stations	50000		860	BOO	500
	Total			64312		30625

5.3 SOURCES OF INVESTMENT

As brought out in section 5.2, large investments are required for linking the farmers with the markets and meeting the changing requirements of the consumers; domestically and globally. On examination of the projected investments under each category of the infrastructure, it may be noted that the investment is not expected from the Public and the private sector under all categories. The source of investment will have to be a mix of public (Central, State, Mandi Boards, RIDF, external funding agencies) and private. A brief on each of the above sources is given in this section.

5.3.1 Rural Infrastructure Development Fund (RIDF)

NABARD is supporting infrastructure creation through RIDF loans to various State Governments. By end of March 2005, RIDF sanctions, under all the tranches, amounted to Rs 42948 crore. As against these sanctions, the disbursement was only Rs 25384 crore. It is generally seen that this funding is mainly utilized in road network creation (upto Block roads), and medium and minor irrigation projects. This funding is rarely utilized for filling the gaps in agricultural marketing infrastructure. As on March 31, 2006, only an amount of Rs 80.92 crore has been sanctioned under RIDF for various projects related to agricultural marketing. Though the complete array of marketing infrastructure projects can be taken under RIDF by the states, it is usually not done as the states priority lies elsewhere.

Considering the importance of creation of agricultural marketing infrastructure for enhancing the income of farmers and sustaining the activity of agriculture, a major chunk of funding under RIDF should be channelised for the projects in creation of marketing infrastructure. Based on the outlay during 2005-06, it is expected that the fund flow under RIDF will be to an extent of Rs 8000 crore per annum during the XI Plan period. Nearly 30 percent of this allocation can be earmarked for the projects related to agricultural marketing infrastructure.

Government of India should see that 30 percent of the fund available under RIDF each year should be allocated for creation of the marketing infrastructure. Thus,

it is estimated that Rs 12,000 crore (2400 x 5) can be made available for marketing infrastructure projects. Since this funding is to the States, the marketing infrastructure which is of public nature i.e. where the private sector may not be willing to invest due to commercial viability, should be taken up under this funding. The infrastructure creation for rural primary markets, primary value addition centres, livestock markets, Apni Mandis, medicinal and aromatic and forest produce markets, quality and food safety infrastructure, and farmers' organization support infrastructure can be funded under RIDF.

Since the utilization under RIDF is slow, extensive capacity build up within NABARD for project preparation in agriculture marketing sector should be undertaken in addition to the capacity building of the agricultural marketing administration in the states. The first year of the XI Five Year Plan should be utilized for preparing project reports in all states for creating the above infrastructure and the remaining four years should be used for executing the projects. Certain amount of operational flexibility should be permitted to NABARD and states should complete the above activities in the XI Five Year Plan.

5.3.2 Agricultural Produce Market Committees (APMCs)

The regulated markets are managed by APMCs and their main source of income is in the form of licence fee, market fee and other charges. Based on the data compiled by DMI for the year 2004-05, the total income of APMCs for 18 states during 2004-05 was Rs 2095 crore. Of this amount, Rs 364 crore was utilized for establishment, Rs 593 crore on development and Rs 394 crore contributed to the State level Mandi Boards. The balance amount of Rs 743 crore is available with the respective APMCs. It is also seen that the development expenditure incurred by the APMCs is mainly in the form of rural road creation, creation of marketing infrastructure and other farmer-welfare activities. In view of the deficiency of marketing infrastructure as discussed earlier, the income of APMCs is to be channellised for creation of marketing infrastructure which is likely to give immediate returns to the farmers. The state governments must prioritize the development expenditure so as to focus on essential infrastructure creation. It is expected that an amount of Rs 1000 crore per annum be invested by the APMCs in creation of marketing infrastructure. Thus, an amount of Rs 5000 crore can flow towards creation of marketing infrastructure.

Since the funds available with the APMC is still limited, the Committees must identify investment opportunities for the private sector so that the private investments can be tapped to create the infrastructure. The resources available with APMCs should be so utilized to incentivise the private investment or providing common facilities in which private sector can create specialized infrastructure. As mentioned above, 36 percent income is spent on establishment and contribution to the Board. It is also seen that there is sizeable leakage in the revenue collection. It is suggested that the Committees must outsource important activities wherever possible which is likely to reduce the establishment expenditure and also improve the revenue. The initiative of Madhya Pradesh Mandi Board in outsourcing the data collection of arrivals/auctions of the produce in about 60 markets has indicated that the revenue flow will improve to the markets. Such outsourcing can also help in creating the infrastructure through private investment. It is also assessed that the modernization of principal markets and sub-markets can be done on PPP basis. The private investment is assessed to contribute to the extent of about Rs 4000 crore in the modernization efforts of principal markets/sub markets. The states must provide enabling environment for such partnerships.

5.3.3 Private Sector/Public Private Participation

Considering the large investment requirement, the private sector participation is crucial for creating the necessary marketing infrastructure. Given the fact that private sector investment is governed by commercial principles, all components of proposed infrastructure cannot be expected to be created through private sector. Every component need to be seen as to the attractiveness from the point of view of private sector and accordingly encourage their participation. The agricultural marketing sector is no doubt an attraction especially due to the growing market for the agricultural produce, enhanced value addition in terms of processing, increasing interest of other countries on India as major sourcing Hub of agricultural produce, increased investments in the retail sector which would require backward integration through creation of infrastructure, etc. The sector though provides opportunities for private investment in creating the infrastructure in number of areas such as cold storage facilities, warehouse infrastructure, controlled atmosphere facilities, transport logistics, etc., the sector being a green field area, state participation/state support will be crucial for effective private sector participation. The Public Private Participation is going to be very crucial in this area.

5.3.3.1 PPP Framework

While PPP denotes the collaboration between a public and a private stakeholder defined by a contract, the key objectives envisaged while structuring the appropriate private sector participation options (PSP Options) to actualize PPP in the present context are:

- Acceleration of the delivery of market infrastructure services to key stakeholders
- Funding of the additional necessary infrastructure investment
- Actualization of service efficiencies and economic efficiency and innovation
- Transfer of appropriate risk to private sector

Successful examples of PPP world over point to the following prerequisites which have been met to maximize synergistic impact of PPP –

- ✓ Each partner formulates clear goals and communicates them to the counter party
- ✓ The partner's contributions complement each other in a way that enables both to achieve their goals more efficiently using PPP than in "alone" formats
- Public partner does not finance the private partner's core business but provides subsidiary support
- \checkmark PPP should not distort trading conditions
- PPP enables the private partner to pursue its economic goals and the public partner to pursue its developmental goals
- \checkmark Sustainable use of natural resources should be the main objective

5.3.3.2 PSP Options

- ✓ Service Contract
 - Private sector performs a specific operational service for a fee
- ✓ Management Contract
 - Private sector pays fee for operating and maintaining a govt owned business and making management decisions
- ✓ Lease
 - Private sector leases facilities and is responsible for operation and maintenance

✓ Concession

- Private sector finances projects and also has full responsibility for operations and maintenance while government owns the asset and full use rights return to it after a specified period
- ✓ BOT/BOO
 - Similar to concessions but normally used for greenfield ventures where private sector receives fee for the service from users

✓ Divestiture

• In full, gives the private sector the full responsibility but unlike concession, transfers ownership of assets to private sector

The requirements of PSP options and categorization of PSP options based on role responsibility and risk profile are given in Tables 5.11 and 5.12.

The recent initiatives of the Government of India for public private participation especially in creation of bulk storage in collaboration with FCI is in the right direction. Similarly, the initiative for creation of Terminal Market Projects at selected locations is another good example for roping in the PPP investment. The modernization of existing markets and outsourcing the services are the other areas where PPP options can be explored. Depending on the component of infrastructure, Public, Private and PPP options and likely investments from the private sector are given in Table 5.10.

Table 5.11

Requirements for PSP

Options Stakeholder Support		Cost Recovery	Information requirement	Regulatory Framework	
Service Contract	Prvice Contract Unimportant		Limited Information Necessary	Minimal Monitoring required	
Management Contract	Low Level Required	Preferred but not necessary	Sufficiently Required	Moderate Monitoring	
Lease	ASE Moderate to Nece High		Required	Strong Capacity	
Concession	High level	Necessary	Required	Strong capacity	
BOT (Build Operate Transfer)	Moderate to High	Preferred	Required	Strong capacity	
Divestiture	High level	Necessary	Required	Strong capacity	

Table 5.12

Categorization of PSP Options Based on the Role, Responsibility and Risk Profile

Option	Asset ownership	Operations and Maintenance	Capital investment	Commercial risk	Duration
Service contract	Public	Public and private	Public	Public	1-2 years
Management contract	Public	Private	Public	Public	3-5 years
Lease	Public	Private	Public	Shared	8-15 years
Concession	Public	Private	Private	Private	25-30 years
Build Operate Transfer	Private and then public	Private	Private	Private	20-30 years
Divestiture	Private or private and public	Private	Private	Private	Indefinite (may be limited by license)

5.3.4 Central Funding

Based on the scope of private sector participation, involvement of the State Agricultural Market Committees/Mandi Boards and dovetailing the funding from RIDF and other Ministries, the contribution of Government of India for creating the marketing infrastructure is assessed to be of the order of Rs 16687 crore. This is after taking the likely investment flows of Rs 12,000 crore from RIDF (mandating 30 percent of RIDF for marketing infrastructure), 5000 crore from internal resources of State APMCs/Mandi Boards and likely flows of Rs 30625 crore from the private sector participation. The Central funding is to be utilized for continuing the on-going schemes of marketing infrastructure creation with due modifications and formulating new programmes for incentivising the private sector participation.

5.3.5 Essential Measures for Actualizing Needed Investments

Private investment/public private partnership requires policy support from the Government both in terms of creating legal environment, stable policy perspective and financial incentives. Following measures are required to be taken for creation of favourable environment:

5.3.5.1 Wholesale Markets Management

- 1. Agricultural marketing reforms initiated must be taken to logical conclusion by operationalizing the amendments as envisaged by the model Act. Rules must be notified by the States and publicize the reform measures among all stakeholders.
- 2. Licensing procedures is to be simplified. An entrepreneur should be able to apply for a single unified license at the state level to enable procurement in any district or market without hindrance or requirement for additional paper work. In other words, single unified license for buying, procuring, selling of inputs, storage, and processing of all agriculture commodities for the State as whole be introduced.

3. Allowing professionally managed Wholesale markets. The existing markets could be leased for up-gradation and management on long term contracts or convert them into public–private partnerships. There is dire necessity for organization of markets as a service industry, and allow markets to be set up by the private sector and farmers' cooperatives. This will attract private investment in creation of much needed marketing infrastructure, create competition and ensure better service to the farmers.

5.3.5.2 Alternate Market Channels

- 4. Develop alternative marketing models like:
 - Contract farming without unnecessary restrictions The role of the government should be to facilitate contract farming & not controlling it.
 - b. Private mandis should also improve management and quality of services being provided by them.
 - c. Rationalize mandi tax and incentivise the states for the same.

5.3.5.3 Grading and Standardization

- 5. Promote grading and standardization for Agri-Produce including fruits, enabling sorting and certification on standardized basis, so that disputes on price quotation may not be there.
- 6. Incentivise creation of facilities for collection, sorting, grading and transportation of agricultural produce to processors/markets.
- Encourage Foreign Direct Investment (FDI) in food retailing with due safe guards of protecting the existing retail corner stores/employees of these stores.
- Facilitate Food Retail Supply Chains' backward linkage with farmers through contract farming mode. This provides market opportunity at fair prices to farmers, as middlemen have no role.

5.3.5.4 Risk Management

- 9. Make the commodity futures trading more farmer-friendly and build capacity.
- 10. Provide safety net to farmers by financial risk management.
- 11. Introduce effective agricultural insurance.
- 12. Invest in export market intelligence collection and dissemination.
- 13. Create multi-channel strategy like credit bureau for the farmers to bear the problems of financial risks.

5.3.5.5 Warehouse Receipt System

- 14. Promote development of a Negotiable Warehousing Receipt System and pledge financing for agricultural commodities.
- 15. Set up an accreditation agency for certified warehouses and warehouse receipts. Encourage private sector, cooperatives and panchayats to set up rural godowns. Specify standards and permit warehousing receipt system.

5.3.5.6 Fiscal Incentives

- 16. Exempt various taxes and levies arising on the negotiability of the warehouse receipts.
- 17. Cascading effect of multiple taxes (mandi tax, purchase tax, sales tax, commissions, octroi and entry tax, tax on basic raw materials etc.) at different stages from harvesting to marketing must be rationalized and drastically reduced.
- 18. There is a need for bringing uniformity in the state-level tax structure in agricultural commodities for improving the market efficiencies. Taxes and

fees on raw agricultural commodities should be rationalized, with a limit ceiling limit of 4 percent. In principle, raw agricultural commodities should attract zero tax (including purchase tax, mandi tax, commission of agents, and so on, which in Punjab today accounts for about 11 percent on wheat). This can be done by allowing grain companies/traders to buy directly from farmers without going through commission agents, and abolishing purchase/sales tax.

- 19. Octroi and Entry Tax should be abolished wherever exists. Uniform Value Added Tax (VAT) in agriculture, should be introduced in the following manner, which should help the growth of the agro-processing industry:
 - On processed products of a perishable nature zero percent
 - Other processed foods (excluding tobacco and alcoholic beverages) – 4 percent
- 20. There is need to abolish or reduce fees, cess, taxes, and duties on procurement of agricultural or horticultural produce through any registered contract-farming programme. This would promote direct procurement, improve quality of produce and lead to reduction in the load on the State and Central procurement system.
- 21. The Ministry of Finance should consider tax incentives for bio fuels and industry equipments used for converting agri substitutes into usable grade bio fuels. The tax incentives can be provided by reducing/exempting excise duties, sales tax, and VAT.
- 22. Provide capital subsidies to processing industries along with subsidized interest rates for setting up bio fuel plants and provide tax/duty concession for the bio-diesel producers.
- Develop new structures (pure returns model) where both government and private participation has equity investment and work on commercial principles.

24. Treat 150 percent of investment by private sector in agricultural marketing infrastructure chain as deductible expenditure like in the case of R&D, for the purpose of income tax.

5.3.5.7 Increase Public Investment in Agriculture

- 25. Bring substantial jump in public investment as suggested in this report.
- 26. Investments in the entire agri-value chain like creation of cold chain, new agricultural marketing infrastructure or modernization of existing markets should be eligible for agricultural loans under priority sector lending.

5.3.5.8 Export Facilitation

- 27. Mandated cargo space in Passenger Airlines for export of perishables.
- 28. Reduce airfreight for agriculture fresh produce which is meant for exports or provide appropriate subvention to subsidize freight rates.

5.3.5.9 Miscellaneous

- 29. The package of grants to the States under marketing infrastructure scheme announced by the Centre and linking the package to the amendment in APMR Act on the lines of the Model Act should be made more attractive. The States should be incentivised for outsourcing the functions of the markets either completely or partly. The States should also be encouraged for modernizing the existing markets in PPP mode.
- 30. The grass root awareness campaign should have focus on importance of integration of production with market and value chain and on good agricultural practices for better price realization by farmers.
- 31. The *de facto* restrictions on movement of goods across State borders should be removed by harmonizing state-level taxes and providing for

their hassle free collection at convenient points. The country should be conceptualized as a unified integrated national market.

- 32. In the context of market regulation and development, all States and UT Governments should be encouraged/incentivised to:
 - Hold regular elections of agricultural produce market committees and bring professionalism in the functioning of existing regulated markets.
 - (ii) Plough back the market fee for development of marketing facilities and investments for creation and/or upgradation of infrastructure in market yards/sub-yards. Priority be given to cleaning, sorting, grading and packaging facilities in villages, sub-yards and yards.
 - (iii) Extend greater flexibility to stakeholders, sellers as well as buyers to interact in the markets. For this, the market needs to be conceptualized in wider a context. Further, not only the licensing of traders, commission agents and other market functionaries need to be liberalized by de-linking the licenses with ownership of shops in the yards/sub-yards, the requirement of multiple licensing for each market within a State needs relaxation.
 - (iv) Promote grading, standardization, packaging and certification in the market area.
 - (v) Ensure transparency in auction system, penalization on arbitrary deductions from the farmers' realization, prompt payments to farmers, dissemination of market intelligence and speedier and hassle free transactions in the market.
 - (vi) Improve weighing systems by installing bulk weighment system and handling, in a time bound manner.

- 33. Essential Commodities (Amendment) Bill, 2005 should provide for imposition of trade and marketing restrictions only during the exceptional situations of demand-supply dislocation, market aberration and price volatility.
- 34. The rules and regulations under the Food Safety and Standards Bill 2005, which has been passed by the Parliament, should be expeditiously formulated and notified.
- 35. The Warehousing (Development and Regulation) Bill 2005, which is now before the Parliament, should be expeditiously passed.
- 36. The Bill for amendment in Forward Contracts (Regulation) Act should be expeditiously passed to enable the FMC for effective regulation of trade in futures. There should be rational riders on physical delivery in futures markets. At present, futures are allowed for six months. It should be extended at least to 12 months so that full crop marketing year and its seasonality are covered. Restrictions on futures trading in livestock products should also be withdrawn.
- 37. Complementary measures and mechanisms needed for contract farming to expand on a large scale should be put in place. This aspect, in the context of Model APM Act, is also flagged by the National Commission on Farmers, recommending that the Government may work out a farmer centric 'Code of Conduct' for contract farming arrangements, which should form the basis of all contract farming agreements and also encourage development of farmers' groups/organizations to negotiate with the purchases and take care of the interests of the small farmers. While prompt settlement of disputes is crucial to Contract Farming arrangements, with the APMC may not be insisted upon. Accordingly, the needed complementary measures include:
 - a. Promotion of organization of farmers/producers' groups;

- Identification of a group of villages for each niche commodity and provision of credit, utility services and incentives for the farmers to cultivate the identified commodity;
- c. Improvement in the quality of input delivery and research and extension services including testing of soil nutrient parameters;
- d. Training of farmers in adoption of appropriate technology and maintenance of quality standards;
- e. Provision of complementary infrastructure including IT kiosks, road and communication connectivity in rural areas;
- f. Well defined dispute settlement mechanism for effective implementation of the contract; and
- g. Improving land records and administration system.
- For promoting grading and standardization and improving the quality of the produce, measures needed are
 - a. existing national grade standards should be harmonized with international grade standards;
 - grade standards for all farm commodities should be comprehensively reviewed and reformulated, including the commodities traded only in the domestic market; and
 - c. grading facilities at all the stages of marketing chain should be upgraded with the establishment of grading units and pack-houses in the villages/sub-yards, by providing intensive training to farmers, establishment of grading laboratories at appropriate locations, and establishment of State level grading and standardization bureau.

- 39. The role of the market as knowledge and information exchange amongst the converging farmers needs to be appreciated and harnessed. There is a need for greater synergy between extension services and market. State Marketing Departments and Boards, APMCs, Krishi Vigyan Kendras (KVKs), Marketing Cooperatives, NGOs and PRIs should pay increasing attention to train the farmers in marketing related skills like quality standards. FAQ norms, terms of contract under contract farming, provisions of various insurance schemes, preparing the produce for the market and primary value addition, and motivate them to organize themselves in to marketing groups, which could take the form of cooperatives, self help groups or even producers' companies.
- 40. The KVKs and State Extension system should be strengthened by providing a post-harvest technology wing, consisting of scientist, agribusiness professional, technicians and demonstration unit, equipped with market intelligence on specific commodities.
- 41. In attracting "Foreign Capital" safeguard should be there against Flight by Night Operators. A suitable mechanism should be devised so that whenever the private parties come they have a real and sincere stakes both in terms of land and money.
- 42. Considering the high pay-off from rural roads in terms of both poverty reduction and accelerated growth, the public investment in rural roads should be stepped up.
- 43. Tele-density in rural areas continues to be low; resultantly the access to information to the farmers is constrained. Government has taken number of positive initiatives for knowledge dissemination to the farmers by Kissan Call Centres, AGMARKNET portal, etc. Meaningful gains cannot occur without sufficient facility of telecommunication. Increase in tele-density, as infrastructure development for rural economy should be taken up with a time frame of attaining 90 percent village connectivity in next three years.

- 44. The portal of AGMARKNET should be strengthened in PPP and should facilitate as Virtual Market with a window for the farmers to inform about their produce and practices and buyers to seek production/supply of their choice. Such Virtual Market will benefit the Farmers Groups to announce their production profile.
- 45. Problems and constraints in development of agricultural marketing for North-Eastern States, Hill regions and Tribal regions should be addressed in a manner different from general development strategy, since it would necessitate exclusive consideration of their concerns dovetailing with other aspects of development as well.
- 46. Various recommendations would require action plans, time frame and designation of functions and coordination. Moreover, the process would require periodic adjustments over time and space involving various departments and stakeholders. Hence, there should be a standing arrangement under the aegis of Department of Agriculture and Cooperation, Ministry of Agriculture to monitor and track the performance of agricultural marketing development, reforms and marketing efficiency using certain indicators as suggested below:
 - Ensuring better returns to farmers for their produce through increased competition and quality improvement;
 - Reducing farmers' risks in production, marketing and price;
 - Making available quality products to consumers at reasonable prices;
 - Improvement in physical and economic access to food and nutrition;
 - Improvement in marketing efficiency by reducing costs of marketing;
 - Harnessing value addition and trade opportunities;
 - Creation of adequate physical infrastructure for marketing activities; and
 - Creation of additional employment in agricultural marketing.

5.4 RECOMMENDATIONS

5.4.1 Shift in Paradigm

India has made many strides on production front but awfully lacking in the field of agricultural marketing. These inadequacies are becoming more acute with the significant changes taking place in agri-food systems in domestic and overseas markets, the attainment of competitiveness is becoming increasingly dependant on the capacity of the country to develop effective and efficient agricultural marketing. Presently agricultural marketing system in India suffers from number of constraints i.e. infrastructure related, government regulation related, technology related, poor information on domestic and overseas markets and opportunities, unstable and uncertain produce prices, delayed and late payment to producers and low producer's realization.

While considering the infrastructure requirements, it is imperative to examine various marketing channels that are prevalent in the country and their status for handling the marketed surplus and the fast evolving value chain management models and new marketing management practices that are coming into existence. The perspective of creating ideal infrastructure should also cover the latest concerns of food quality and safety. The infrastructure should also cover the complete supply chain. The existing marketing infrastructure in the form of Rural Primary Markets, wholesale and assembling markets, grading and quality control systems, retail markets, storage including cold chain infrastructure, infrastructure required for linking the commodity futures with the farmers, perishable cargo centres, rural farm road infrastructure, market information infrastructure, infrastructure for livestock markets, poultry and livestock meat markets, slaughter house facilities and quality assurance infrastructure of various agricultural commodities was examined and found that it is far below the desired/required levels both in terms of capacity and quality of facilities. This infrastructure is also inadequate to realize the potential competitiveness of multiple commodities for taking them to the global markets. On the other hand, the enabling legal environment for promoting the private investment is just evolving with the proactive facilitation by Central Government and willingness of majority of states.

The regulation of the marketing system by the state governments, though provided better marketing practices in the initial years of their establishment, in view of changing circumstances and demand of new marketing practices, the regulation has outlived its purpose. The fragmented marketing system and lack of infrastructure are the serious constraints and are acting as competitiveness challenges for our commodities.

In a globalised trade regime, it is essential to link the farmers with the markets with state-of-art infrastructure. This effective linkage can alone remove the constraints of logistics, quality maintenance and thus, compete with global products. Analysis of international market development scenario reveals that encouraging large scale integrated players to develop the supply chains in various commodities with latest technology infrastructure is the right approach suitable for Indian conditions. The existing system of fragmented handling of various supply chains should be converted into integrated handling systems with state-of-art infrastructure so as to ensure better realization to the farmers. The appropriate model of marketing infrastructure under Indian conditions should consist of the following fundamental principles and should meet the following requirements:

- Direct sourcing from the farmers and limiting the intermediaries to bare minimum.
- Value addition activities such as cleaning, grading, packing, primary processing, and storage should take place nearer to the farm or production center.
- Organizing the farmers into growers' groups/commodity groups/ cooperatives/self help groups/producer companies is necessary to ensure the participation of diversely located small and marginal farmers and their linkage with markets.

- Proactively promoting grades and standards through capacity building and infrastructure creation, instead of leaving to the private retail chains to come up with their own standards and grades. Private grades and standards, as prevalent in other countries, will be disastrous to resource poor Indian farmers. This situation should not be permitted.
- Instead of leaving to the retail companies to evolve sourcing models, Government can proactively prepare the farmer groups to interact and establish linkage with retailers. The infrastructure for primary handling needs to be created for a village or group of villages in the form of primary value addition and multi-purpose service Centres through Public Private Partnership. These centres could be managed by Co-operatives, SHGs, farmers' clubs and producer groups and linked to wholesale markets/retail markets/direct marketing.
- Handling at least 50 percent of perishables through uninterrupted cool chain from farmer to the consumer.
- There is necessity to continue modernizing existing marketing channels/systems so as to enhance the marketing efficiency and efficiency of handling the food.
- Introducing professional, managerial practices in running the market and bring efficiency into the system, if required by outsourcing.
- Bring some of the existing markets under professional management through Public Private Partnership. Some of them could be outsourced for professional management.
- Create alternate marketing opportunities to farmers for selling their produce at better prices.

- Creating quality consciousness in handling the produce and capacity building for appropriate grading, good agricultural practices and food safety standards.
- Promoting consumer demand for safe and healthy foods, so that the demand will drive the implementation of food safety measures. This ultimately enables us to capture global markets.
 Price incentives will provide demand-pull for quality and safe food and ultimate traceability.
- Leveraging the ICT for empowering the farmers and farmers groups.
- Creating environment for private and PPP investments.

5.4.2 Recommendations

- The marketing infrastructure should cater for handling the marketed surplus of the food grains of about 138 MTs, 25 MTs of oilseeds and 153 MTs of fruits and vegetables by end of XI Five Year Plan. The storage infrastructure and other infrastructure should be adequate for handling above projected marketed surpluses.
- 2. Development of 5000 Rural Primary Markets/Rural Periodic Markets/Rural Haats all over the country out of existing 21000 such markets, with a unit cost of Rs 25 lakh per market. The total financial requirement will be Rs 1250 crore. Since the Rural Primary Markets cannot be commercially viable on their own, they should be developed by the State/Panchayats. The state may draw up a project on an area basis for funding under RIDF.
- 3. Considering the dispersed nature of production units i.e. land holdings, the marketed surplus being small from each production unit, aggregation

of the produce is a major problem. Aggregation and primary value addition of the produce should also take place nearer to the production centres. Setting up of 50,000 primary value addition/collection centres with appropriate infrastructure suitable to the local produce with a unit cost of Rs 30 lakh per centre is recommended. The total investment requirement is Rs 15,000 crore. The Rural Primary Markets, if suitable, can be converted into primary value addition/collection centres. These centres can also be scaled up wherever feasible into rural business hubs proposed to be taken up by Ministry of Panchayati Raj in PPP mode. There must be a coordinated effort among all agencies involved in creation of such infrastructure. These centres may become hubs of marketing activity of agricultural produce and value addition such as cleaning, grading, packing, and storage. These centres may also become sub-centres for the main market yard in that area. The location, types of infrastructure, mechanism of establishment, structure of funding and ownership and management need to be worked out with professional help.

4. There is a need for modernization of all principal market yards numbering 2428 with an investment of Rs 3 crore per market. Similarly, modernization of 5129 sub-yards is also recommended with an investment of Rs 1 crore per sub-yard. The total investment will be of the order of Rs 12413 crore in the Plan period. This modernization effort could be utilized to improve the management of the market yards through infusion of professional management principles. The states should be incentivised to professionalise the management of the market yards and through outsourcing operation management, promoting modernization in Public Private Partnership and privatizing some of these markets wherever feasible. The modernization may consist of the infrastructure which can add value to the farmers' produce and increase the realization by the farmers. A transparent electronic auction system, electronic price display mechanism, bulk weighing and bulk handling infrastructure, computerized operations of the market, appropriate storage infrastructure, appropriate cleaning, grading, sorting, and packing infrastructure wherever required should become mandatory infrastructure in each of such markets, with suitable modifications to suit the local requirements.

- 5. Setting up of new wholesale markets by private sector is to be encouraged and it is expected that the agricultural marketing reforms will give impetus for this. About 75 such private markets are expected to be established with an investment of Rs 750 crore.
- 6. The Group also recommends for setting up of 35 Terminal Markets in the country near to the cities with more than a million population, with an investment of Rs 1750 crore in PPP mode. The terminal markets should include the collection centres, with appropriate infrastructure near to the production centres.
- 7. The Group also recommends for achieving the share of direct marketing to the extent of 50 percent of marketed surplus in order to enable maximum realization by the farmers. It is proposed to set up 1152 'Apni Mandis/Raitu bazaars' with an investment of Rs 576 crore for promoting direct marketing. Some such centres could be by private players or on PPP format.
- 8. The Group recommends for promoting 241 commodity specific markets for fruits and vegetables with an investment of Rs 4820 crore.
- 9. There is a need for setting up of 15 specialized flower markets at major consuming centres with a total investment requirement of Rs 150 crore.
- Development of 500 markets for medicinal and aromatic plants in areas where potential exists for promoting these produce, with an investment of Rs 500 crore is recommended.
- 11. The Group also recommends for development of 50 specialized markets for spices with a total investment requirement of Rs 25 crore to provide

state-of-art infrastructure for ensuring the quality and value addition to the spices.

- 12. The Group recommends for development of 1000 livestock markets with an investment of Rs 20 lakhs per market. The total investment is expected to be Rs 200 crore.
- 13. Considering the importance of safe and hygienic meat marketing, modern abattoirs are to be set up in PPP format at 50 centres with an approximate investment of Rs 10 crore for each abattoir. Modernization of meat retail marketing system is to be promoted in about 1000 clusters in all the major cities with an investment of Rs 5 crore per cluster. The total investment of Rs 5000 crore on meat retail markets can be tied up with Jawaharlal Nehru Urban Renewal Mission being implemented by Ministry of Urban Development.
- The development of supply chain management for increasing the efficiency of marketing through retail chain agencies is to be promoted. Government need to have facilitatory role in this activity.
- 15. Based on the marketed surpluses projected, there is storage gap of about 35 million tonnes. Creation of this storage infrastructure would require an amount of Rs 7687 crore. The primary value addition/collection centres proposed at 50,000 clusters would also contain storage infrastructure which can complement the total storage requirement. The bulk storage and bulk handling infrastructure is to be promoted in public private partnership mode.
- 16. On-farm storage infrastructure needs to be promoted as maximum loss of agri-commodities occurs due to lack of scientific on-farm storage. Successful creation of about 170 lakh MTs capacity during X Five Year Plan under Rural Godown Scheme is to be continued in XI Five Year Plan with reduced storage capacity structures. The existing minimum limit of 25 to 50 MT should be brought down to 10-15 MTs to popularize and

promote on-farm storage infrastructure. The unit rate and method of implementing the scheme also needs to be simplified.

- 17. It is recommended to plan for creating cool chain infrastructure to handle at least 50 percent of perishable produce by end of the XI Five Year Plan. The end-to-end cool chain infrastructure is proposed to be created on cluster basis and develop the "Green Corridors" in all National Horticulture Mission clusters. It is estimated that an investment of Rs 15,708 crore will be required to create end-to-end infrastructure for cool chain management.
- 18. It is absolutely essential to create farm road infrastructure so as to have all-weather roads to every unit of 100 ha of farmland. This is very essential for evacuation of the farm produce, retention of quality of the farm produce and to drive investment by the private sector. The major investment will have to come from the flagship programme of Bharat Nirman and Rural Road Construction Programmes of Ministry of Rural Development. However, an amount of Rs 500 crore is to be allocated to specifically target creation of such critical farm road infrastructure in at least 100 National Horticulture Mission clusters.
- 19. The Group recommends for deepening the reach of Commodity Futures Markets and promote delivery contracts prescribing a limit of 25 percent of deals ending up with actual delivery. Massive awareness programme is to be undertaken to demystify the commodity futures markets and enable the farmers to enter into futures contract so as to insure their price risk. The primary value addition/ collection centres can become focal point for aggregation and participation in the futures markets.
- 20. Promotion of National Electronic Spot Markets should lead to better realization to the farmers and must contain the following requirements.
 - (a) The membership of National Electronic Spot Markets should be freely available to all, including farmers. The membership should

not be restricted only to the commission agents in the APMCs but should be permitted outside the APMC also. The tendency of monopolizing the membership by the commission agents of APMC should be prevented/discouraged. This practice will avoid monopoly situation.

- (b) National Electronic Spot Markets should own at least 25 percent warehousing capacity at each centre of delivery. Rest of the needed warehousing capacity can be arranged on accreditation basis. The rural godowns constructed under Central Sector Scheme may also be considered for accreditation for this purpose. The investment in the form of 25 percent warehousing capacity will create confidence and depth for the spot markets which can remove the apprehension of fly by night including speculative operation.
- (c) The contracts in the spot markets invariably lead to delivery of the commodity and no trading should be allowed without corresponding physical delivery of the commodity.
- (d) Each terminal of the spot market should have permanent price display board with arrangement for display of the price related information of Agmarknet.
- (e) The mandi tax will be collected from the buyer by the member of the spot market and remitted to the APMC.
- (f) Since most of the states have amended the APMC Act facilitating direct purchase, the delivery of material by the farmer to the National Electronic Spot Market warehouses, need not be through APMC License holder. Since the member of the National Electronic Spot Markets is also to be registered with APMC/ Mandi Board, the mandi fee payment will be the responsibility of the member/broker.

- (g) Since farmers do not have the wherewithal to deliver the commodity at distant warehouses, National Electronic Spot Markets should ensure the availability of warehouses near to the farmer and at any cost not beyond 5 km radius. If no such facility is available, transporting the commodity from the farmers custody to the warehouses shall be the responsibility of the National Electronic Spot Markets. This is required in view of the fact that dynamics of transport logistics may not be understandable to the farmers and hence the responsibility of transport should be left to the National Electronic Spot Markets. In such cases the grading of the commodity should be attended to at the farmers site itself.
- (h) National Electronic Spot Markets shall accept all grades of a commodity, may be at differential prices. Since the farm produce will not be of single grade and the farmers would like to dispose of his complete produce, irrespective of the grade standards, National Electronic Spot Markets shall provide the facility for procurement of complete commodity which is segregated into different grade standards.
- (i) The certification of grading and standards should be done by approved graders of APMC/Mandi/DMI. The graders should get trained in grading and standards of agricultural produce under the supervision of Mandi Board/DMI for which the required infrastructure should be created. Such training modules can also be organized through NIAM for creating large number of graders and allied equipment in each of these areas.
- (j) It will be essential to create facilities for grading near to the farmer/village so as to enable the farmer to decide to take his produce either for spot market or to the APMC.
- (k) The spot price that will be quoted by the buyer should be net payable to the farmer including the brokerage charge. The transport cost and other miscellaneous cost to deliver at

warehouses should be borne by broker and the buyer should quote only the net payable price to the farmer.

- 21. Creation of infrastructure in the form of establishing and managing 50000 automated weather stations for creating weather data series for each decentralized location and thus, facilitating multiple insurance products suitable for each location, each crop should be promoted on PPP format. An investment of Rs 500 crore would be required to establish this infrastructure and another Rs 360 crore would be needed for managing the stations for initial three years in the form of viability gap funding. Thereafter, this infrastructure is expected to become self-sustaining.
- 22. It is also recommended to set up the state-of-art infrastructure for handling perishable cargo at important exit points for export purposes. An investment of Rs 300 crore is envisaged to set up such infrastructure at 15 locations. Such infrastructure is recommended to be promoted under public private partnership.
- 23. The Group recommends for creating common infrastructure for storage/transshipment/display of agricultural commodities at important international destination points to provide service to the agri-exporters, which can go a long way in promoting the exports. Specific requirement and size of investment for this purpose need to be assessed.
- 24. Quality and food safety infrastructure in the form of two-tier quality testing laboratories in private/public private mode need to be set up. It is estimated that a total investment of about Rs 750 crore would be required to create this laboratory infrastructure.
- 25. Promotion of good agricultural practices is an important area both in terms of reducing the cost of production and increasing the farmers' realization thus enhancing the competitiveness. Various activities for promoting good agricultural practices are to be taken and it is estimated that an investment of Rs 1010 crore will be required for this purpose.

Directorate of Marketing & Inspection should be made as Nodal agency for promoting GAP standards and accrediting gap certification agencies and creating awareness among the farmers.

- 26. Quality control issues in dairy, poultry and meat sector such as promoting HACCP system, code of practices on good animal feed, good hygienic practices and good manufacturing practices need to be undertaken. It is suggested for promoting disease free or low disease prevalent areas so as to provide assurance for the importing countries/consumers.
- 27. Promotion of farmers' organizations to enhance the bargaining power of the farmers and better realization for their produce will be most crucial element for success of all initiatives for inclusive growth. Multiple formats of promoting farmers' organizations/encouraging the existing institutions is to be undertaken. It is proposed to provide a seed capital of Rs 5 lakh for each farmers' organization to create support infrastructure for their functioning. Professional hand holding of 5000 such organizations would require a provision of Rs 250 crores.
- 28. Strengthening/upscaling of agmarknet portal initiative and adding value to the information which will be relevant to the farmers through PPP collaboration/research institution/State Agricultural Universities.
- 29. It is estimated that total investment requirement will be of the order of Rs 64312 crore during the XI Five Year Plan for creating the envisaged infrastructure. In addition to this, food processing sector require an investment of Rs 43,000 crore from the government side to develop the food processing sector, during XI Five Year Plan period.
- 30. The review of various schemes and programmes has revealed a number of lacunae and constraints in their efficient administration. The basic characteristics of these schemes are as follows:

- (i) Majority of the schemes supporting private investment are credit linked with 25 to 33 percent back-ended subsidy depending on the area and category of the beneficiaries.
- (ii) The administration of subsidy is either direct or through NABARD/Bank.
- (iii) A number of schemes also support investment by state agencies.
- (iv) There is no single platform/window through which an entrepreneur can choose a scheme for taking the benefit, which is most suited to his project.
- (v) Many times the beneficiary may have to run between several Ministries/Departments for getting No Objection Certificate or No Subsidy Claim certificate for the same project from more than one scheme.
- (vi) Project preparation support to the entrepreneurs is not adequately available under most of the schemes.
- (vii) Some of the schemes require sponsoring of the project by the state government.
- (viii) There exists maximum subsidy limit for most of the schemes. This varies from Rs 15 to 75 lakhs per project.
- (ix) There is divergence of eligibility amounts.
- (x) There is no system of information sharing between the Ministries/Departments.
- (xi) There is no single database which can be used by various stakeholders.

- (xii) There is no system of publicizing the infrastructure created which can be made use of by future investment proposals.
- 31. It is recommended that the scale of subsidy for creating agri-marketing infrastructure need to be enhanced to 50 percent in view of number of disadvantages that are to be encountered in creating infrastructure through private investment. The creation of infrastructure by private players is not forthcoming in this sector due to a number of uncertainties and risk factors such as small holdings, resource poor farmers, technological backwardness, dependence on vagaries of weather, and dispersed nature of raw material sourcing. The higher scale of subsidy is required to provide adequate protection for meeting the above risk factors and promote investment. The existing level of 25 percent back ended subsidy in most of the schemes will work out to meeting only the interest burden of the entrepreneur. This justifies the enhanced scale of subsidy for creating marketing infrastructure.
- 32. The schemes in the XI Five Year Plan need to be restructured and should adopt innovative implementation strategies to facilitate the entrepreneur to avail the benefit without much problem. Important measures recommended for improving the scheme implementation are as follows:
 - (a) Mobilize consensus among the States for creating favourable policy/legal environment for investment by private sector either on their own or in Public Private Partnership.
 - (b) Mobilize public investment in areas which are public or social in nature and no private player is ready for venturing into because of commercial considerations.
 - (c) The income from the sector should be ploughed back to the sector and requisite incentives be also provided by the Central Government.

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- (d) Encourage States to professionalize the management of existing marketing channels and regulated markets by outsourcing the activities in the markets. The states must also modernize the markets in PPP mode.
- (e) Public support grants must be provided to fill the viability gap of the projects and the same is estimated to be around 50 percent of the project cost in the green field areas. Therefore, the grant for private/state agencies may be pegged at 50 percent of the project cost.
- (f) There should not be a limit for maximum size of the project.
- (g) The administrative procedures must be uniform across all the schemes by all the Ministries/Departments.
- (h) Single window application system must be put in place with an integrated ICT interface among all implementing agencies.
- A coordination committee meeting must take place every quarter with all the Ministries/Departments.
- (j) The budget allocations for all the specified schemes should be permitted for re-appropriation among the ministries/departments with the approval of the coordination committee.
- (k) A panel of professional consulting agencies must be prepared for projecting the investment opportunities. All the Ministries/Departments can make use of them from time to time. A system of adding a new agency or deleting an agency to the panel should be put in place.
- (I) The approval process must be simplified so as to ensure grounding of various schemes of the XI Five Year Plan at least by June 2007.

- (m) Planning Commission must evaluate the schemes after two years of implementation and take mid course correction. The planning commission must have professional agencies empanelled centrally, and the ministry/department may choose from among the panel.
- (n) The approval process must be in a seamless ICT interface.
- 33. Out of the total requirement of Rs 64312 crore for creating infrastructure, the private sector is assessed to invest an amount of Rs 30625 crore. About Rs 5000 crore is likely to be mobilized from the internal resources of state APMCs. An amount of Rs 12,000 crore can be mobilized from RIDF provided 30 percent of RIDF money is channelised for creating this infrastructure. Thus, the contribution by the Central Government will be of the order of Rs 16687 crore over a period of five years. Investment of this magnitude would require tremendous capacity building of various implementing agencies especially for promoting public private partnership models, project management support, professionalizing the operations of existing markets, planning and promoting technically feasible and commercially viable infrastructure for dispersed production units, etc. A dynamic implementation mechanism needs to be put in place for successful creation of marketing infrastructure.
- 34. The approval processes must be simplified and should facilitate dynamic re-adjustment of various initiatives with adequate delegation of powers so as to achieve the stated objectives.
- 35. Promoting such huge investment from the private sector would require creation of enabling environment/measures on various fronts. Sustainable management of infrastructure created would also require number of measures both in legal, financial and administrative spheres. The details of such measures that are to be taken by the States/Centre for actualizing the needed investments are given at in section 5.3.5 of the report.

CHAPTER 6

AGRICULTURAL MARKETING INFORMATION SYSTEM (AMIS) AND HUMAN RESOURCE DEVELOPMENT

1.1 IMPORTANCE OF AMIS

Rural (primary and periodic) Markets (about 21731) are the first contact points of farmers with the market economy, both for selling and buying. As there have been high price differentials many times between the Wholesale Markets and the Rural Markets, there is room for arbitrage which is being exploited by the traders to their advantage. Therefore, it is imperative to make the Wholesale Markets as the price discovery point and the Rural Markets as the price takers with due consideration for transport and other costs. As the Rural Markets have few traders, the tendency to collude among them is high. In the Wholesale Markets, as traders are many, one can expect a fair price. In a country like India with 70 percent of its population living in about 6.25 lakhs villages and depending on agriculture as their main occupation, accurate and timely information about the market prices of the agricultural commodities is of extreme significance. Lack of information is not the only marketing constraint facing the farmers in remote areas who are trying to earn money by growing agricultural produces for sale, but also other difficulties which include poor roads, distance from urban markets, lack of transport, lack of a good grading system, and poor packaging.

The Inter-Ministerial Task Force on Agricultural Marketing Reforms (June 2002) had made a number of recommendations to make the Agricultural Marketing System more vibrant and competitive. Government initiatives aimed at bringing about regulatory reforms and infrastructural development in agricultural marketing and private sector investment in infrastructure creation (aimed at streamlining the Supply Chain Management (SCM) for their retail initiatives) have created much desired vibrancy in this sector in recent times.

The most important marketing information is price data. Agricultural price data are based on thousands or millions of transactions, many of them on a small scale, that are taking place every day all over the country. Collecting an adequate sample and making sure that these are representative enough to be useful is not an easy task. As farmers become more market oriented, extension workers need to be in a position to advise them not only on how to grow crops but also on how to market them. Knowledge of produce handling, storage and packaging is also essential. An understanding of costs and margins is essential for all those involved with agricultural marketing. Before any agro-processing venture is started, or before an existing venture decides to expand its product line, an understanding of the market for the planned products is essential. Market research can never guarantee success but it can certainly increase the likelihood that the new business will turn out to be profitable. It can identify at an early stage those processing ideas that are unlikely to lead to profitable operations.

According to FAO, improvement of marketing systems for both farm produce and inputs in developing countries and the emerging economies necessitates a strong private sector backed up by appropriate policy frameworks and effective government support services, which include:

- Provision of market infrastructure,
- Supply of market information, and
- Agricultural extension services to advise farmers on marketing.

FAO's Marketing Group is active in promoting efficient and sustainable market information services in its member countries. FAO has collaborated with the Developing Countries Farm Radio Network to produce a series of radio scripts and plays on the topics of market information and post-harvest handling, which can be downloaded from its Network's web site. The following publications of FAO require to be customized for India with localization in 22 languages:

- "Understanding and Using Market Information A Marketing Extension Guide";
- "Guide to the Establishment of Market Information Services";
- "Farm Radio and Market Information"
- "A Guide to Marketing Costs and Margins"
- "Food Supply and Distribution to Cities"
- "Rural-urban Marketing Linkages"
- "Retail Markets Planning & Designing Guide"
- "Seed Marketing"
- "Fertilizers Marketing : Fertilizer Retailing Guide"
- "MARKET RESEARCH for Agro Processors"

As it has been learnt from the implementation and operation of information systems in many sectors, the provision of large amounts of data and the development of computer-based information retrieval tools are not effective enough solutions for diverse groups of users, unless the same information is presented to users who have different levels of education and different capacities to understand and absorb the information. "Marketing information is a means to an end, not an end in itself". The Agricultural Market Information System must be thought of in both the contexts of the user's cognitive capacity and also in terms of the means, format, and language of the presentation of the knowledge objects.

Market information is crucial to enable farmers and traders to make informed decisions about what to grow, when to harvest, to which markets produce should be sent, and whether to store it or not. The needed categories of information (Knowledge Objects) are as follows:

- Daily/weekly retail and auction prices;
- trends in aggregated auction prices, retail prices, quantity traded through auction, export, import, and production;
- information on farm inputs (types, sources, and selling price);
- description of prevailing market conditions (supply and demand situation);
- information on marketing and post-harvest practices;
- information on existing food standards and regulations;

- market situation and outlook reports (annual report);
- market research and development reports;
- investment advice and success stories in agribusiness;
- relevant information/news on export markets in the region; and
- a directory of existing exporters and importers.

The main purpose of Agricultural Marketing Information System (AMIS) is to disseminate accurate and timely marketing information so as to support in marketing decision making and marketing efforts of entrepreneurs, farmers, government, development organizations, academicians, and researchers. Agricultural Market Information System (AMIS) helps in ensuring that produce goes to markets where there is a demand for it. It shortens marketing channels and cuts down on transport costs, and helps ensure that each marketing transaction is a fair one, and that all participants share the risks and benefits. However, this does not happen if marketing information is distributed unequally, as is generally the case when many small-scale farmers in Asia are selling to a relatively few large-scale dealers. The farmers then end up bearing the greater part of the risk, while the dealers end up with the greater part of the profits. Farmers must be able to seek out and compare the information available for different outlets if they are to sell to best advantage. Price information is less useful if there is only a single market outlet, or if farmers are price takers rather than price seekers. Where there is a very wide gap between the farm gate price and the price paid in wholesale markets and by consumers, marketing information can help narrow the gap, but only as part of an efficient marketing system.

1.2 CURRENT STATUS AND ROLE OF AMIS

The following categories of institutions of public, private and cooperative sectors, are involved in the existing Agricultural Marketing Information System (AMIS) in the country:

- About 4,018 Special Commodities Societies for Oilseeds and other such commodities;
- About 2,759 general-purpose societies at the mandi (wholesale markets in India) level;
- Agricultural and Processed Food Export Development Authority (APEDA);
- Agro Processing Units (more than 2400);
- Central/State Agricultural Commodity Boards;
- Central Warehousing Corporation (CWC)/State Warehousing Corporations (SWCs);
- Centre for Monitoring of Indian Economy (CMIE);
- Commission for Agricultural Costs and Prices (CACP);
- Commodity Exchanges;
- Cooperative sugar factories, spinning mills, and solvent-extraction plants;
- Cotton Corporation of India (CCI);
- Directorate of Economic and Statistics (DES);
- Directorate of Marketing and Inspection (DMI);
- Food Corporation of India (FCI);
- Framers' SHG for promotion of Marketing;
- Jute Corporation of India (JCI);
- Krishi Vigyan Kendras (KVKs);
- Marine Products Export Development Authority (MPEDA);
- Marketing Cooperatives (NAFED, TRIFED, State Federations General and Commodity specific);
- Ministry of Civil Supplies and Consumer Affairs;
- National Cooperative Development Corporation (NCDC);
- National Dairy Development Board (NDDB) and its Milk Societies;
- National Horticulture Board (NHB);
- National Informatics Centre (NIC)
- Mass Media: Newspapers (including AGRIWATCH) and Magazines (including Agriculture Today), Radio and Television; Internet resources (Portals including AGMARKNET)
- Public Distribution System (a network of more than 4 lakh fairprice shops);

- SMEs (e.g. rice mills, oil mills, cotton ginning and pressing units, and jute baling units);
- Specialized Marketing Boards (for Rubber, Coffee, Tea, Tobacco, Spices, Coconut, Oilseeds, Vegetable oil, and Horticulture);
- State Agricultural Marketing Boards (SAMBs);
- State Trading Corporation (STC);

The Central Ministry of Agriculture (MOA) plays a critical role in coordinating and integrating various marketing information systems operational in the country, and improving and bringing together the isolated efforts made by different agencies. The Annual Supplement to the Foreign Trade Policy (2004-09) has also focused on the twin export promotion programmes: (a) "Focus Product" and "Focus Market", scrapping the scandal-riddled "target Plus" scheme; and (b) Videsh Krishi and Gram Udyog Yojana (VKGUY) for reaping the benefits of foreign trade further to rural areas. This policy has also envisaged enhanced use of ICT-EDI initiatives:

- to bring all the community partners with international trade on EDIenabled Platform to reduce transaction cost;
- to extend the Online Web-enabled Application Procedure for issuance of licenses/authorization to other categories of licenses and authorization; and
- to consolidate the Message Exchange System with customs and extending its scope to cover all categories of shipping bills relating to different export promotion schemes;

The role that ICTs can play in different areas in the Agri-Value-Chain is immense. An evaluation of the Indian scene, based on primary survey of extension professionals, suggests that, while presently market information and weather updates are the critical information gaps in the agricultural system, illiteracy, cost and lack of awareness are the major adoption constraints for ICTs. Further, ICT can act as a critical networking tool which can connect the small farmers to emerging markets in order to promote their participation in the emerging niche and high-value agriculture fields such as organic farming, and medicinal and aromatic plants. Thus, there is a need to develop a comprehensive "Agricultural Marketing Information System" that can be used to deliver a package of information to assist small farmers and entrepreneurs at the village level so as to enable them to take well-informed business decisions and minimize business risks.

The ideal Agricultural Marketing Information System (AMIS) should be responsible for:

- sourcing all the market data/information being collected by various agencies;
- initiating collection where it is nonexistent and strengthening existing collection procedures;
- processing and analyzing such data/information to turn it into useable knowledge; and
- developing mechanisms/systems for information/knowledge dissemination through various media such as radio, TV, newsletters, bulletins, and websites.

It must be borne in mind that any information system that is developed would have to support market research and planning and also support economic and policy analysis, unlike a system that attempts to disseminate prices only. The system would also need to include information on current and historical production, market supply, wholesale prices, trade, market potentials, consumer preferences, and other quantitative data. The development of the system should thus be guided by the following objectives:

• To collect and develop a comprehensive baseline information system (production, market supply, wholesale prices, key markets, etc.) on major crops and allied enterprises;

- To produce market "Outlook Reports" that will include trend analysis and market forecasts for potential market creation or expansion;
- To compile information that will be used for preparing strategic marketing plans and feasibility studies;
- To compile relevant quantitative and qualitative data into an electronic database system that can be accessed easily by data users;
- To disseminate this information to extension workers, businesses including farmers and policy analysts for use in decision-making;

The establishment of a sustainable ICT system that meets the needs and wants of the rural user requires a framework that addresses critical need-gaps. This can be achieved by:

- Identifying available secondary information on key products including literature review and sources of data;
- Identifying areas of missing secondary information;
- Collecting primary data, as needed (e.g. industry surveys);
- Establishing baseline information on production, markets, trade flow, competition, market potential and consumer;
- Characteristics for the top products or product;
- Identifying resources needed for an electronic database and determine the most efficient way to organize the data electronically;

- Start assembling the data and organizing them in an orderly and useable fashion;
- Creating computer database for various information, including wholesale prices, supply and other production statistics;
- Enhancing existing portals to serve as an effective medium for information dissemination; and
- Performing basic data analysis and customized presentation.

Global competition and new Information and Communication Technologies (ICTs) are forging new relationships within and between, different layers of agribusiness, transforming the industry from a chain to a complex web. Internet Commerce (or e-Commerce) is growing fastest among businesses and facilitates companies to integrate and maximize changes (i.e. restructuring, business-process standardization, enterprise resource planning, etc). The industry developments provide an insight into trends, potential impacts and prospects, as given below:

- e-marketplace/Neutral e-Hub
- e-distribution sites/Distributor model
- e-procurement sites/Aggregation model

In view of globalization, the main players of the future would no longer be conventional landowners but agri-businesses linked directly to multinational food corporations. e-Marketplaces are emerging as a dominant force in e-Commerce. "Business to Business" (B2B) and "Business to Consumer" (B2C) raise questions for agriculture, because traditionally farmers have never been equal trading partners with either the upstream input suppliers or with the downstream retailers and distributors. Another trend is the current domination of B2B developments by large and medium sized farms. There appears to be a distinct difference between "farm business" and "Up and Down Stream Business". The "Farm Business" has limited web presence. It is restricted to direct trade with final customer often in niche market and not necessarily to retailers or

processors. The "Up and Down Stream Businesses" is a significant development which have sites for buying or selling with a large number of individual businesses, farmers or customers.

Classical farm businesses do not appear to have either the capacity (capital, labour, and expertise) or the necessity (output) to set up and maintain sites at the same level as for up-stream and down-stream business. In essence, individual farmers cannot replicate offline behaviour online. This requires a large scale capacity building and capability building through human resources development (HRD) and also massive ICT Infrastructure at grassroots level.

The Central Government and its agencies, the state governments and their agencies and the private sector have undertaken some path-breaking initiatives (e.g. AGMARKNET - www.agmarket.nic.in) by the Union Ministry of Agriculture, the e-Vipnan initiative by the Madhya Pradesh state government, ITC's e-CHOUPAL, DCM SHRIRAM's Hariyali Kisan Bazar, etc) besides strengthening traditional information sources such as individual State Agricultural Marketing Boards, Commodity Boards, and Commodity Exchanges. However, the absence of inter-linkages between these sources demands the establishment of a comprehensive information networking system that straddles across commodity groups and markets while delivering real-time, authentic information in a userfriendly format through localization. National Institute of Agricultural Marketing Institute (NIAM) has helped various State Agricultural Marketing Boards in developing their Agricultural Marketing Portals and also involved in implementing, through NIC, the "National Atlas of Agricultural Markets". The website for Domestic & Export Market Intelligence Cell (DEMIC) (www.tnagmark.tn.nic.in) of the Government of Tamilnadu, both in Tamil and English, provides forecast information on the supply, demand and future prices of important agricultural commodities in Tamilnadu. The website interfaces with AGMARKNET website for display of daily data on arrival and transaction of important commodities.

Many State Agricultural Marketing Boards, National Federations, and Agri-Business organizations, have developed Web portals on Market Information both in English and their local languages (in most cases) and their Web sites URLs are given below:

- www.rakmb.com
- www.msamb.com
- www.maratavahini.kar.nic.in
- www.agri.rajasthan.gov.in
- www.market.ap.nic.in
- www.mandiboardpunjab.com
- www.mpmandiboard.com
- www.gov.ua.nic.in/uamandi2
- www.upmandiparishad.in
- www.bsamb.com
- www.megamb.nic.in
- www.osamboard.org
- www.nafed.com
- www.assamagribusiness.nic.in
- www.hortibizindia.org

Some of the websites which are providing agricultural products marketing information in the private sector are as given below:

- www.agriwatch.com
- www.kisan.com
- www.indiagriline.com
- www.iopea.com
- www.echoupal.com

At the national scene, both AGMARKNET and e-Choupal systems have emerged as operational systems with scaling up in a sustainable manner, and have received national and international appreciation and awards for their impact at grassroots level. They have established a significant trend in the Indian economy by directly linking the industry and the peasant-dominated farm sector. ITC's e-Choupal system aims to streamline the Supply Chain Management (SCM) of the Cereal Crops that the ITC deals in, and provides online information to about 24,000 villages with 42,000 kiosks, which are managed by Commission-Based-Managers (CBM) to support information access and direct market linkages of farmers to ITC. But AGMARKNET scheme covers about 300 agricultural commodities and their 2000 varieties and extends over more than 2800 agricultural wholesale markets located through out the country.

6.3 AGMARKNET

As a step towards globalization of agriculture, the Union Ministry of Agriculture has embarked upon an ICT project: NICNET based Agricultural Marketing Information System Network (AGMARKNET)" in the country, under its Central Sector Scheme titled "Marketing Research and Information Network (MRIN). This AGMARKNET project networked 735 Agricultural Produces Wholesale Markets (APWMs), during 2000-02 and embarked upon additional 2000 Markets during the Tenth Plan Period (2002-2007). With about 2700 markets already covered under the project, AGMARKNET is well on its way to exceed the target of 2810 networked nodes to be established during Tenth Plan Period. The Government initiative of the networking of agricultural produce markets (AGMARKNET) and the AGMARKNET Portal would facilitate the development of B2B and B2C e-Commerce Model in the country. This project has the potential of expansion to about 7557 Wholesale Markets located through out the country and further to about 22000 Markets in India. This ICT Project is a 'farmer-centric" project to put the farmers on "global free trade zone on Internet".

The AGMARKNET project has led to a nation-wide information network for speedy collection and diffusion of market information, computerization of market related information such as market fees, and market charges, ensuring regularity and reliability of data and increasing the efficiency in agricultural markets. AGMARKNET project has also been designated as one of the Mission Mode Projects of the Department of Information Technology (DIT), Government of India, and has won recognition nationally and internationally, for effectively fulfilling the objective of speedy collection and dissemination of agricultural marketing information for better market access and price realization by the farming community. The AGMARKNET portal has, among the others, details on:

- Commodities and Varieties for 300+ commodities and 2000+ varieties
- Daily Mandi-wise/commodity-wise Prices and Arrivals
- e-Directory of Markets of over 7000 APMCs, 48 Marketing Boards

The advantages of this database accrue to the farmers, as they are not forced to sell their produce in the nearest market at uneconomical prices. The challenge, if the full potential of such ventures have utilized, is to take IT to rural India in a big way. Constraints/Challenges are (a) connectivity in rural areas, (b) training of the stakeholders and (c) ensuring data updation in real time frame.

The Inter-Ministerial task force on Agricultural marketing Reforms (2002) has suggested creating an "Atlas of Agricultural Markets" as well as "e-Commerce" on AGMARKNET Portal so as to enable producers (farmers) directly transact business with the buyers. The AGMARKNET venture benefits the farming communities from the new global market access opportunities and also strengthens the internal agricultural marketing system in India. There have been requests for AGMARKNET venture in various developing countries of Asia and Africa, in view of its operational efficiency in India. AGMARKNET is an effort to bring rural people into the mainstream economy, through an e-ALERT System being visualized in the Kerala state.

A National Spot Exchange for Agriculture Produce (NSEAP) has been set up for linking all 7325 APMCs and other physical market players on electronic platform between the consumers and the producers across the country. During the Tenth Plan, a Memorandum of Understanding (MOU) has been signed among Financial Technologies (India) Limited, Multi-Commodity Exchange (MCX) and NAFED, with SBI as the Principal Clearing and Settlement Bank of the Exchange. NSEAP has planned to act as an integrated market for all 7325 APMCs of the country with a cumulative annual turnover of Rs 3,095 billion.

The Central Department of Telecommunication (DOT) has delicensed the 2.4 GHz and 5.1 GHz bands, on which WiFi platform works. This move will make WiFi to

take off in various metros and small towns. Smart hand-held devices will drive the WiFi revolution as they are cost effective, lighter, user-friendly, and can be customized for specific applications. WiMAX (Intel's Plan – Intel Wireless Connect) is a long distance wireless networking technology designed to replace DSL and Cable Internet Access. WiMAX is a radio technology that can blanket entire cities with high speed internet access, and plans to sell Chips to be used by WiMAX service providers as well as for individual PCs. WiMAX could be to DSL and Cables what cellular phones were to landline phones.

Under the NSEAP, all the agricultural wholesale markets (numbering about 7325) will be enabled with WiMAX Technology to act as e-Bridge for the farmers and also to act as "Rural Hubs" for e-Trading.

6.4 E-BRIDGING THE FARMERS TO ORGANIZED RETAIL CHAINS

The growth of the organized retail sector is likely to be a boon to the job market. Retail is the second largest employer in India, after agriculture, but is largely disorganized. Some studies have indicated that presently, the Indian retail business employs nearly 12 million people, which is around 7 percent of the total employment. Although the country has about 12 million retail outlets, the largest number in the world, the share of organized retailing is merely 2 percent as compared to 80 percent in USA, 70 percent in West European Countries and 40 percent in Brazil. This only indicates the huge scope for the growth of the organized sector in India. Studies also indicate that organized retail in India will grow from 2 percent of the total retail industry to a significant 20 percent by the end of 2010. According to CRIS INFAC Study, organized retailing in India is expected to triple its revenue by 2010. The market size is forecast to grow to Rs 109,500 Crore by 2010 from Rs 35,000 Crore in 2004-05. Food and Grocery revenues are bound to multiply and retail franchises may turn into joint ventures.

Organized Retailing (OR) rewards producers and consumers by slashing middlemen margins. By tapping into farm produce, it can improve the lives of people who have so far not benefited from reforms and high growth. The industry can create a virtuous cycle of generating the disposable incomes it needs. ITC, Bharti, Pantaloon, Godrej, Mahindra&Mahindra, Subhiksha, DSDL, and Reliance Retail (RR) are establishing a significance trend in the Indian economy through establishing direct linkage between organized industry and the peasant-dominated farm sector. This can catalyze the much vouchsafed Second Green Revolution, and may well lead India's transition to a broad-based consumer society. However, this requires removal of barriers to FDI in retail.

The benefit to the farmer is not all that obvious or automatic. An IIM-Bangalore study finds the share of the farm-gate price in the final price paid by the consumer to be quite low. This ratio can be brought up either by eliminating the series of middlemen and enormous amount of wastage and inefficiency that have conventionally plagued the Supply-Chain Management (SCM) linking the farmer and the end-consumer; or by hiking the farm-gate price. Probably a bit of both may be required. To ensure that the farmer gains as much as he can from the planned growth of organized retail and food-processing, some policy changes are called for, in the areas of APMC Act and Land Ceilings Laws, and also Institutional Innovations.

Small holdings have their own merits (equitable distribution, emotional involvement, opportunities to introduce appropriate intensity in farming, compulsion to collaborate with neighbours, soil conservation and composite farming) and hence they fit into the Supply Chain concept well. A nodal agency with market insight and vision is a prerequisite for every supply chain. The Government of India has announced a policy for agriculture over the first two decades of the twenty-first century, and the policy contains elements of SCM. A commodity approach to fixing the complete chain is the most appropriate strategy whether it is Mango in Uttar Pradesh (U.P.), Litchi in Bihar, Pineapple in Tripura or Poultry in Tamilnadu. Typically, the Chain is broken or is weak in several links. Agri-business can realize its potential by applying the principles of ICT based Supply Chain Management and Value-Chains.

At the international level, there is no competition among firms, but it is among supply chain networks. The network in India is primitive and exploitative. The trick is to bring about an intensive collaboration among producers, processors, logistics providers, wholesalers and retailers to supply what the consumers in India and abroad want cost effectively. Horizontal collaboration among policymakers, researchers, extension agencies, technology companies and financial institutions add strength to the chain. The whole chain, and not just production alone, should be defined as agriculture.

The Government of Punjab and M/s Reliance Industries Limited (RIL) signed a Memorandum of Understanding (MOU), in the recent past, to promote agribusiness: "Farm-to-Fork" Agricultural Mega Retail Project in Punjab, so as to achieve the following objectives:

- to translate into rising farm incomes;
- large employment generation at farm gate;
- a major export drive for selling the produce of Punjab globally;
- large scale credit access to the farmer with high quality banking;
- increase in farm productivity in fruits, vegetables, dairy and coarse grains;
- give an impetus to crop diversification programme and enhance yields;
- provide high quality inputs;
- establish a world-class Supply Chain (SC) infrastructure; and
- promote food processing industries.

While the biggest beneficiaries would be small farmers, a widespread retail food network would come up, in addition to supporting grain procurement for the central pool, providing warehousing finance to prevent distress sale at harvest time, promoting education and health care, and further strengthening infrastructure for improving the living standards.

Supply Chain Management (SCM) can be derived from the concept of social capital. It demands enlightened self-interest where all the links in the network work towards maximizing the value for all, including the customer, in a collaborative way. The key messages of supply chain successes are customer rank, quality, price, specification, timely delivery and relationships with suppliers as their priorities. India is a large market for multinational companies, but the farmer cannot freely move his produce. But agriculture in India needs some

critical management inputs, particularly that of Supply Chain Management (SCM), so as to collaborate among various stake-holders, non-exploitative vertical and horizontal integration, market reforms, precision farming, contract farming, demand-led diversification and the extensive and intensive use of Information and Communications Technologies (ICTs) for real-time communication across the chain.

6.5 E-COOPERATIVES

Farmers are to be empowered, if the rural economy is to be liberalized, as the success of our democracy rests with the rural poor. One of the best ways of achieving is through cooperatives. Cooperatives comprise a special category of business organizations because their raison d'etre is not profits for distant shareholders, but returns to farmers who invest in land and animals. The entire Value Chain from procurement to marketing is the sole and exclusive domain of the farmer, as operationalised during the last four decades by AMUL. When AMUL (Anand Milk Union Limited) entered the market, there were giants like Glaxo, Nestle, Lever and Cadburys. Yet AMUL emerged a strong brand and gave them all a run for their money.

The network of Indian Cooperative Movement which covers 100 percent villages and 85 percent of rural households, occupy a key position in agricultural development with respect to resources use, inputs use, harvesting of water resources, marketing channels, storage facilities, distribution channels, value addition, market information, and a regular monitoring network system. Cooperatives are also engaged in economic activities like disbursement of credit, distribution of agricultural inputs (seeds, fertilizers, and agro-chemicals), and arranging for Sanitary and Phyto Sanitary (SPS) measures of farm products. A network of cooperatives at the local, state, and national levels assists in agricultural marketing in India, by handling food grains, jute, cotton, sugar, milk, fruits, vegetables, and areca nuts. With a view to ensuring appropriate positioning of cooperatives in the emerging liberalized competitive economy, it is essential to e-link the cooperatives at different tiers and provide online services to the members. To begin with, it is suggested to network about 1.46 lakhs Primary Agriculture Cooperative Societies (PACS), 19 national level Cooperative Federations, 367 state level Cooperative Federations and 2890 district level Cooperative Federations. Networking of Cooperatives (CoopNet) through state-of-the-art information technology is essential, which will facilitate to get connected to a National Data Centre (24/7 Infrastructure) for achieving the followings:

- Build relationships and alliances faster
- Re-engineer and integrate their processes
- Develop more and better value-added products and services
- Share knowledge and experiences
- Enhance innovation
- Promote Web-based business trading

The envisaged CoopNet is a necessary for collaboration among the cooperatives and also for Total Process Computerization of Cooperatives during the Eleventh Plan.

6.6 E-NETWORKING OF LABORATORIES FOR TESTING OF RAW MATERIALS AND PROCESSED FOOD PRODUCTS

There is an increasing need to provide greater assurance about the safety and quality of food to consumers both in the domestic and the international markets. A large number of testing laboratories are existing within the ambit of BIS, AGMARK and Health Departments of the Central Government, besides Departments of the state government and municipal authorities. However, limited coordination between various food testing laboratories is reported to have led to inefficient utilization of the existing food testing infrastructure. Further, many of these laboratories do not have basic facilities to test antibiotic residues, heavy metal contamination and other toxic contaminants in food products.

For the international marketing, it is required to have a network of food testing laboratories which have accreditation as per internationally accepted systems. The infrastructure available at these laboratories needs to be strengthened for testing of raw materials and processed food products in accordance with internationally accepted protocols. As it has been done for 28 Plant Quarantine Stations under the DACNET Scheme of the Central Department of Agriculture and Cooperation (www.dacnet.gov.in), networking of these laboratories for testing raw materials and processed food products, should be undertaken on a mission mode. Necessary budget allocation is required to be worked out under the DACNET Scheme, which is a Central Sector Scheme and has been successfully implemented during the Tenth Plan Period.

The APEDA has been making constant efforts by working with the trade and industry for meeting Sanitary & Phyto Sanitary (SPS) requirements of importing countries. APEDA have been closely working with corresponding organizations in the importing countries in association with Ministry of Agriculture (MoA), and ICAR institutions. However, APEDA responds mainly on the basis of demand from the importing countries. The institutional framework needs to be developed for creation of a database on the incidence of various diseases and pests in the major production areas of agro-produce for exports through regular survey and surveillance for collection of data and monitoring of the situation. This measure will facilitate APEDA to provide the data and gain market entry without waiting for the results of fresh surveys and studies. The Plant Protection Information System (PPIN) developed under the DACNET System of the Central Department of Agriculture & Cooperation (www.dacnet.gov.in) has networked 28 IPM centres and 28 Plant Quarantine Stations located throughout the country. Efforts are on to interface with the Customs Computerization network through EDI Message Transfer Protocol. This Plant Protection Information System (PPIN) shall be strengthened with the database on the incidence of various diseases and pests in the major production areas of agro-produce for exports through regular survey and surveillance for collection of data and monitoring of the situation. Necessary budget allocation for this purpose is required to be worked out under the DACNET Scheme, which is a Central Sector Scheme and has been successfully implemented during the Tenth Plan Period. E-networking of all these laboratories will help in improving the system at a relatively lower cost.

6.7 RURAL BUSINESS HUBS (RBH) – AN INITIATIVE OF THE MINISTRY OF PANCHAYATI RAJ INSTITUTIONS (PRIS)

Rural India is the mandate of Panchayats and its development is contingent on an integrated approach in which agriculture and allied activities have to act as growth engines, complimented by non farm activities which can sustain in a competitive environment. In June 2004, the Central Government introduced the concept of Rural Business Hub (RBH) as an initiative towards increasing rural incomes, getting rid of chronic mass poverty and giving control to the local levels to plan for themselves. RBH initiative works on the platform of 4Ps i.e. Public-Private-Panchayat Partnership. In this effort, industries will contribute product differentiation; marketing and other professional skills and rural entrepreneurs will produce standardized products and deliver on time so that they reach wider national/international markets. These RHBs can be e-linked with exporters, supermarkets, and retailers, which will make them vibrant and viable self supporting business hubs.

6.8 CAPACITY BUILDING FOR AGRICULTURAL MARKETING SUPPORT SERVICES THROUGH HUMAN RESOURCES DEVELOPMENT

Apart from pursuing policies and creating formal organizations to intervene in agricultural marketing, governments have adopted several programmes of providing market support services. It appears that the types of programmes initiated cover a very wide spectrum of possible solutions to help small and marginal farmers. However, the benefits have not adequately reached the intended target groups. The main reason is that agricultural marketing and business related aspects of training, education and research have remained neglected in National Agricultural Research, Education and Extension System. The emphasis has remained on production related activities. Initially, the emphasis on production was justified but now post-production activities and systems should receive more emphasis.

Farmers get benefit from deregulation of markets, minimum guaranteed price scheme, contract farming, and crop/income insurance, only to the extent they organize in marketing groups, self-help groups, cooperatives or companies and learn skills suited to the new marketing environment. Understanding quality standards (including FAQ), learning the terms of contract and insurance, and choosing and preparing the produce for the market are going to be essential skills for farmers. All stakeholders in the Supply Chain (i.e. from farmers to consumers) should be exposed to the following characteristics and complexities of the marketing system to make it more efficient.

- (i) Marketing practices, agencies and institutions
- (ii) Rules of the game in marketing system
- (iii) Demand, supply and how prices are determined/discovered
- (iv) Government intervention, schemes and provisions
- (v) Responsibilities of stakeholders and rights of farmers and consumers
- (vi) Legal framework of agricultural marketing
- (vii) Market infrastructure and its management
- (viii) Marketing costs and margins
- (ix) Marketing policy
- (x) Marketing extension and education system
- (xi) Agricultural market information services
- (xii) Science and technology services including laboratory analysis and laboratory quality assurance

- (xiii) Transportation and packaging services
- (xiv) Farm input marketing system
- (xv) Contract farming and its provisions
- (xvi) Urban food marketing
- (xvii) Linking farmers to markets
- (xviii) Warehouses, storage godowns and practices

6.8.1 Institutions in Agribusiness and Agricultural Marketing

Following institutions are currently involved in education and training of skilled manpower in agricultural marketing:

- All the Agricultural Universities (Central, State and Private);
- Agricultural Colleges (300);
- Agricultural Related Research Institutions coming under ICAR (89);
- NGO's, Trusts, and Charitable Institutions Specialized in Agricultural marketing;
- MANAGE, Hyderabad and its associated franchises;
- Indian Institutes of Management (IIMs);
- Institutes of Cooperative Management;
- NIAM, Jaipur and its associated franchises;
- IRMA (Anand, Gujarat); and
- Public Sector Banks Farmers' Training Institutes.

Another Working Group of Planning Commission for XI Five Year Plan has estimated the requirements of skilled professional manpower in agricultural marketing and agribusiness management and has come out with the assessment that the current output of professional graduates in these areas is only one-fifth of the current requirements of the organized sector. It is in this context that this Working Group feels that –

- the institutions like NIAM and agricultural economics/agribusiness departments of State Agricultural Universities should be strengthened to increase intake capacities in agrimarketing and agribusiness courses;
- (b) all State Agricultural Universities should initiate degree and diploma courses in agrimarketing and agribusiness, on the pattern of GBPUAT, Pantnagar.

All these courses will be self sustaining but would require initial strengthening of Departments of Agricultural Economics of SAUs and also of concerned division of NIAM.

6.8.2 Training of Extension Workers and Development Functionaries

Apart from higher level skilled manpower, there is a dire need for training of agents of transfer of technology on agricultural marketing and agribusiness. The agricultural extension workers (including even the district and block level functionaries), secretaries of gram panchyats and elected leaders of farmers groups need comprehensive training (including orientation at suitable interval) ranging from three days to one month. Presently, this is being done by Krishi Vigyan Kendras (KVKs) and SAUs. But the capacity of KVKs is inadequate. There is no scientist in KVKs on agricultural marketing and agribusiness. The Working Group feels that keeping in view the emerging needs, each KVK in the country should be provided with a post of specialist in agricultural marketing/agribusiness with sufficient funds for a demonstration unit and training programmes. The financial requirement for the entire XI Plan period is Rs 102 crores.

6.8.3 Training of Farmers, Farm Women and Rural Youth

Training of farmers, farm women and rural youth on aspects related to agricultural marketing and agribusiness can be taken care of by trained extension workers or by KVKs as suggested in section 6.8.2. Only, it is suggested that training and promotion of agricultural marketing should included as a mandate of KVKs.

6.8.4 Strengthening of Marketing Information Infrastructure

- (i) There is a need for establishment of National Agricultural Marketing Resource Center which is an electronic, national resource for producers interested in value-added agriculture so as to facilitate: browse www.agmrc.org/agmrc/commodity/default.htm, investigate www.agmrc.org/agmrc/markets/default.htm, study www.agmrc.org/agmrc/business/default.htm, read www.agmrc.org/agmrc/research/research.htm, and locate www.agmrc.org/agmrc/directories/default.htm.
- (ii) There is a need for creation of a AGMARKNET Cell at the Department of Agricultural Economics of all the Colleges of Agriculture; with some core staff and infrastructure with necessary budget provisions.
- (iii) Specific projects can be initiated with all 300 Agricultural Colleges where the subject on Agricultural Marketing and Economics is being taught, for development of a sound database in agricultural marketing, in phased manner, as given below:-
 - Phase I: Baseline data collection, analyses and validation;
 - Phase II: Database design and management;
 - Phase III: Production of outlook and related market reports; and
 - Phase IV: Industry outreach and information dissemination.
- (iv) There is also a suggestion to establish State Institutes of Agriculture Marketing on the pattern of NIAM. At present, there is no institute even in the states like Punjab and Haryana, to provide skill upgradation in agricultural marketing field. Alternatively, separate departments of

agricultural marketing may be created in existing state level training institutes like SIRDs.

- (v) A massive programme of training of farmers in drying, cleaning, sizing, grading and packaging, and making arrangements for transporting farmpacked commodities directly to retail outlets from farm-gate level, so as to reduce gross marketing margins (GMM), needs to be initiated jointly by KVKs and ATMAs.
- (vi) A programme for production of a series of Multi-Media Scripts and plays for broadcast/telecast over mass-media/Internet (IPTV), may be taken up on the topics of Market Information, and Pre-Harvest/Post-harvest handling, as it has been done by FAO for various Developing Countries under its Farm Radio Network (DC-FRN) to produce a series of radio scripts and plays on the topics of market information and post-harvest handling.
- (vii) The project on Atlas of Agricultural marketing, currently with NIAM, needs to be continued during the XI Five Year Plan.

6.9 SUGGESTIONS FOR XI FIVE YEAR PLAN

Rural areas are still not taking benefit of ICT usage in Market Information Services and its dissemination. The state and national level infrastructure on market information and human resource development shall be of immense help not only to the policy makers, but also in improving marketing efficiency and reducing farmers marketing risks. The development of a systematic information technology system that links all the players of marketing will help the farmers.

6.9.1 Strengthening of Agricultural Marketing Information System (AMIS) Using ICTs

(i) Integrated Website for all agencies of both State and Central Government involved in Agricultural marketing services like APEDA, APMCs, CWC, SWCs, CACP, CCI, DMI, FCI, JCI, KVKs, MPEDA, NAFED, TRIFED, NCDC, NDDB, NHB, SAMBs, and STC.

- (ii) Integrating AGMARKNET with State Wide Area network (SWAN) and NICNET.
- (iii) Establishment of AGMARKNET Nodes at KVKs and Panchayats with IT infrastructure along with Internet accessibility.
- (iv) All agriculture wholesale markets to be the WiMAX based Internet Hubs.
- (v) Computerization of all mandies/APMCs under E-Mandi project undertaken with the existing AGMARKNET Nodes (about 2850 in numbers) as the Phase-II Programme of the MRIN Scheme.
- (vi) Development of Agricultural Commoditywise Portal for 300 Commodities and 2000 varieties to facilitate supply-chain (farmgate to international) management models, and development of marketwise, commoditywise, regionwise, countrywise marketing intelligence system.
- (vii) Dissemination of market information through electronic media, ICT media, telecommunication media and print media.
- (viii) Linking all cooperative marketing organizations through provision of computerization and internet facility and putting them on common or inter-linked websites.
- (ix) E-networking of quality testing laboratories in the country.
- (x) E-linking of rural business hubs with exporters, supermarkets and retailers.

6.9.2 Human Resource Development for Agricultural Marketing

- (i) National Institute of Agricultural Marketing (NIAM) and agricultural economics/agribusiness departments of State Agricultural Universities should be strengthened to increase intake capacities in agri-marketing and agribusiness courses.
- (ii) All state Agricultural Universities should initiate degree and diploma courses in argi-marketing and agribusiness, on the pattern of GB Pant University of Agriculture and Technology, Pantnagar. Though the courses will be self-sustaining but basic strengthening of Departments of Agricultural Economics of SAUs and also of concerned division of NIAM should be done during the XI Five Year Plan.
- (iii) Each Krishi Vigyan Kendra (KVK) in the country should be provided with a post of senior scientist in agricultural marketing/agribusiness in addition to the existing strength of six scientists. Also, KVKs should be equipped with sufficient funds for a demonstration unit and training programmes for extension workers and farmers group leaders in the field of agribusines and marketing management. The financial requirement for the entire XI Plan period would be Rs 102 crores.

CHAPTER 7

AGRICULTURAL EXTERNAL TRADE

7.1 EXPORT PERFORMANCE OF AGRICULTURE COMMODITIES

7.1.1 India's Agricultural Exports

India's export of agricultural and allied products including plantations are of the order of Rs 360 billion. Export of these products have grown at a CAGR of 12.22 percent in the first four years of the X Five Year Plan. During 2005-06, the export of these products accounted for 9 percent of the total exports from India.

Share of APEDA products in total agro exports is increasing over the years whereas share of agro exports in the total merchandise exports from the country is going down. The agro exports from the country constituted 14.8 percent of the total exports out of India in 1999-2000. This share has come down to about 9 percent in the year 2005-06. During the same period the share of APEDA products in the total agro exports has gone up from 30 percent to 42.3 percent.

The major export markets for the agro products monitored by APEDA are as given in Table 7.1, with their respective share in percentage term as compared to total exports.

Table 7.1

Percent Share of Agri Exports Monitored by APEDA in the Total Exports to Different Countries

Country	% Share	Country	% Share	Country	% Share
Bangladesh	15.69	Nigeria	03.95	Ivory Coast	01.87
Saudi Arabia	14.14	U.K.	03.67	Yemen A. R.	01.85
UAE	07.44	Sri Lanka	03.44	Germany	01.85
Malaysia	05.97	South Africa	03.35	Indonesia	01.81
USA	04.74	Kuwait	02.63	Philippines	01.67

2.0.0 India's Share in Global Trade

Food products (excluding fish) form about 64 percent of the total exports of agriculture products. The export of agricultural products from India in 2004 was of the order of USD 7.06 billion ranking 22nd in the world with a market share of 1.16 percent. India's share in global exports seem to be very small considering that India has 184 million ha of arable land (second largest in the world next to USA) and is the third largest producer of food in the world (next to USA and China). However, this may largely be attributed to the fact that we are also one of the largest consumers for most of the products.

7.1.3 Export Performance During X Plan Period

The export performance of agricultural and allied products including plantations as per the data available from the DGCIS during the first four years of X Plan has been as given in Table 7.2. For the year 2006-07, which is the terminal year of the X Plan, targets have been mentioned for the products monitored by APEDA. Besides, the targets received from Tobacco Board for the tobacco and tobacco products are also mentioned in Table 7.2.

7.1.4 Products That Have Registered Higher Growth

The product segments which have registered growth at a rate higher than the CAGR of 12.22 percent are listed in Table 7.3.

1.1.1 Growth in Exports from India as Compared to Growth in Global Trade

If one compares the growth of exports from India during the first four years of the X Plan with the growth in the corresponding period in the global trade for the same commodities, it would give an idea as to whether the growth is in real terms or not. On this parameter, it can be seen from The Table 7.4 that growth in the exports from India in case of grapes, onions, groundnuts and bovine meat is comparable to the growth in global trade which means that we have retained our market share of the global trade in these commodities. However, the growth in the exports from India in the case of wheat and rice is much lower than the global growth which indicates that the share of India in global trade in these commodities has gone down.

Table 7.2

India's Exports of Agricultural Products

			(Rs in cores)			
	Commodities	2002-03	2003-04	2004-05	2005-06	2006-07*
I	PLANTATIONS	2626.04	2723.26	2909.38	3209.16	
1	Теа	1652.07	1637.35	1840.30	1632.09	
2	Coffee	993.98	1085.92	1069.08	1577.07	
11	AGRI & ALLIED Products	22848.97	24844.48	28276.93	32797.32	
1	Cereal	7682.17	6956.68	9022.57	8244.35	
	a) Rice	5831.24	4167.98	6768.92	7074.35	8470.00
	b} Wheat	1759.87	2391.15	1459.82	557.12	0
	c) Others	91.06	397.55	793.83	512.88	522.00
2	Pulses	345.02	328.60	602.57	1102.62	675.00
3	Tobacco	1022.89	1096.47	1254.61	1330.11	1450.00
	a) Unmanufactured	733.52	801.41	940.07	1027.70	1060.00
	b) Manufactured	289.37	295.06	314.54	302.41	390.00
4	Spices	1655.49	1544.18	1883.18	2218.09	
5	Nuts & Seeds	2690.68	3003.45	3809.84	3864.37	
	a) Cashew incl. CNSL	2061.50	1704.84	2489.12	2569.75	
	b) Sesame & Niger seed	450.88	754.30	773.69	794.09	
	c.)Groundnut	178.30	544.30	547.02	500.53	585.00
6	Oil Meals	1487.35	3348.41	3177.60	4826.07	
7	Guargum Meal	486.64	507.90	689.48	1042.19	1275.00
8	Castor Oil	609.81	656.06	1077.98	934.41	
9	Shellac	89.85	179.74	164.87	161.18	
10	Sugar & Mollasses	1814.54	1235.97	155.05	584.38	
11	Processed Foods	2929.00	3485.06	3430.94	4154.15	
	a)Fresh Fruits & Vegetables	1090.11	1737.95	1725.25	2012.16	2415.00
	b)Fruits/Vegetable seeds	97.96	53.61	66.04	89.87	108.00
	c)Processed and misc.	1740.93	1693.50	1639.65	2052.11	2808.00
	Processed items					
12	Meat & Preparations	1377.19	1714.41	1905.27	2647.50	3370.00
13	Poultry & Dairy Product	358.52	415.15	740.75	1112.07	1225.00
14	Floriculture products	180.77	250.47	222.92	304.69	365.00
15	Spirit & Beverages	119.06	121.92	139.31	271.14	324.00

* Target

Table 7.3

Exports of Products with Higher Growth

Commodities	% CAGR
Star Performers (Products with more than	
double the average growth)	
Cereals other than rice and wheat	77.92
Oil meals	48.04
Pulses	47.30
Poultry and Dairy Products	45.84
Groundnut	45.62
Spirit and Beverages	31.57
Guargum/Meal	28.90
Meat and Preparations	24.34
Others (Products with higher growth but less	
than double the average)	
Fresh Fruits and Vegetables	22.67
Shallac	21.51
Sesame and Niger Seeds	20.76
Floriculture Products	19.01
Coffee	16.63
Caster Oil	15.29

Table 7.4

Growth Rate of Indian Exports and Global Growth

Commodities	% CAGR of Growth in Global Trade during 2001-2004	% CAGR of Growth in Exports from India
Теа	1.16*	-0.40
Coffee	-2.88	16.63
Rice	27.56	6.65
Wheat	4.51	-31.85
Cashewnut	9.00	7.62
Groundnuts	32.84	45.62
Mango	37.14**	15.02
Grape	21.50	24.90
Onion	22.80	23.16
Bovine Meat	12.85	12.18

* The figure for growth in global trade is for the category tea and mate.

** The figure for growth in global trade is for the category mangoes, guava and mangosteen.

7.1.6 Comparative Price Realization

The unit value realizations in the first and fourth years of the X Plan have been compared to find out whether the price realization has improved during these four years. The analysis of data in the Table 7.5 does not indicate clear trends on the either side. It is not clear whether an inference can be drawn to say that price realization has improved or gone down. This is in conformity with the view held in general that global prices in agriculture products are highly volatile.

7.1.7 Organic Products Exported from India

India has also been exporting organic products. Main organic products and destination for exports for the year 2004-05 are shown in Table 7.6.

7.2 EXPORT POTENTIAL AND PROJECTIONS FOR XI PLAN PERIOD

7.2.1 Export Potential of Agricultural Products

India has outstanding competitive strength in food processing, being blessed with natural advantages. We have year-round sunshine, variable soil texture and varied agroclimatic zones. We have a reservoir of manpower – skilled, unskilled, technical, scientific and managerial.

The strength on the demand side is India's huge domestic market with a growing middle-class with rising income fuelling consumption. Gulf countries and the countries in the SAARC region form the major market for Indian agro products. By 2010, consumer spending in developing and emerging markets is projected to overtake that in developed countries in purchasing power parity. Since the bulk of the world population lives in the developing and emerging markets these would continue to be significant consumers of the agro products. Estimates suggest that an additional 1.2 billion consumers across the world will buy packaged foods for the first time, by 2010, bulk of which will be from the developing and emerging markets in the developing and set would have

tremendous scope of increasing the export of agro products to these markets particularly after the domestic support and export subsidies are reduced by the EU and USA under WTO commitments by 2013.

Commodity	Unit Value in 2002-03	Unit Value in 2005-06	Growth in %
Теа	90.55	103.35	14.13
Coffee	53.36	88.65	66.15
Rice	11.66	15.22	30.54
Wheat	4.79	7.47	55.87
Other cereals	8.58	8.00	-6.80
Pulses	17.94	24.79	38.16
Tobacco (Unmfd)	73.24	71.34	-2.59
Spices	60.67	55.05	-9.27
Cashew	157.70	206.51	30.95
Sesame seed	31.37	37.48	19.48
Niger seed	21.52	21.22	-1.43
Groundnut	26.26	27.03	2.91
Oil meal	8.55	6.92	-18.99
Guar meal	43.48	56.19	29.24
Caster oil	33.83	36.87	9.01
Shallac	156.97	166.93	6.34
Sugar	11.51	17.58	52.74
Molases	2.03	3.77	85.26
Fruits and vegetables seeds	94.74	124.22	31.12
Mango fresh	22.15	18.40	-16.92
Grapes fresh	42.89	39.71	-7.43
Onion fresh	6.15	7.37	19.97
Mushrooms	254.53	34.28	-86.53
Gherkins	18.44	8.26	-55.22
Bovine meat	43.82	57.17	30.46
Poultry	59.16	11.49	-80.58
Dairy	71.64	92.44	29.04

Table 7.5Price Realization of Indian Exports

Table 7.6

Products	Production (Tonnes)	Export Quantity (Tonnes)	Value (Rs in Lakhs)	Destination
Honey	3009	3814	2318.80	Germany, USA
Tea	44520	1876	4788.63	Germany, Srilanka, Japan, USA, Australia, U.K., Netherlands
Spices	67893	350	516.66	Italy, USA, France, Switzerland, Taiwan, Japan
Coffee	9194	162	146.63	Germany & U.K.
Rice	3236	1070	164.59	U.K., Germany
Others	250007	1072	1598	Europe, USA etc.
Total	377859	8344	9533.31	

Organic Products Exports form India (2004-05)

7.2.2 Export Potential and Opportunities for Indian Tobacco

India is the third largest producer (all types) after China and Brazil and is the fourth largest exporter of tobacco after Brazil, China and USA. About 50 percent of production of FCV, Burley, and other cigarette tobaccos is exported.

The opportunities for Indian tobacco arise from the following:

- The decline of production of tobacco in major competing countries Zimbabwe, USA and Canada
- Decoupling of the subsidies (2.98 Euros per kg) on tobacco production in EU countries
- Increase in export prices in China
- Unfavorable exchange rates, withdrawal of state tax benefits and decline in profits for tobacco merchants in Brazil

- Revival of East European markets and increase in demand for low cost tobacco for production of low-end cigarettes.
- Increased demand for Indian tobacco in neighboring Asian countries like Vietnam, South Korea, Malaysia, and Philippines
- The exports of Indian tobacco to South and South East Asian countries have increased from 11 percent in 2001-02 to 23 percent in 2005-06.
- International cigarette manufacturers are looking for low cost tobaccos consistent with quality and therefore Indian tobacco is expected to have better export opportunities in the future particularly for West and East European countries (including Russia and CIS) and South and South East Asian countries.

Under these circumstances, India can become a major player in the world tobacco market if it can harness the emerging opportunities and enhance its exports to major importing countries.

7.2.3 Projections for Exports

The export projections for APEDA monitored products and tobacco are mentioned in Table 7.7.

7.3 CONSTRAINTS AFFECTING EXPORT PERFORMANCE

7.3.1 Supply Side Issues

Agriculture accounts for about 20 percent of the GDP of the country and employs about two-third of its population. However, low and variable growth of output, poor and declining yields, inadequacy of capital formation and infrastructure and degradation of natural resources due to inefficient cropping patterns work as major obstacles for rapid and sustainable agricultural growth. As a result, Indian agriculture is still not prepared to face the challenges arising out of the complete phase out of the quantitative restrictions on import. Nor it is able to exploit its full potential for exports.

Table 7.7

Export Projections for APEDA Monitored Products and Tobacco

(Rs in crores)

	Commodities	2007-08	2008-09	2009-10	2010-11	2011-12
I	PLANTATIONS					
1	Теа					
2	Coffee					
	AGRI & ALLIED PRODUCTS					
1	Cereal					
	a) Rice	8890	9330	9795	10280	10790
	b} Wheat	0	0	0	0	0
	c) Others	545	570	595	625	655
2	Pulses	211	627	696	771	864
3	Tobacco	1476	1507	1537	1565	1580
	a) Unmanufactured					
	b) Manufactured					
4	Spices					
5	Nuts & Seeds					
	a) Cashew incl. CNSL					
	b) Sesame & Niger seed					
	c) Groundnut	967	1064	1170	1287	1415
6	Oil Meals					
7	Guargum Meal	2088	2297	2527	2780	3058
8	Castor Oil					
9	Shellac					
10	Sugar & Mollasses					
11	Processed Foods					
	a) Fresh Fruits & Vegetables	2775	3190	3665	4115	4845
	b) Fruits/Vegetable seeds	163	188	216	245	285
	c) Processed and misc. processed items	2655	2837	3264	3758	4320
12	Meat & Preparations	3700	4253	4890	5620	6465
13	Poultry & Dairy Product	1585	1822	2095	2410	2770
14	Floriculture products	381	437	502	580	665
15	Spirit & Beverages	259	285	313	344	378
	Total	24219	26900	29728	32815	36510

(i) Low and Volatile Growth in Agriculture

Low and volatile growth rates in Indian agriculture and allied sectors was reflected in the average annual growth rate of value added in the sector declining from 4.7 percent during the Eighth Plan to 2.1 percent during the Ninth Plan. As against the target of annual growth rate of 4 percent during the Tenth Plan (2002-2007), agricultural growth rate in the first year (2002-03) was negative (-6.9 percent) due to a severe drought of 2002. With a favourable monsoon, growth was an impressive 10 percent in 2003-04. But deficient rainfall in 2004-05 again caused a decline of food grains production as well as rate of growth of agriculture and allied sectors to 0.7 percent. The advance estimates of National Income for 2005-06 released by the CSO on February 7, 2006 have indicated a growth rate of 2.3 percent for the agriculture and allied sectors based on the New Series (at 1999-2000 prices).

(ii) Low Productivity Levels

Low productivity has afflicted growth of Indian agriculture. For example, though India accounted for 21.8 percent of global paddy production, the yield per hectare in 2002 was less than that in neighboring Bangladesh and Myanmar, and only about a third of that in Egypt, which had the highest yield level in the reference year. India, while accounting for 12 percent of global production in wheat, had average yield levels higher than the global average, but only a third of the highest level achieved in the UK in 2002. However, in maize and groundnut, while accounting for 2 percent and 18 percent of global output, yield levels were only 39 percent and 57 percent of the global levels. In sugarcane, however, the yield was higher than the global average.

(iii) Limitations to Expansion of Acreage

While there is some scope for wasteland reclamation, there are obvious limitations to the expansion of acreage in Indian agriculture. Enhancement of agricultural growth is essential for achieving an overall GDP growth rate in the range of 8 to 10 percent, and improved productivity is critical for achieving accelerated agricultural growth.

(iv) Capital Formation in Indian Agriculture

The decline in the share of the agricultural sector's capital formation in GDP from 2.2 percent in the late 1990s to 1.7 percent in 2004-05 is a matter of concern. This declining share was mainly due to the stagnation or fall in public investment in irrigation, particularly since the mid-1990s. However, there is indication of a reversal of this trend with public sector investment in agriculture reaching its highest level of Rs 12,591 crore in 2004-05 since the early nineties. The share of public investment in gross investment increased by over 11 percentage points to reach 29.2 percent in 2004-05 relative to 1999-2000.

The improved availability of credit for agriculture and liberalized trade for agricultural products should enhance private investment in agriculture. The Budget for 2005-06 also stepped up public investment significantly for rural roads and rural employment programmes. Major measures taken for agricultural development for enhanced capital formation include the following:

- A roadmap for agricultural diversification has been prepared with focus on horticulture, floriculture, animal husbandry and fisheries.
- Strengthening of agriculture marketing infrastructure.
- National scheme for the repair, renovation and restoration of water bodies.
- Focus on micro irrigation, micro finance, micro-insurance and rural credits.
- Setting up of a Knowledge Centre in every village.
- Setting up a National Fund for strategic agricultural research.
Provision of urban amenities in rural areas through creation of new growth poles.

(v) Provisions for Agriculture in Union Budget 2006-07

In order to strengthen the agricultural sector, the Union Budget 2006-07 identified assured irrigation, access to credit, diversification and creation of markets for agricultural products as thrust areas for growth. The Union Budget also provided for an enhanced outlay of Rs 7,121 crore in 2006-07 (Rs 4,500 crore in the previous year) to give a boost to irrigation. The programme for repair, renovation and restoration of water bodies is being implemented through pilot projects in 23 districts in 13 states. The design of the programme has been finalized in consultation with the states. Restoration of water bodies is expected to give an element of stability to agricultural production and thereby give a boost to yields.

(vi) Disconnect between the Farmer and the Market - Inadequate Infrastructure for Grading, Packaging and Transportation

The existing marketing infrastructure is far from adequate. Nearly half of the villages are still not connected by roads. The teledensity in rural areas is only around 2.0 as against the national average of more than 11. At the level of regulated markets, there are only 1093 grading units in a total of 7557 market yards/sub-yards majority of which are for grains. The facilities for perishables are very few. The availability of scientific storage capacity is estimated to be only 30 percent of the requirement. The cold storage facility availability is estimated to be 10 percent only. The estimates for loss of primary produce before reaching the market due to lack of proper handling, cleaning, sorting, grading and packaging facilities at the village level are about 7 percent for foodgrains, 30 percent for fruits and vegetables and 10 percent for spices. The unavailability of appropriate infrastructure both in terms of physical infrastructure and institutions for marketing of agriculture produce have created a disconnect between the producers and the market.

(vii) Domestic Prices are High as Compared to the International Prices

India is undoubtedly the third largest producer of agro and food products, next to USA and China. Yet, the demand in the internal markets being high, the domestic prices in the case of most of the crops/produce are higher as compared to the prices ruling in the international markets making exports a difficult proposition.

0.1.1 Restrictions on Exports of Certain Commodities from Time to Time

Despite a very liberal Foreign Trade Policy, there have been several restrictions on the export of agricultural products. This prevents the regular flow of restricted commodities for export and makes it difficult to cultivate a regular market for these products on a sustainable basis. Frequent restrictions on the export of onions, pulses and wheat are some of the examples. In the post-WTO era, an export growth led strategy for the Indian agriculture should be considered as a preferred option for increasing the incomes of the farmers.

7.3.3 Non Tariff Barriers – Major Issues

7.3.3.1 Issues Relating to Pesticide Residues

The maximum residue levels (MRLs) of pesticides and other contaminants are largely based on technology development and not based on actual risk assessment. The level of protection goes beyond the ALOP (Appropriate Level of Protection) enshrined in the SPS Agreement. Further, There is no harmonization of MRLs across all countries of a customs union. This issue needs intervention.

7.3.3.2 Delays in Equivalence

Most developed countries take many years to reach a decision on equivalence on standards and processes with exporting countries. For instance, USA took 3 years on organic standards, Japan took 20 years for market access on mangoes, and EU has already taken more than 8 years to agree on equivalence in case of egg products. Australia has already taken more than 6 years to give market access for mangoes.

7.3.3.3 Lack of Harmonization with Codex

Although, the reference point for standards is Codex, most developed countries establish stricter standards as is allowed under the SPS Agreement. The true purpose of establishing Codex standards is not achieved by the developing countries. Moreover, even though, the Codex provides for a Special and Differential Treatment for developing countries, it remains only on paper.

7.3.3.4 Capacity Building Issue

The SPS Agreement provides for ensuring capacity building programmes for developing countries. Under this, only seminars and conferences are organized. When it comes to organizing specific training programmes, either it takes a long time to organize it, or it is too little.

7.3.3.5 Impractical Approaches to Product Testing

Taking the example of aflatoxin in spices, processed food, groundnuts, and cereals, there is a requirement of meeting a certain MRL value of aflatoxin in these products. The sampling procedure for testing purposes is extremely complex and expensive. The procedure is technically and economically not feasible in the case of developing countries. Moreover, it is expected that the MRL should be respected on arrival of the consignment at the port of the importing countries (e.g. EU ports). This is impractical because aflatoxins can come up at any stage after drawal of samples for testing. The voyage provides an optimum environment for growth of aflatoxins. No exporting country can absolutely guarantee this, not even the most developed countries.

7.3.3.6 Unreasonable Clearance Procedure

Certain developed countries like the EU destroy processed food consignments at their ports if the risk to human health is high. This is unreasonable. The exporting countries must have the first right to the rejected consignment and should have the option to either take it back to their country or to ship it to another country where it is acceptable according to its laws. EU laws do not apply to other countries. The unreasonable procedure needs a change.

7.3.3.7 Traceability

This is a concept that has just been defined by the Codex and its application is still to be established. However, countries like the EU have already started demanding traceability in all the products right from the farm to the consumer. This is technically and economically not feasible in many developing countries. India's view is that traceability may be considered only as a risk management tool and only if no other feasible option to control that risk is available. Moreover, it should not be applicable on raw produce and should not be used as a barrier to trade.

7.3.3.8 Environment and Labour Issues

The SPS Agreement, through the Codex, allows formulation of standards and practices for ensuring food safety and fair trade practices. In the name of fair trade, most developed countries are expecting compliance with their environment and labour requirements. This is an issue, which has been under discussion at other fora, but when it comes to Codex discussions, it is difficult to oppose.

7.3.4 Factors Eroding Benefit of Low Cost Production

7.3.4.1 Lack of Cargo Space and High Airfreight Rates

India has a unilateral open skies policy for air cargo. According to this policy, any operator, including foreign operator, can operate any number of flights by any

type of aircraft to any airport having customs and immigration facilities without any bilateral agreement. The operators are also free to charge rates according to the demand and supply situation. But according to exporters, many airlines don't offer cargo space because of one way freight (to Europe and North America) and so only handful of airlines including Air India and Indian Airlines remain the major handlers of freight.

Gol's Committee report 'A Road Map for Civil Aviation Sector' identifies the following three major problems why air transport costs are so high in India. While fuel costs are usually 10-15 percent of airline operating costs, in India, they are nearly 30 percent. This is because the average price of aviation turbine fuel (ATF) in India is nearly 190 percent higher than the international price. The excise and sales taxes constitute nearly 45 percent of the ATF price. The fact that only government-owned oil companies supply the ATF has lead to lack of competition in the fuel prices. Furthermore, according to the Committee report, the airport charges in India are 78 percent higher than the international average charges.

7.3.4.2 High Sea Freight Rates

Price competitiveness is essential in order to sustain the market. Transportation of mangoes by air is costlier by 10 times, as compared to sea, to most of our Asian markets, especially to the west Asian markets. Thus, export of fruits and vegetables in bulk by sea is the best alternative. However, in order to preserve quality and extended shelf life during sea transportation, there is need for development of protocols for management of different varieties of specific fruits and vegetables during voyage time, through use of alternative techniques of refrigeration, and controlled/modified atmosphere management.

The situation in case of sea freight is also similar. Findings in a recent study conducted by the World Bank indicate that the share of transportation costs in the CIF price of Indian grapes in the Netherlands is 48 percent as compared to 18 percent in the case of grapes arriving from Chile. The delivery cost is USD 790 for one MT of grapes from India in the Netherlands markets as compared to USD 300 in case of Chile although Chile is twice as far from the Netherlands as India.

While the improvements in the supply chain infrastructure will show their positive impact in the long term, we need to evolve means to compensate the Indian exporters for the disadvantage they have due to high air/sea freight costs. The scale of compensation under the transport assistance scheme currently being implemented by APEDA is inadequate.

7.4 REGULATORY ENVIRONMENT AND POLICY RELATED ISSUES

7.4.1 Foreign Trade Policy (FTP) 2004-09

(i) General Provisions Regarding Exports and Imports

As per Foreign Trade Policy 2004-2009, exports and imports shall be free, except in cases where they are regulated by the provisions of this Policy or any other law for the time being in force. The item wise export and import policy shall be, as specified in ITC(HS) published and notified by Director General of Foreign Trade, as amended from time to time. (Refer para 2.1 of the FTP)

(iii) Free Exports

All goods may be exported without any restriction except to the extent such exports are regulated by ITC(HS) or any other provision of this Policy or any other law for the time being in force. The Director General of Foreign Trade may, however, specify through a public notice such terms and conditions according to which any goods, not included in the ITC(HS), may be exported without a licence/ certificate/ permission. (Refer para 2.29 of the FTP)

(iii) New Sectoral Initiatives – Agriculture and Village Industry (Para 1B.1 of the FTP)

For the present as one of the thrust sectors the following facilities shall be extended to the Agriculture and Village Industry:

- (a) A new scheme called the Vishesh Krishi and Gram Udyog Yojana
 (Special Agricultural and Village Industry Scheme) for promoting export of fruits, Vegetables, Flowers, Minor Forest produce, Dairy, Poultry and their value added products and Gram Udyog products has been introduced (Para 3.8).
- (b) Funds shall be earmarked under ASIDE for development of Agri Export Zones (AEZ).
- (c) Capital goods imported under EPCG shall be permitted to be installed anywhere in the AEZ.
- (d) Import of restricted items, such as panels, shall be allowed under the various export promotion schemes.
- (e) Import of inputs such as pesticides shall be permitted under the Advance Authorisation for agro exports.
- (f) New towns of export excellence with a threshold limit of Rs 250 crore shall be notified.

(iv) Vishesh Krishi and Gram Udyog Yojana (Para 3.8 of the FTP)

The objective of Vishesh Krishi and Gram Udyog Yojana (Erstwhile Vishesh Krishi Upaj Yojana) is to promote export of Fruits, Vegetables, Flowers, Minor Forest produce, Dairy, Poultry and their value added products, and Gram Udyog products by incentivising exporters of such products. The exports shall be entitled for duty credit scrip equivalent to 5

percent of the FOB value of 35 exports. A detailed list of these agricultural products and the period of exports for which this entitlement is to be granted is given in Appendix 37A of the Handbook of Procedures (Vol. I).

Gram Udyog products as listed in Appendix 37A of the Handbook of Procedures (Vol. I) shall be entitled for duty credit scrip equivalent to 5 percent of the FOB value of exports in respect of the exports made on or after April 01, 2006.

However, the duty credit scrip shall be granted only at a reduced rate of 3.5 percent of the FOB value of exports in such cases where the exporter has availed the benefits under Chapter 4 of this Policy for import of Agriculture Inputs (other than catalysts, consumables and packing materials) relating to export item under this scheme. The scrip and the items imported against it shall be freely transferable.

Under the Scheme, exports of all eligible items (including the value added variants) are eligible for benefits as per Para 3.8.2 provided they are specifically listed in Appendix 37A of Handbook of Procedures (Vol. I). Items which are restricted or prohibited for export under Schedule-2 of the Export Policy in the ITC(HS) Classification of Export and Import items shall not be eligible for any benefits under Para 3.8.2.

Following exports shall not be taken into account for duty credit entitlement under the scheme:

- (a) Export of imported goods covered under Para 2.35 of the Foreign Trade Policy or exports made through transshipment.
- (b) Deemed Exports.
- (c) Exports made by SEZs units and EOUs units.

The Duty Credit may be used for import of inputs or goods, which are otherwise freely importable under ITC(HS) Classifications of Export and Import Items. Imports from a port other than the port of export shall be allowed under TRA facility as per the terms and conditions of the notification issued by Department of Revenue. Items listed in Appendix 37B of Handbook of Procedures (Vol. I) shall not be allowed to be imported under the scheme.

Additional customs duty/excise duty paid in cash or through debit under Vishesh Krishi and Gram Udyog Yojana shall be adjusted as CENVAT Credit or Duty Drawback as per rules framed by the Department of Revenue. Government reserves the right in public interest, to specify from time to time the export products, which shall not be eligible for calculation of entitlement.

(v) Focus Market Scheme

The objective is to offset the high freight cost and other disabilities to select international markets with a view to enhance our export competitiveness to these countries. Exports of all products to the notified countries shall be entitled for duty credit scrip equivalent to 2.5 percent of the FOB value of exports for each licensing year commencing from April 01, 2006. The scrip and the items imported against it would be freely transferable.

- (a) Under the Scheme, export to all countries as given in Appendix 37-C of Handbook of Procedures (Vol. I) shall qualify for export benefits as per Para 3.9.2. Items which are restricted or prohibited for export under Schedule-2 of the Export Policy in the ITC (HS) Classification of Export and Import items shall not be eligible for any benefits under Para 3.9.2.
- (b) The following exports shall not be taken into account for calculation of export performance or for computation of entitlement under the scheme:
 - Export of imported goods covered under Para 2.35

of the Foreign Trade Policy or exports made through transshipment.

- Export turnover of units operating under EZ/EOU/EHTP/STPI/ BTP Schemes or supplies made to such units or products manufactured by them and exported through DTA units.
- Deemed Exports.
- Service Exports.
- Diamonds and other precious, semi precious stones.
- Gold, silver, platinum and other precious metals in any form, including plain and studded Jewellery.
- Ores and Concentrates, of all types and in all forms.
- Cereals, of all types.
- Sugar, of all types and in all forms.
- Crude / Petroleum Oil & Crude / Petroleum based
 Products covered under ITC HS codes 2709 to 2715, of all types and in all forms.
- (c) Exporters shall have the option to apply for benefit either under the Focus Market Scheme or under the Focus Product Scheme or under Vishesh Krishi and Gram Udyog Yojana in respect of the same exported product/s.

The Duty Credit may be used for import of inputs or goods including capital goods, provided the same is freely importable under ITC (HS). Imports from a port other than the port of export shall be allowed under TRA facility as per the terms and conditions of the notification issued by Department of Revenue. Additional customs duty/excise duty paid in cash or through debit under this scrip shall be adjusted as CENVAT Credit or Duty Drawback as per rules framed by the Department of Revenue. Government reserves the right in public interest, to specify from time to time the export products or exports to such countries, which shall not be eligible for calculation of entitlement.

(vi) Focus Product Scheme

The objective is to incentivise exports of such products which have high employment intensity in rural and semi urban areas so as to offset the inherent infrastructure inefficiencies and other associated costs involved in marketing of these products. Exports of notified products to all countries shall be entitled for duty credit scrip equivalent to 2.5 percent of the FOB value of exports for each licensing year commencing from April 01, 2006. However only 50 percent of the export turnover of such products shall be counted for benefits under the Scheme. The scrip and the items imported against it would be freely transferable. Under the Scheme, export of such products as given in Appendix 37-D of Handbook of Procedures (Vol. I) shall qualify for export benefits as per Para 3.10.2

The following exports shall not be taken into account for calculation of export performance or for computation of entitlement under the scheme:

- Export of imported goods covered under Para 2.35 of the Foreign Trade Policy or exports made through transshipment.
- Exports turnover of units operating under SEZ
 Scheme and 100% EOU Scheme or products
 manufactured by them and exported through DTA units.
- c. Deemed Exports.

Exporters shall have the option to apply for benefit either under the Focus Market Scheme or under the Focus Product Scheme or under Vishesh Krishi and Gram Udyog Yojana in respect of the same exported product/s.

The Duty Credit may be used for import of inputs or goods including capital goods, provided the same is freely importable under ITC(HS). Imports from a port other than the port of export shall be allowed under TRA facility as per the terms and conditions of the notification issued by Department of Revenue. Additional customs duty/excise duty paid in cash

or through debit under this scrip shall be adjusted as CENVAT Credit or Duty Drawback as per rules framed by the Department of Revenue. Government reserves the right in public interest, to specify from time to time the export products or exports to such countries, which shall not be eligible for calculation of entitlement.

(vii) Export Oriented Units (EOUs)

Units undertaking to export their entire production of goods and services, except permissible sales in the DTA, may be set up under the EOU Scheme. EOU unit shall be a positive net foreign exchange earner except for sector specific provision of Appendix 14-I-C of Handbook, where a higher value addition shall be required. Net Foreign Exchange Earnings (NFE) shall be calculated cumulatively in blocs of 5 years, starting from the commencement of production. Only projects having a minimum investment of Rs one crore in plant and machinery shall be considered for establishment as EOUs under the Scheme. This shall, however, not apply to existing units and units in agriculture/floriculture/aquaculture, and animal husbandry. The Board of Approval may also allow establishment of EOUs with lower investment criteria.

(viii) Agri Export Zones

Under Chapter 16 of Exim Policy 2001, a new concept of Agri Export Zone (AEZ) has been inserted by Government of India. APEDA has been nominated as the Nodal Agency to coordinate the efforts on the part of Central government negotiations. This concept has been explained below:

(a) The Concept

Sporadic efforts have been made in the past for promoting export of agricultural produce/products from the country. Thus, on the one hand Research and Development has taken place with little bearing on the development of a particular agricultural produce for the purpose of export, on the other hand financial and fiscal incentives are being provided for exporting a particular produce without actually addressing pre-harvesting and post-harvesting practices. The concept of agri export zone thus attempts to take a comprehensive look at a particular produce/product located in a contiguous area for the purpose of developing and sourcing the raw materials, and their processing/packaging, leading to final exports. Thus, the entire effort is centred around the cluster approach of identifying the potential products, the geographical region in which these products are grown and adopting an end-toend approach of integrating the entire process right from the stage of production till it reaches the market. There would also be a need to identify/enlist difficulties/problems encountered at each stage. These difficulties could be procedural in nature or may relate to a particular quality standard. A package needs to be developed to suggest solutions to these problems and agency/agencies identified to implement these in a given time frame.

(b) Present Status

So far, 60 AEZs have been sanctioned by the government (Table 7.8). These envisage an investment of Rs 1717.95 crores and export of Rs 11821.47 crores over a period of 5 years. An investment of about Rs 811 crores has already been made by various stakeholders and the level of actual exports reached is about Rs 5185 crores.

The progress under all the AEZs has not been uniform. In view of the sluggish progress in some of the AEZs, the Ministry of Commerce constituted a Peer Review Group for evaluation of the performance of the AEZs. Two of the main findings of this evaluation are:

 (i) In general there has been little public investment from the Central Government or the State Government in the AEZs. (ii) There has been an indiscrete proliferation of AEZs without any mid-term or interim review.

Recently Yes Bank has initiated an exercise of shortlisting AEZs for which they will prepare a blue print for action by various stakeholders. Ministry of Commerce is considering that funds can be earmarked under the ASIDE Scheme of the Ministry for some of the identified activities.

7.4.2 Residue Monitoring Plans (RMPs)

RMPs have been developed and implemented by APEDA for grapes, egg products, honey and groundnut. RMP for onion has also been developed. There have not been any complaints of excessive residues of drugs, pesticides, aflatoxins and heavy metals in these products since the implementation of these RMPs.

7.4.3 Food Safety and Standards Act 2006

The Food Safety and Standards Act 2006 has been enacted in August 2006 in order to consolidate the laws relating to food and to establish the Food Safety and Standards Authority of India for laying down science based standards for articles of food and to regulate their manufacture, storage, distribution, sale and import, to ensure availability of safe and wholesome food for human consumption. The Section 97 of the Act refers to the action by Central Government for repeal of following earlier Acts/Orders:

- The Prevention of Food Adulteration Act, 1954 (37 of 1954).
- The Fruit Products Order, 1955.
- The Meat Food Products Order, 1973.
- The Vegetable Oil Products (Control) Order, 1947.
- The Edible Oils Packaging (Regulation) Order, 1998.
- The Solvent Extracted Oil, De oiled Meal, and Edible Flour (Control) Order, 1967.
- The Milk and Milk Products Order, 1992.

• Any other order issued under the Essential Commodities Act, 1955 (10 of 1955) relating to food.

Table 7.8List of Agri Export Zones Sanctioned so far (60)

S. No.	State		AEZ Project	District/Area
1	West Bengal	1	Pineapple	Darjeeling, Jalpaiguri, Uttar Dinajpur, Cooch Behar, Howrah
		2	Lychee	Murshidabad, Malda, 24 Pargana(N) and 24 Pargana(S)
		3	Potatoes	Hooghly, Burdhwan, Midnapore (W), Uday Narayanpur, Howrah
		4	Mango	Maldah and Murshidabad
		5	Vegetables	Nadia, Murshidabad and North 24 Parganas
		6	Darjeeling Tea	Darjeeling
2	Karnataka	7	Gherkins	Tumkur, Bangalore Urban, Bangalore Rural, Hassan, Kolar, Chitradurga, Dharwad and Bagalkot
		8	Rose Onion	Bangalore (Urban), Bangalore (Rural), Kolar
		9	Flowers	Bangalore (Urban), Bangalore (Rural), Kolar, Tumkur, Kodagu and Belgaum
		10	Vanilla	Districts of Dakshin Kannada, Uttara Kannada, Udupi, Shimoga, Kodagu, Chickamagalur
3	Uttranchal	11	Lychees	Udhamsingh Nagar, Dehradun and Nainital
		12	Flowers	Dehradun, Pantnagar, Udhamsingh Nagar, Nainital and Uttarkashi
		13	Basmati Rice	Udham Singh Nagar, Nainital, Dehradun and Haridwar
		14	Medicinal & Aromatic Plants	Uttarkashi, Chamoli, Pithoragarh, Dehradun, Nainital, Haridwar and Udhamsingh Nagar
4	Punjab	15	Vegetables (Cabbage Broccoli, Okra, Peas, Carrot, Baby Corn, Green Chillies, Green Beans, Tomato)	Fatehgarh Sahib, Patiala, Sangrur, Ludhiana and Ropar
		16	Potatoes	Singhpura, Zirakpur Distt. Patiala and satellite centres at Rampura Phul, Muktsar, Ludhiana, Jullundur
		17	Basmati Rice	Gurdaspur, Amritsar, Kapurthala, Jalandhar, Hoshiarpur & Nawanshahar
5	Uttar Pradesh	18	Potatoes	Agra, Hathras, Farrukhabad, Kannoj, Meerut, Baghpat and Aligarh, Janpad Badaiyun, Rampur, Ghaziabad, and Firozabad
		19	Mangoes and Vegetables	Lucknow, Unnao, Hardoi, Sitapur and Barabanki
		20	Mangoes	Saharanpur, Muzaffarnagar, Bijnaur, Meerut, Baghpat and Bulandshahr, Jyotifulenagar

		21	Basmati Rice	Bareilly, Shahjahanpur, Pilibhit, Rampur, Badaun, Bijnor, Moradabad, JB Phulenagar, Sharanpur, Mujjafarnagar, Meerut, Bulandshahr, Ghaziabad And Baghpat
6	Maharashtra	22	Grape & Grapevine	Nasik, Sangli, Sholapur, Satara, Ahmednagar
		23	Mangoes	Rantagiri, Sindhudurg, Raigarh and Thane
		24	Kesar mango	Aurangabad, Beed,Jalna, Ahmednagar and Latur
		25	Flowers	Pune, Nasik, Kolhapur and Sangli
		26	Onion	Nasik, Ahmednagar, Pune, Satara, Jalgaon, Solapur
		27	Pomegranate	Districts of Solapur, Sangli, Ahmednagar, Pune, Nasik, Osmanabad & Latur
		28	Banana	Jalgaon, Dhule, Nandurbar, Buldhana, Parbhani, Hindoli, Nanded and Wardha
		29	Oranges	Nagpur and Amraoti
7	Andhra Pradesh	30	Mango Pulp & Fresh Vegetables	Chitoor
		31	Mango & Grapes	Rangareddy, Medak, Mehboobnagar
		32	Mangoes	Krishna
		33	Gherkins	Districts of Mahboobnagar, Rangareddy, Medak, Karimnagar, Warangal, Ananthapur and Nalgonda
		34	Chilli	Guntur
8	Jammu & Kashmir	35	Apples	Srinagar, Baramula, Anantnag, Kupwara, Kathua and Pulwama
		36	Walnut	Baramulla, Anantnag, Pulwama, Budgam,Kupwara, Srinagar, Doda, Poonch, Udhampur, Rajouri and Kathua
9	Tripura	37	Pineapple	Kumarghat, Manu, Melaghar, Matabari and Kakraban Blocks
10	Madhya Pradesh	38	Potatoes, Onion and Garlic	Malwa, Ujjain, Indore, Dewas, Dhar, Shajapur, Ratlam, Neemuch Mandsaur and Khandwa
		39	Seed Spices	Guna, Mandsaur, Ujjain, Rajgarh, Ratlam, Shajapur and Neemuch
		40	Wheat (including sharbati wheat for Bhopal Zone)	Ujjain Zone (Neemuch, Ratlam, Mandsaur and Ujjain), Indore Zone (Indore, Dhar, Shajapur and Dewas) and Bhopal Zone (Sehore, Vidisha, Raisen, Hoshangabad, Harda, Narsinghpur and Bhopal)
		41	Lentil and Grams	Shivpuri, Guna, Vidisha, Raisen, Narsinghpura, Chhindwara
		42	Oranges	Chhindwara. Jpsjamgabad. Betul
11	Tamil Nadu	43	Cut Flowers	Dharmapuri
		44	Flowers	Nilgiri
		45	wangoes	Uistricts of Madural, Theni, Dindigul,
		16		Cuddaloro, Thaniayur, Pudukottai and
		40	Cashewnut	Sivaganga
12	Bihar	47	Lychee, Vegetables & Honey	Muzaffarpur, Samastipur, Hajipur, Vaishali, East and West Champaran, Bhagalpur, Begu Sarai, Khagaria, Sitamarhi, Saran and Gopalganj
13	Gujarat	48	Mangoes & Vegetables	Ahmedabad, Khaida, Anand, Vadodara, Surat, Navsari, Valsad, Bharuch, Narmada

		49	Value Added Onion	Districts of Bhavnagar, Surendranagar, Amreli, Rajkot, Junagadh and Jamnagar Districts
		50	Sesame Seeds	Amerali, Bhavnagar, Surendranagar, Rajkot, Jamnagar
14	Sikkim	51	Flowers (Orchids) & Cherry Pepper	East Sikkim
		52	Ginger	North, East, South & West Sikkim
15	Himachal Pradesh	53	Apples	Shimla, Sirmaur, Kullu, Mandi, Chamba and Kinnaur
16	Orissa	54	Ginger and Turmeric	Kandhamal
17	Jharkhand	55	Vegetables	Ranchi, Hazaribagh and Lohardaga
18	Kerala	56	Horticulture Products	Thrissur, Ernakulam, Kottayam, Alapuzha, Pathanamthitta, Kollam, Thiruvanthapuram, Idukki and Pallakad
		57	Medicinal Plant	Wayanad, Mallapuram, Palakkad, Thrissur, Ernakulam, Idukki, Kollam, Pathanamittha, Thiruvananthapuram
19	Assam	58	Fresh and Processed Ginger	Kamrup, Nalbari, Barpeta, Darrang, Nagaon, Morigaon, Karbi Anglong and North Cachar
20	Rajasthan	59	Coriander	Kota, Bundi, Baran, Jhalawar & Chittoor
		60	Cumin	Nagaur, Barmer, Jalore, Pali and Jodhpur

7.4.4 FDI in Retail

As of now, there is no policy for FDI in retail. The government had ensured suitable safeguards against adverse impact on small traders by allowing FDI only in retail of Single Brand products. The main concern is not foreign Vs domestic, but big Vs the small. The issue is not just about buying and selling but also about access to technology, and backward linkages especially in sectors like food processing so as to reduce wastage of fruits and vegetables and ensure better returns to the farmers for their produce. A suitable model needs to be developed for Indian context.

7.4.5 Organized Retail Trade

Organized retail is expected to help solve the issue of high freight rates and lack of cargo space. The high freight rates and lack of cargo space have been acting as deterrents particularly for the export of perishables. The organized retail is also expected to throw up new opportunities for the airline companies in the cargo business. The upcoming retail ventures like Reliance and Bharti would be in a position to strike long term strategic alliances with international as well as domestic cargo fleets. The airlines would leverage opportunities that would be thrown up by these developments. The cargo business is expected to open up a new opportunity to the airlines, which are not so far operating cargo flights. All this should lead to a more competitive business for all players who would be depending on each others growth and the transaction cost should come down for the exporters.

7.4.6 FDI for Hi-Tech Agriculture

FDI was generally not allowed in agriculture. However, with the objective of promoting use of latest technology and backward linkages, FDI up to 100 percent has been permitted under the automatic route in Floriculture, Horticulture, Development of Seeds, Animal Husbandry, Pisciculture, Aqua-culture and Cultivation of Vegetables and Mushrooms, under controlled conditions and services related to agro and allied sectors

FDI up to 100 percent with prior government approval is permitted in Tea plantation subject to the conditions of divestment of 26 percent equity of the company in favour of an Indian partner/Indian public within a period of five years; and prior approval of the State Government concerned in case of any future land use change.

7.4.7 Domestic Tax Regime

Sales Tax and other local taxes affect the viability of the food processing industry. They discourage the emergence of a strong food processing industry. It is understood that Ministry of Food Processing Industry is in dialogue with State Chief Ministers and the Empowered Committee on value added tax (VAT) so that zero percent VAT is imposed on perishable food items and not beyond four percent VAT is levied on non-perishable food items.

7.5 GAPS IN INFRASTRUCTURE AND INFRASTRUCTURE REQUIREMENTS

7.5.1 Gaps in Infrastructure

- (ii) The most important gap is the inadequacy of basic infrastructure relating to water, power and link roads in the rural areas, particularly in production belts identified under AEZs. For this, various schemes relating to rural development, agro industry, and water resources need to be implemented in convergence to ensure overall development of an identified area.
- (iii) The other gap relates to R&D with commercial linkages for development and introduction of varieties suitable for different end uses viz. table consumption and processing and/or suiting the requirements of different market segments. This should include extension efforts for training the farmers for use of recommended variety specific agronomic practices. The modules may be developed which are simple and easy to understand for the farmers. The modules should also cover the recommended maturity indices and harvesting techniques.
- (iv) The third gap pertains to strengthening of contract farming and other ways of developing backward linkages. For this purpose, a system may be developed for accreditation of service providers for extension services, quality management and logistics.
- (v) One of the main post harvest management practices is use of cold chain to prolong shelf life and preserve quality of fruits and vegetables. While cold storages are established in few pack houses, market yards and some airports, the available capacity is substantially low particularly at the farm level. Specialized cold storage with high humidity and facilities for ethylene removal as part of cold chain for export of fresh fruits need to be set up and made available for use on commercial basis. The supply chain infrastructure should include facilities for:

- Collection and aggregation in production areas with precooling;
- Movement and transfer of produce in specialized, reefer vehicles/containers; and
- Holding of stocks near to the markets with specialized storage facilities.
- (vi) There is also lack of multi modal transport facilities to link production areas with markets/exit points
- (vii) The infrastructure facilities for common use are also inadequate. Integrated production and processing facilities for different products such as pack houses for horticulture products, abattoirs for meat, meat products, need to be created. Following steps need to be taken:
 - (b) Strengthening of facilities at APMC markets and opening of new terminal markets both in public and private sectors.
 - (c) Cargo handling facilities at sea/air/land ports.
 - (d) Wholesale market cum auction centers for flowers.
- (viii) The exports of agro products both in fresh form and as processed food products by air are expensive. Price competitiveness is essential in order to sustain the market. For instance, transportation of mangoes by air to most of our Asian markets especially to the west Asian markets is costlier by 10 times as compared to sea. Thus, export of fruits and vegetables in bulk by sea is the best alternative. As such, there is a need for standardization of variety specific protocols for sea transportation, both for reefer and CA containers.
- (ix) The other problem relates to the mechanism for compliance of SPS requirements. The method of control of known pests and diseases vary from country to country (market specific viz. Vapour Heat Treatment for Japan; Hot Water Dip Treatment for China, Australia and New Zealand;

Irradiation Treatment for USA). We have to seek equivalence with the standards of the major importers. Institutional mechanism needs to be strengthened immediately to deal with these issues in a focused manner to bring in speed in the process of obtaining equivalence for country specific SPS measures. Further, markets in developed countries demand documented data on pests and disease status. Such markets can only be accessed after introduction of a regular system for monitoring through survey and surveillance of different production belts of major crops to begin with. We need to build up such data on a regular basis. At present, we react to the demand from the importing countries. There is also need to develop a risk analysis mechanism.

(ix) The infrastructure for testing of quality as per international requirements is also a major constraint. This would require setting up of new labs, and strengthening of existing labs both in public and private sector.

7.5.2 APEDA's Initiatives for Infrastructure Development

APEDA has taken several initiatives to create the needed infrastructure for promotion of exports.

- (i) Centers for perishable cargo at airports: New projects have been initiated at Amritsar, Hyderabad, Kolkata and Nasik. Walk-in type cold storages have been set up at Ahmedabad and Coimbatore airports.
- (ii) Centers for perishable cargo at seaports: New project is being initiated at Haldia seaport. This project has already been sanctioned by APEDA.
 Another project at JNPT port in Mumbai is being taken up.
- (iii) Pack-House Development: About 25 full-fledged pack-houses for export of fruits and vegetables have been sanctioned and are at various stages of being setup. In addition, more than 100 proposals for other infrastructure development have been sanctioned.

- (iv) Common pack-house facilities for small farmers: More than 15 common pack-house facilities have been set up/sanctioned in about 10 states for promoting export of good quality fruits and vegetables.
- (v) Flower Auction Centers: The flower auction center at Kolkata and Mumbai are under construction.
- (vi) Setting up of laboratories: Four government laboratories in the four regions have been supported to develop infrastructure for residue monitoring of drugs and pesticides in the case of various agricultural products. It is envisaged that these laboratories would eventually function as referral laboratories. Steps have also been initiated for upgrading quality control laboratories of state animal husbandry departments that are carrying out pre-shipment testing of meat consignments for exports.
- (vii) Laboratory for DNA testing of Basmati Rice at CEDFD, Hyderabad: For meeting the requirement of EU, a dedicated DNA testing facility for Basmati rice is being set up at CDFD, Hyderabad at a cost of Rs 3.52 crores. Funding supporting to the tune of 100 percent is being extended through Basmati Development Fund (BDF). The facility is now operational and testing of samples is being regularly carried out.

7.5.3 Infrastructure Projects Initiated by APEDA

7.5.3.1 Completed Projects

S. No.	Name of Project	Total Cost & APEDA's Share (Rs in Lakhs)
(a)	Pack Houses for Horticulture Produce	
1-4	Common Pack House for Mangoes covering	502.00
	Sindhudurg, Ratnagiri and Jalana for Onion	(376.5)
	(Indapur) by MSAMB, Pune	
5.	Common Pack House for fruit & vegetable by	200.00
	WBSFPHDCL at Malda (W.B)	(127.00)
6.	Mango Pack House at Saharanpur in U.P	146
		(146)

7.	Mango Pack House at Lucknow, in U.P	146
		(146)
		. ,
(b)	Washing, Sorting, Grading & Cold Storage for Po	buitry
1.	Pack house for table eggs in Distt. Ranga Reddy,	270.00
	Andhra Pradesh by A.P. Meat Development	(90.00)
	Corporation Ltd,	
(c)	Modernization/Upgradation of Laboratories	
1.	Up-graded laboratory for pesticide residue testing by	200
	Insecticide Residue Testing Laboratory (Govt. of	(200)
	Maharashtra), Pune	
2.	Established National Referral Laboratory (NRL) for	170
	testing of residues of drugs & pesticide for eggs through	(170)
	CFTRI, Mysore	
3.	Established NRL for exports of table grapes for testing of	656.60
	pesticides residue through NRC Pune	(656.60)
4.	Up-graded laboratory for AGMARK, Lab, Delhi, for	293
	testing of pesticide residue for issuance of certificate of	(293)
	conformity for exports of fresh fruits and vegetables.	
5.	Up-graded laboratory for AGMARK, Lab, Mumbai, for	293
	testing of pesticide residue for issuance of certificate of	(293)
	conformity for exports of fruits and vegetables.	
6.	Upgradation of Laboratory at BCKV, Mohanpur, West	362.00
	Bengal	(362.00)
(d)	Centre For Perishable Cargo At Airports	
1.	Centre for perishable cargo at Chennai International	173.00
	Airport by AAI	(173.00)
2.	Centre for Perishable cargo at Hyderabad Airport by	165.00
	AAI, APSTC	(165.00)
3.	Centre for perishable cargo at Bangalore Airport, MSIL	180.00
		(180.00)
4.	Centre for perishable cargo at Trivandurm Airport, KSIE	212.00
		(212.00)
5.	Centre for perishable cargo at IGI Delhi Airport	564.82
	AAI/CSC	(564.82)
6.	Centre for Perishable cargo at Chatrapati Shivaji	1491.55
	International Airport Mumbai, AAI/AI	(1491.55)
1	• •	, ,

7.5.3.2 Ongoing Infrastructure Projects

S. No.	Name of Project	Total Cost & APEDA's
		Share (Rs in Lakhs)
(a)	Pack House (Horticulture)	
1.	Common multi product project (Pack House)for fruits &	380.00
	vegs at Ludhiana, Punjab by MARKFED, Punjab	(280.00)
2.	Common multi product project for fruits & vegs at	199.00
	Fatiabad, Kolkatta (Pack House) by WBSFPHDCL	(146.66)
3.	Common Infrastructure Projects For handling	175.00
	Pomegranate (Maharashtra) by MSAMB, Pune	(94.94)
4.	Setting up of infrastructure Project, Orange, Wardha	262.45
	District, Maharasthra	(185.75)

5.	Setting up of infrastructure project (Banana), Hingoli	339.93
	and Raver districts of Maharasthra	(254.94)
6.	Setting up of infrastructure Project, Ginger, Assam with	550.13
	M/s AIDC	(315.06)
7.	Setting up of integrated post harvest handling cum	623.90
	auction center for Banana by GAIC at Navsari, Gujarat	(441.84)
8.	Setting up of integrated Pack House for fruits and	329.00
	vegetables at Chomu, Rajasthan	(247.00)
9.	Setting up of integrated Pack House for fruits and	362.00
	vegetables at Muhana, Rajasthan	(269.00)
(b)	Auction Centres and Infrastructure Park	
1.	Whole sale Market-cum Flower Auction Centre at	1038.00
	Bangalore by KAIC Bangalore	(357.00)
2.	Whole sale Market-cum Flower Auction Centre at	2223.00
	Goregaon by MAIDC. Mumbai	(500.00)
2	Whole Sale Market, Cum Elewer Auction Conter at	1200.00
5.	Noide by Mandi Darishad II D	(350.00)
4	Tonflore infrastructure park a joint venture of TIDCO	
4.	and experters at Leaver District. TN	2485.00
	and exporters at Hosur District, 1.N	(348.00)
5.	Whole Sale Market-Cum Flower Auction Center at	2500.00
	Kolkatta, W.B (Malikghat)	(0)
(c)	Egg Washing, Sorting, Grading And Cold Storage	For Poultry
1.	Setting up of facilities for egg washing, grading,	258.00
	packaging and storage in East Godawari in Andhra	(90.00)
	Pradesh	
2	Pack house for table ergs in Distt Namakkal Tamil	270.00
۷.	ruck house for table eggs in Distt. Namarkar, farm	270.00
۷.	Nadu by T.N. Development Agency	(90.00)
2.	Nadu by T.N. Development Agency	(90.00)
(d)	Nadu by T.N. Development Agency Modernization/Upgradation of Laboratories	(90.00)
(d)	Nadu by T.N. Development Agency Modernization/Upgradation of Laboratories Establishment of NRL for exports of table grapes for	906.36
(d)	Nadu by T.N. Development Agency Modernization/Upgradation of Laboratories Establishment of NRL for exports of table grapes for testing of pesticides residue through NRC, Pune	906.36 (90.00)
(d) 1.	Nadu by T.N. Development Agency Modernization/Upgradation of Laboratories Establishment of NRL for exports of table grapes for testing of pesticides residue through NRC, Pune Establishment of NRL for exports of honey	906.36 (90.00) 906.36 (906.36) 650.00
(d) 1. 2.	Nadu by T.N. Development Agency Modernization/Upgradation of Laboratories Establishment of NRL for exports of table grapes for testing of pesticides residue through NRC, Pune Establishment of NRL for exports of honey Drugs and pesticide residue testing of honey. Purchase	906.36 (906.36) (906.36) (906.36) (650.00)
(d) 1. 2.	Nadu by T.N. Development Agency Modernization/Upgradation of Laboratories Establishment of NRL for exports of table grapes for testing of pesticides residue through NRC, Pune Establishment of NRL for exports of honey Drugs and pesticide residue testing of honey. Purchase of laboratory equipments by Regional Research	906.36 (90.00) 906.36) 650.00 (650.00)
(d) 1. 2.	Nadu by T.N. Development Agency Modernization/Upgradation of Laboratories Establishment of NRL for exports of table grapes for testing of pesticides residue through NRC, Pune Establishment of NRL for exports of honey Drugs and pesticide residue testing of honey. Purchase of laboratory equipments by Regional Research Laboratory, Jammu	906.36 (906.36) 650.00 (650.00)
(d) 1. 2. 3.	Nadu by T.N. Development Agency Modernization/Upgradation of Laboratories Establishment of NRL for exports of table grapes for testing of pesticides residue through NRC, Pune Establishment of NRL for exports of honey Drugs and pesticide residue testing of honey. Purchase of laboratory equipments by Regional Research Laboratory, Jammu Strengthening of laboratory at IVRI, Izatnagar, UP for	906.36 (90.00) 906.36) 650 .00 (650.00) 52.00 lakh
(d) 1. 2. 3.	Nadu by T.N. Development Agency Modernization/Upgradation of Laboratories Establishment of NRL for exports of table grapes for testing of pesticides residue through NRC, Pune Establishment of NRL for exports of honey Drugs and pesticide residue testing of honey. Purchase of laboratory equipments by Regional Research Laboratory, Jammu Strengthening of laboratory at IVRI, Izatnagar, UP for monitoring of extraneous chemical substances and their	906.36 (906.36) (906.36) (906.36) (650.00) (650.00) 52.00 lakh (52.00 lakh)
(d) 1. 2. 3.	Nadu by T.N. Development Agency Modernization/Upgradation of Laboratories Establishment of NRL for exports of table grapes for testing of pesticides residue through NRC, Pune Establishment of NRL for exports of honey Drugs and pesticide residue testing of honey. Purchase of laboratory equipments by Regional Research Laboratory, Jammu Strengthening of laboratory at IVRI, Izatnagar, UP for monitoring of extraneous chemical substances and their residues in animal products.	906.36 (90.00) 906.36) 650 .00 (650.00) 52.00 lakh (52.00 lakh)
(d) 1. 2. 3. 4.	Nadu by T.N. Development Agency Modernization/Upgradation of Laboratories Establishment of NRL for exports of table grapes for testing of pesticides residue through NRC, Pune Establishment of NRL for exports of honey Drugs and pesticide residue testing of honey. Purchase of laboratory equipments by Regional Research Laboratory, Jammu Strengthening of laboratory at IVRI, Izatnagar, UP for monitoring of extraneous chemical substances and their residues in animal products. Upgradation of lab R-FRAC, for setting up of testing	906.36 (90.00) 906.36) 650.00 (650.00) 52.00 lakh (52.00 lakh) 504.50
(d) 1. 2. 3. 4.	Nadu by T.N. Development Agency Modernization/Upgradation of Laboratories Establishment of NRL for exports of table grapes for testing of pesticides residue through NRC, Pune Establishment of NRL for exports of honey Drugs and pesticide residue testing of honey. Purchase of laboratory equipments by Regional Research Laboratory, Jammu Strengthening of laboratory at IVRI, Izatnagar, UP for monitoring of extraneous chemical substances and their residues in animal products. Upgradation of lab R-FRAC, for setting up of testing laboratory for export at Lucknow, UP	906.36 (90.00) 906.36) 650 .00 (650.00) 52.00 lakh (52.00 lakh) 504.50 (504.50)
(d) 1. 2. 3. 4. (e)	Nadu by T.N. Development Agency Modernization/Upgradation of Laboratories Establishment of NRL for exports of table grapes for testing of pesticides residue through NRC, Pune Establishment of NRL for exports of honey Drugs and pesticide residue testing of honey. Purchase of laboratory equipments by Regional Research Laboratory, Jammu Strengthening of laboratory at IVRI, Izatnagar, UP for monitoring of extraneous chemical substances and their residues in animal products. Upgradation of lab R-FRAC, for setting up of testing laboratory for export at Lucknow, UP Asceptic Packaging Plant	906.36 (90.00) 650.00 (650.00) 52.00 lakh (52.00 lakh) 504.50 (504.50)
(d) 1. 2. 3. 4. (e) 1.	Nadu by T.N. Development Agency Modernization/Upgradation of Laboratories Establishment of NRL for exports of table grapes for testing of pesticides residue through NRC, Pune Establishment of NRL for exports of honey Drugs and pesticide residue testing of honey. Purchase of laboratory equipments by Regional Research Laboratory, Jammu Strengthening of laboratory at IVRI, Izatnagar, UP for monitoring of extraneous chemical substances and their residues in animal products. Upgradation of lab R-FRAC, for setting up of testing laboratory for export at Lucknow, UP Asceptic Packaging Plant Setting up of Common Infrastructure facility for	906.36 (90.00) 906.36) 650 .00 (650.00) 52.00 lakh (52.00 lakh) 504.50 (504.50) 370.00
(d) 1. 2. 3. 4. (e) 1.	Nadu by T.N. Development Agency Modernization/Upgradation of Laboratories Establishment of NRL for exports of table grapes for testing of pesticides residue through NRC, Pune Establishment of NRL for exports of honey Drugs and pesticide residue testing of honey. Purchase of laboratory equipments by Regional Research Laboratory, Jammu Strengthening of laboratory at IVRI, Izatnagar, UP for monitoring of extraneous chemical substances and their residues in animal products. Upgradation of lab R-FRAC, for setting up of testing laboratory for export at Lucknow, UP Asceptic Packaging Plant Setting up of Common Infrastructure facility for pineapple and allied fruit products by Nadukkara Agro	906.36 (90.00) 906.36) 650 .00 (650.00) 52.00 lakh (52.00 lakh) 504.50 (504.50) 370.00 (370.00)
(d) 1. 2. 3. 4. (e) 1.	Nadu by T.N. Development Agency Modernization/Upgradation of Laboratories Establishment of NRL for exports of table grapes for testing of pesticides residue through NRC, Pune Establishment of NRL for exports of honey Drugs and pesticide residue testing of honey. Purchase of laboratory equipments by Regional Research Laboratory, Jammu Strengthening of laboratory at IVRI, Izatnagar, UP for monitoring of extraneous chemical substances and their residues in animal products. Upgradation of lab R-FRAC, for setting up of testing laboratory for export at Lucknow, UP Asceptic Packaging Plant Setting up of Common Infrastructure facility for pineapple and allied fruit products by Nadukkara Agro Processing Company Ltd., (NAPC), Kerala	906.36 (90.00) 906.36 (906.36) 650.00 (650.00) 52.00 lakh (52.00 lakh) 504.50 (504.50) 370.00 (370.00)
(d) 1. 2. 3. 4. (e) 1. 2.	Nadu by T.N. Development Agency Modernization/Upgradation of Laboratories Establishment of NRL for exports of table grapes for testing of pesticides residue through NRC, Pune Establishment of NRL for exports of honey Drugs and pesticide residue testing of honey. Purchase of laboratory equipments by Regional Research Laboratory, Jammu Strengthening of laboratory at IVRI, Izatnagar, UP for monitoring of extraneous chemical substances and their residues in animal products. Upgradation of lab R-FRAC, for setting up of testing laboratory for export at Lucknow, UP Asceptic Packaging Plant Setting up of Common Infrastructure facility for pineapple and allied fruit products by Nadukkara Agro Processing Company Ltd., (NAPC), Kerala Setting up of Common Aseptic Packaging facility for	906.36 (90.00) 906.36) 650.00 (650.00) (650.00) 52.00 lakh (52.00 lakh) 504.50 (504.50) 370.00 (370.00) 586.45
(d) 1. 2. 3. 4. (e) 1. 2.	Nadu by T.N. Development Agency Modernization/Upgradation of Laboratories Establishment of NRL for exports of table grapes for testing of pesticides residue through NRC, Pune Establishment of NRL for exports of honey Drugs and pesticide residue testing of honey. Purchase of laboratory equipments by Regional Research Laboratory, Jammu Strengthening of laboratory at IVRI, Izatnagar, UP for monitoring of extraneous chemical substances and their residues in animal products. Upgradation of lab R-FRAC, for setting up of testing laboratory for export at Lucknow, UP Asceptic Packaging Plant Setting up of Common Infrastructure facility for pineapple and allied fruit products by Nadukkara Agro Processing Company Ltd., (NAPC), Kerala Setting up of Common Aseptic Packaging facility for packaging of fruit pulp by Andhra Pradesh State Trading	906.36 (90.00) 906.36) 650.00 (650.00) 52.00 lakh (52.00 lakh) 504.50 (504.50) 370.00 (370.00) 586.45 (439.83)
 (d) 1. 2. 3. 4. (e) 1. 2. 	Nadu by T.N. Development Agency Modernization/Upgradation of Laboratories Establishment of NRL for exports of table grapes for testing of pesticides residue through NRC, Pune Establishment of NRL for exports of honey Drugs and pesticide residue testing of honey. Purchase of laboratory equipments by Regional Research Laboratory, Jammu Strengthening of laboratory at IVRI, Izatnagar, UP for monitoring of extraneous chemical substances and their residues in animal products. Upgradation of lab R-FRAC, for setting up of testing laboratory for export at Lucknow, UP Asceptic Packaging Plant Setting up of Common Infrastructure facility for pineapple and allied fruit products by Nadukkara Agro Processing Company Ltd., (NAPC), Kerala Setting up of Common Aseptic Packaging facility for packaging of fruit pulp by Andhra Pradesh State Trading Corporation Ltd. (APSTC), A.P	906.36 (90.00) 906.36) 650.00 (650.00) 52.00 lakh (52.00 lakh) 504.50 (504.50) 370.00 (370.00) 586.45 (439.83)
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<pre>(d) 1. 2. 3. 4. (e) 1. 2. (f) 1.</pre>	Nadu by T.N. Development Agency Modernization/Upgradation of Laboratories Establishment of NRL for exports of table grapes for testing of pesticides residue through NRC, Pune Establishment of NRL for exports of honey Drugs and pesticide residue testing of honey. Purchase of laboratory equipments by Regional Research Laboratory, Jammu Strengthening of laboratory at IVRI, Izatnagar, UP for monitoring of extraneous chemical substances and their residues in animal products. Upgradation of lab R-FRAC, for setting up of testing laboratory for export at Lucknow, UP Asceptic Packaging Plant Setting up of Common Infrastructure facility for pineapple and allied fruit products by Nadukkara Agro Processing Company Ltd., (NAPC), Kerala Setting up of Common Aseptic Packaging facility for packaging of fruit pulp by Andhra Pradesh State Trading Corporation Ltd. (APSTC), A.P Centre For Perishable Cargo at Airports Center for perishable cargo at Amritsar International Airport by PAGREXCO	906.36 (90.00) 906.36) 650.00 (650.00) 52.00 lakh (52.00 lakh) 504.50 (504.50) 370.00 (370.00) 586.45 (439.83) 1825.00 (00.00)
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3.	Centre for perishable cargo at Kolkatta, AAI	675.00
		(675.00)
4.	Centre for perishable cargo at Ahmedabad Airport	250.00
	through, GAIC	(250.00)
5.	Centre for perishable cargo at Cochin by CIAL	2395.00
		(1320.00)
6.	Centre for Perishable Cargo at Bagdogra by Siliguri and	2.99.00
	Jalpaiguri Development Authority	(2.99.00)
7.	Centre for Perishable Cargo at Goa	236.88
	_	(236.88)
8.	Centre for Perishable Cargo at Nasik	799.69
		(212.50)
9.	Centre for Perishable Cargo at Haldia Seaport through	551.17
	M/s Deptt. of FPI & H	(551.17)
10.	Installation of Walk in Type Container at Aizwal,	10.00
	Mizoram	(10.00)
11.	Center for Perishable Cargo at Guwahati Airport in	400.00
	Assam	(400.00)
12.	Walk in type cold room at Dimapur, Nagaland	10.00
		(10.00)

7.5.4 Infrastructure for Tobacco Products

The Tobacco Board has conceived several projects for supporting exports of tobacco products by way of creating infrastructure.

- Designing Solar barns with the help of Solar Energy Center of Government of India - Once the designing of the solar barn is completed, the Board proposes to encourage farmers to go for construction of solar barns/modifying the existing barns by extending financial assistance. --proposed outlay Rs 40.00 crores.
- Briquette making industries --- The Board proposes to encourage setting up of briquette making units from agri-waste including tobacco stalks and encourage farmers switchover to use of these briquettes and thus reduce their dependence on wood fuel and non-renewable energy resources like coal for curing of tobacco every year. The Board proposes to extend subsidy for setting up of these units and also supply the same to farmers at subsidized cost. ----Proposed outlay Rs 10.00 crores.

- Green houses for raising nurseries ----- The farmers are witnessing adverse weather conditions at the time of raising tobacco nurseries and go for early plantations in SLS and NLS areas of Andhra Pradesh, where quality tobacco is produced for exports. Therefore the Board proposes to establish few green houses for raising tobacco nurseries under control conditions and supply the same to the farmers at subsidized cost. ----Proposed outlay Rs 10.00 crores.
- Bio/Organic fertilizers ------ The Board proposes to encourage growers use more of organic/bio-fertilizers in the tobacco cultivation and make Indian tobacco more attractive to the customers. Therefore, the Board proposes to encourage growers to set up vermi-compost units and also use bio-fertilizers. The SC/ST growers also need help in the area of setting up of vermi-compost units. Additionally, the Board also proposes to set up/encourage setting up units for developing Tricho-derma Verdi a bacteria for supplying the same to the farmers for usage along with the organic/bio-fertilizers to help avoid/reduce the fungal diseases in the tobacco crops. ----Proposed outlay Rs 6.00 crores.
- Bulking sheds/Model Storage facilities ------ In Karnataka and in SLS area of Andhra Pradesh, the farmers are small and marginal, who can not afford to invest to build the bulking sheds/storage facilities required for tobacco. The same is the case with the SC/ST growers. The women growers also need to be helped in these matters. Tobacco is hygroscopic in nature and exposure to sun/higher humidity results in deterioration in quality. Therefore, the quality of the tobacco produced by these farmers is getting affected by the kind of handling at the farmers' level due to the lack of required infrastructural facilities. The customers are objecting for admixture of NTRMs at the farmers' level, which is happening due to inadequate infrastructural facilities for handling the leaf at post harvest stage. The Budget outlay for these schemes is Rs 30 crores.

7.6 SUGGESTIONS FOR XI FIVE YEAR PLAN

7.6.1 Database on Pests and Diseases

There is a need to put in place an Institutional Mechanism for creation of data base on the situation of pest and diseases in major production areas of agro produce for export and identification of pest/disease free areas.

Japan, Australia and China have in the past banned imports of mangoes and grapes from India on account of presence of certain fruit flies. Australia desires to have complete details about pest management practices in India and a ban can only be lifted after signing of a MoU on mutual recognition of pest management practices. Japan on the other hand desires Vapour Heat Treatment (VHT) of fruits for disinfestations before these can be allowed to enter into their country. With the personal intervention of Hon'ble Union Minister for Commerce & Industry, Shri Kamal Nath, we have succeeded in accessing the Japanese market for Indian mangoes in June 2006, after pursuance of the matter for about 17 years.

APEDA has been making constant efforts by working with the trade and industry for meeting such SPS requirements of importing countries. We have been closely working with corresponding organizations in the importing countries in association with Ministry of Agriculture (MoA), and ICAR institutions. However, it is fire fighting that we do at present as we respond on the basis of demand from the importing countries. The institutional framework needs to be developed for creation of a database on the incidence of various diseases and pests in the major production areas of agro produce for exports through regular survey and surveillance for collection of data and monitoring of the situation. So that we can provide the data and gain market entry without waiting for the results of fresh surveys and studies.

7.6.2 Strengthening of Plant Quarantine System for Imports

India is one of the major markets being targeted by exporters of agro products world over due to its large consumer base. In addition a large number of products including planting material and raw produce for re-export after value addition are imported by exporters in India. Strengthening of import quarantine system, therefore, is very critical to mitigate the risk of the entrance of undesirable pests and diseases, which do not occur in India so far.

Another issue related to plant quarantine is the large scale trials of GM crops. The system of testing of GM crops in India is not strong enough. This leads us to a risk of Indian exports facing a danger in European Union where the import of GM products is not permitted. A similar position may be taken by many other importing countries. If any of the export crops such as Basmati rice get mixed up in the process of field trials of GM products, it may result into a very big threat for sustenance of our exports.

7.6.3 Improvements in Market Channels – Reforms under APMR Act

Both the Central Government and the Governments in the respective States (to increase control over storage, marketing and distribution of agricultural commodities, including fruits and vegetables, during periods of shortages within the country) enacted the laws such as Essential Commodities Act (1955), Agricultural Produce Marketing Regulation Act 1972 and the Prevention of Black Marketing and Maintenance of Supplies of Essential Commodities Act (1980). These policies prevented free mobility of Agriculture Produce and thus segmented the Indian domestic market into many smaller markets. The supply chains developed under these legislations have been primarily local or regional in nature. Till recently almost nil infrastructure existed for handling and storage of perishable horticultural products. The restrictions of private domestic investment in APMC controlled markets prevented emergence of large, organized, efficient supply chain for fruits and vegetables. The scenario has started changing in last few years. Several states have already amended the APMR Act to allow private investment in markets and direct buying of produce from the farmers by traders and processors. Improvement in domestic market channels would increase efficiency in the process of market transactions and maintain quality. Joint efforts by growers, wholesalers, exporters and processors would help improving efficiency in market channels and reduce the end user cost substantially. This will also facilitate exporters.

7.6.4 Direct to Retailers – Creation of Hubs with AEZs

Most of the Indian exports presently pass through traditional food consolidators resulting in low price realization for our farmers and exporters. The Government of India in its endeavour to develop the exports of agro products from the country initiated the concept of AEZs in the year 2001-02. The concept of AEZ envisages strengthening the entire value chain in a comprehensive manner for an identified crop/produce coming from a geographically contiguous area. Another objective of AEZ scheme is to provide remunerative returns to farmers on a sustained basis by improved access to exports. The Steering Committee has so far accorded sanction for 60 AEZs spread over 20 states in the country. Investments of the order of Rs 3666 crores are envisaged out of these AEZs in the same period.

Driven by competitive pressure caused by a maturing food industry in Europe and USA, the retail industry has been witnessing the phenomenon of consolidation for quite some time now. The leading 30 retailers in Europe have a combined sale of USD 1050 billion which is 26 percent of the total European retail sales and 44 percent of the total European grocery retail sales. In the US, the top 10 retailers contribute 60 percent of the food sales. These big retailers could be the key to getting sizable market share for our products. The retailers have evinced interest in sourcing goods from big Indian Corporates capable of offering large quantities of quality agri-produce of a wide range. APEDA has been in dialogue with some of the well-known Indian Corporates in the agribusiness in this regard. Such leveraging is capable of providing the necessary demand-pull for growth of the agriculture sector through a quantum jump in exports.

The aggregation mechanism can take the form of contract farming, corporate aggregator, cooperative aggregator or public sector agency taking up the role. The pros and cons of each are shown in Table 7.9. It may be that for different regions of the country, different models may be suitable and workable.

Table 7.9

Alternative Forms of Market Aggregators

Market		
Aggregation	Description	Pros & Cons
Mechanism		
Contract Farming	 Food processors (e.g. Kissan), exporters (e.g. Global Green) or retailers/wholesalers (e.g. Foodworld Metro) could enter into contract farming arrangements directly with farmers. 	 Consumption through processors/organized retailers is limited; Will improve only a small part of the chain
Corporate Aggregators	 Farm-input companies could act as aggregators, with state government support and tie-ups with other companies (e.g. processors, retailers) to ensure demand Other companies (e.g. HLL, ITC) could also play this role 	 Input companies understand farmers well Potential to build large aggregator business Successful pilots have been conducted (e.g. Rallis, Kissan Kendra)
Cooperative Farming	 Farmer cooperatives (e.g. Mahagrapes, Hopcoms) could play the aggregator role, and also establish downstream market linkages (e.g. exports, tie-ups with retailers) 	Governance and political interference are major inhibitors
Centralized Auction	 State government to set-up auction and run for initial period Producer/seller associations to take over in long term 	 Governance and political interference are major inhibitors, if done directly by government Possible to rope in partners (e.g. NDDB), but could take time to scale up

7.6.5 Aggressive Marketing Campaigns for the Thrust Products

Following products are considered as Thrust Areas for Promotion Campaigns.

Basmati/Non Basmati Rice Milk Products Poultry Products Fresh Fruits - Mangoes, Grapes, Pomegranates, Bananas Floriculture Medicinal and Aromatic Plants Processed Fruits and Vegetables Ethnic Food Preparations

In order to harness the available potential, extensive market promotion by way of product promotion, participation in international trade fairs, buyer-seller meet and delegation needs to be undertaken for which budgetary guidelines need to be liberal. There is also a need for delegation of powers to APEDA for undertaking such market promotion activities for specific product in specific countries.

7.6.6 Setting up of Marketing Centers Abroad

Based on the potential of specific products such as fruits and vegetables, horticulture products including floriculture and cereal products, there is a need for creation of cold storages/warehouse in gateways to major markets like Dubai, Singapore, London, and Moscow with 50 percent grant from APEDA. These centres should be provided autonomy for leasing and hiring storage and logistic facilities including personnel and consultants.

7.6.7 Posting of Agro Export Ambassadors in Key Importing Countries

The Government of India should consider to post experts in some of the target countries who would regularly study the market dynamics of imports into their country of posting and advise the Government and the industry in India to equip in a better way for improving the market share of Indian agro products there.

7.6.8 Direct Finance by NABARD on Concessional Terms

Presently, the bank credit for agriculture and agribusinesses under refinance arrangement of NABARD is available at an effective rate of interest of 7 percent. It is proposed that NABARD should directly finance the activities/projects/operations in the AEZs at concessional rate of interest (2-3%) covering:

- Crop loans for production under contract farming including provision of extension and pre harvest management
- Project funding for capital investment relating to post harvest management, processing, storage and transportation
- Export credit/packing credit.

7.6.9 Rebate on Premium for Crop Insurance

There is no provision for rebate on premium for crop insurance. It is proposed that under contract farming in AEZs, Government may consider to allow a 50 percent rebate in the premium for crop insurance.

7.6.10 Export credit, Credit Guarantees and Insurance Programmes

Governments in the countries that have significant interest for export of agro and food products; provide reinsurance to the insurers and credit guarantors whereby

the exporters are able to offer products in the international markets backed by aggressive credit terms. The situation regarding provision of export credit, credit guarantee and insurance programmes/instruments in India needs to be analyzed. The Government of India should provide similar support to our exporters.

7.6.11 Strengthening of National Enquiry Points for SPS and TBT

The transparency provisions of the SPS Agreement under the WTO are designed to ensure that measures taken to protect human, animal and plant health are made known to the interested public and to trading partners. The agreement requires governments to promptly publish all sanitary and phytosanitary regulations, and upon request from another government, to provide an explanation of the reasons for any particular food safety or animal or plant health requirement.

All WTO Member governments must maintain an Enquiry Point, an office designated to receive and respond to any requests for information regarding that country's sanitary and phytosanitary measures. Such requests may be for copies of new or existing regulations, information on relevant agreements between two countries, or information about risk assessment decisions. The addresses of the Enquiry Points can be consulted electronically at the WTO's home page (www.wto.org, "Documents on Line", search document symbol "SPS/ENQ/").

Ministry of Commerce and Industry, Government of India has appointed three Enquiry Points relating to SPS measures in the country. These would handle all queries and comments on SPS notification/regulations issued by other member countries of the World Trade Organization. These three enquiry points are:

- Ministry of Health for food safety and Codex related issues website: www.mohfw.nic.in
- Department of Agriculture and Cooperation for plant protection; website: www.plantquarantineindia.org

- Department of Animal Husbandry and Dairying for animal health products website: www.dahd.nic.in

It is increasingly felt that to develop clearer understanding on the issues involved with the interplay of health standards and trade, generating awareness for effective implementation of the WTO SPS Agreement among the stakeholders is very essential. It is only through a thorough understanding of the norms, rules and procedures involved in the international standard setting, that various stakeholders can identify and pursue areas to increase their effective voice in the globalization process

In addition, there is a National Enquiry Point under Agreement on Technical Barriers to Trade (TBT). The Bureau of Indian Standards (BIS), New Delhi is the Government of India's organization, on behalf of the Ministry of Commerce, to provide information on TBTs to various stakeholders in India. In turn, BIS has retained the Center for Research, Planning and Action (CERPA) to provide these services related to TBTs. TBTs are a new form of regulations introduced by various countries for denying market access to others for various products and services. It is, therefore extremely important for us as a nation to respond effectively to the various TBT notifications within the normal stipulated period of 60 days so that effective measures can be taken by various stakeholders and particularly Ministry of Commerce to avoid the adverse effects of the TBT on the export of products and services by the Indian trade and industry.

7.6.12 Export Incentives/Assistance/Policy Measures for Promoting Tobacco Exports

- Enhancing the entitlement under DEPB scheme on export of tobacco to 12 percent from the present level of 2 percent.
- Alternatively introducing alternative scheme (for Duty Entitlement Pass Book (DEPB) scheme) to include compensation for all taxes, indirect or otherwise, at the state or the center level on inputs, along the full value chain (farm to export) to make exports truly competitive in relation to other exporting countries.

- Allowing the benefit of draw back of Rs 850/- per M.T. for Furnace Oil supplied by domestic oil companies to EOU/EPZ/Special Economic Zones under deemed export scheme in chapter 10 of EXIM policy to tobacco exporters.
- Concessions on Service Tax: credit may be made available if services (including transportation) are used for exports even though the endproduct is an excise-exempted commodity and such credits must be made freely transferable to be set-off against other excisable commodities. If there is no other excisable commodity such un-availed credits must be refunded in cash.
- Services rendered abroad may be exempt from service tax in India since in the case of tobacco exports service provider is not a resident of India and they are already subject to taxes prevailing in the respective countries.
- Export Credit to be made available to the tobacco industry at 4 percent, which is in line with the international interest rates. The credit facility may be extended not only for purchase of tobacco but also for development of infrastructure and R&D activities.
- Extension of Vishesh Krishi Upaj Yojana Scheme to Tobacco keeping in view the importance of tobacco in the Indian economy and its employment potential (35 million people are dependent on this crop) and also to make Indian Tobaccos competitive and will help India to compete against countries where tobacco crop is subsidized.
- Improving infrastructure for handling exports so as to ensure visit of main shipping lines to Chennai, Visakhapatnam, Mumbai etc. and avoiding transshipments.
- Development of Kakinada and Visakhapatnam ports.
- Allowing transport subsidy @ Rs 2/kg for the shipments of tobacco made to CIS countries in case of additional exports generated.
- Permitting FDI by the International Leaf Merchants to invest in developing infrastructure for processing in India, which would promote exports.
- Exemption of unmanufactured tobacco from the purview of VAT at all stages.
- Allowing FDI in SEZs/100 percent EOUs for export of cigarettes.

- Improving brand image Sponsoring tobacco trade delegations to major importing countries at regular intervals and publicizing Indian tobacco and tobacco products through international tobacco exhibition and advertisements in the international tobacco magazines.
- Entering in to Free trade agreements with ASEAN countries, China, Japan and with countries in African region facilitating export of Indian tobacco to these markets on preferential basis.
- Uniform tax policy for all tobacco products.
- Maintaining Status quo in tariff rate structure on tobacco products to allow expansion and consolidation of domestic industry.

7.7 MARKET INTELLIGENCE FOR EXPORT PROMOTION

Knowledge plays a crucial role in the present day competitive world trade environment. Knowledge is power, and market intelligence enables the exporters to take advantage of the vast opportunities available in the international trade as also take necessary precautions to meet with the challenges posed. The need for market intelligence is even more crucial in the agriculture sector where India has a vast untapped potential. Non-availability of reliable international trade information inhibits the performance of the exporters and other stakeholders in reaching their agro products in the global market. The availability of authentic trade data including market prices and quality standards and specifications required by various markets would enable our farmers, processors, exporters and policy makers to take informed decisions. Trade data is an important aid in improving the export performance.

7.7.1 Present Status

(i) Studies Under Market Access Initiatives Scheme of the Ministry of Commerce and Industry

Studies in Progress

International Market Survey
- Frozen Fruits & Vegetables
- Medicinal and Aromatic Plants
- Direct to International Retail Export Promotion
- Reports expected by March 2007

Studies Approved in Principle

- Study and Market Promotion of Mango in Japan, China, Australia, Malaysia, USA, Singapore
- Study and Market promotion of Grapes in China, Singapore, Thailand, Malaysia

Studies Under Consideration of the Government

- Study and Market Promotion of Alcoholic Beverages in Russia and CIS countries
- Study and Market Promotion of Floriculture Products in Russia

(ii) Annual Publication of Export Statistics by APEDA

Through the publication of "Export Statistics for Agro and Food Products", APEDA has been providing useful information to the exporters of agri products. The book is user-friendly and besides providing an overview of India's agro exports with major product groups and major destinations provides details of exports of major product groups country-wise. Country profile are also given showing major products exported to a particular country. All the products are listed alphabetically with their corresponding HS Code Numbers.

(iii) Correct ITC(HS) Codes

APEDA had organized sensitization programs for improving the data quality in Kolkata, Bangalore, Delhi and Mumbai during November and December 2005. The issues/feedback from these programs, as given below, were forwarded to the DGFT:

- (a) Non availability of individual HS codes for some products. APEDA has commissioned a study to identify the agri commodities of export importance that do not have an HS Code and to prepare the case for creating new HS codes for the same.
- (b) The electronic export documentation with a software that would not allow the filing of wrong HS Code that is at variance with the description of the item, may be introduced.
- (c) EDI networking to be expanded to cover all ports for availability of real time data.

On the basis of the feedback received during these sensitization programs, it is observed that the situation would improve significantly if Customs would insist on verification of the HS Code before accepting the shipping bill. It would enable elimination of the mismatch between the HS Code and the product description.

(iv) Listing of HS Codes and Database of Products

Because of large disparity in the HS Codes of different products, APEDA has initiated a study for preparing a complete listing of HS Codes at the 8 digit level. The work involves database development of the products along with the Codes at four and eight digit levels for all products between Chapters 1 to 24. This will help in a better monitoring of export performance and improve the quality of market intelligence.

(v) Indian AgriTrade Junction

APEDA, with the funding support of GoI-UNCTAD-DFID has set up a portal named "Indian Agri Trade Junction" as a part of APEDA website www.apeda.com for providing comprehensive international market intelligence.

The portal aims to provide at a single place the following information on APEDA products:

- Extensive export-import information of sourcing countries
- Market share of their trading partners
- Quality standards
- Other important trade related issues

Further, the portal collects inquiries from different authentic sources and makes it available for the users. The portal being interactive in nature helps both the importer and exporter to post their inquiries online. Portal is expected to benefit all the stakeholders involved in the international trade of agri sector.

(vi) Market Intelligence and Market Related Databases Set Up by Public Institutions

- Market Intelligence Unit Reporting system Department of Agriculture and Cooperation, Ministry of Agriculture, Government of India, New Delhi.
- Market Network Marknet Agricultural Market intelligence Network in Maharashtra State.
- Market intelligence cell for farmers The Centre for Agricultural and Rural Development Studies (CARDS) in the Tamilnadu Agricultural University (TNAU) has proposed the establishment of

a Domestic and Export Market Intelligence Cell (DEMIC) for the farming community.

- Punjab Mandi Board Market Intelligence System.
- The Punjab Agriculture University will host a website exclusively for rendering market intelligence.

7.7.2 Recent Private Initiatives

(i) e-Choupals of ITC

The main features of the e-Choupal initiative of the trading arm of ITC are:

- Use of information and communication technology.
- Provision of extension services.
- Provision of market information to farmers.
- Direct buying from farmers.
- Efficient assured supply for processing.

ITC has committed Rs. 1000 crores to create and maintain its own IT network in rural India and to identify and train a local farmer (sanchalak) to manage each E-Choupal. They have already invested more than Rs 80 crores for building up the 2500 odd choupals in existence across the country. The choupals have been linked to the internet through dial up phones in the past but the company is going in for VSAT connections given the poor internet access over phone lines. More than 1150 of the 1600 chaupals in MP are connected through VSATs. The ITC investment in every chaupal is around Rs 1,50,000 and serves an average of 600 farmers in 10 surrounding villages within about a five kilometer radius. Each E-chaupal is being connected to hubs which are being planned at a 30 kilometer radius in the districts targeted by ITC. The hubs are in turn linked with State office for administrative work and with the nearest ITC

processing unit for crushing soybeans. ITC chaupals in states like Madhya Pradesh, Uttar Pradesh and Maharashtra are being used to procure soybeans in kharif and wheat during the Rabi season.

(ii) Portals like Agriwatch.com and i-Kisan

Agriwatch.com is an agribusiness portal. Paid Membership of this portal enables access to large amount of agribusiness related information covering more than 15 subsectors within the Agricultural and Food Industry, such as Rice, Wheat, Maize, Oil Complex, Pulses, Spices, Sugar, Cotton, Fruits & Vegetables, Herbs & Medicinal Plants, Dairy, Poultry etc.

ikisan is being developed as a comprehensive Agri Portal to address the information, knowledge and business requirements of various stakeholders viz., farmers, trade channel partners and agri input/output companies. Leveraging information technology and extensive field presence of the promoters, this portal is being positioned as an Information/Knowledge exchange and an e-marketplace.

7.7.3 Creation of Trade Related Databases

Market intelligence activities and competence needs to be strengthened to meet the increasing global competition. Experts may be positioned in our missions located in markets of interest.

7.7.4 Market Intelligence for Tobacco Products

US Department of Agriculture (USDA) was providing statistical information and analysis of the world unmanufactured tobacco situation and products on regular basis through its Foreign Agriculture Service (FAS) which was reckoned as authentic and vast data base for world market for tobacco. However, effective January 1, 2006 FAS has stopped publishing of tobacco related statistics. It has also stopped publication of the Attaché reports (gain reports), which provide detailed individual country information on tobacco and tobacco products. As such, there was a big gap in information available on world markets for tobacco as of now.

Presently, the following are the sources for market related data on tobacco and tobacco products:

- Foreign magazines on tobacco namely, World Tobacco, Tobacco Journal International, Tobacco Reporter, Tobacco International and Tobacco Asia
- Universal Corporation's website and its crop and market reports and its yearly Demand Supply reports
- Tobacco News collected on line from google search engine.
- FAO Trade Statistics

7.7.5 Tobacco Board Proposal to Subscribe to New Databases

Regarding recommendation for creation of trade related data bases to cover the gap in the information available, Tobacco Board have to subscribe to Tobacco Manufacturing Association, USA (TMA) to have access to their vast tobacco data base at a cost of around Rs 5 lakhs per annum. Subscription to FAO Trade Statistics for downloading vast information may also supplement this data. In addition, some marketing organizations like "Euro monitor" and "Research and Markets" are publishing reports on tobacco situation in individual markets and are giving country wise reports on yearly basis, which are available for sale to all. The plan outlay projected for XI Five Year Plan for creating trade related database towards subscription to TMA, FAO etc is about Rs 25 Lakhs.

7.8 FINANCIAL ASSISTANCE SCHEMES PROPOSED BY APEDA FOR XI FIVE YEAR PLAN

7.8.1 Schemes and Components

(i) Scheme for Development of Supply Chain Infrastructure

Component	New/	Eligibility	Scale of Assistance
	Existing/ Modified		
A. Common Infrastructure			
Component 1			
Establishment of common infrastructure facilities at ports /airports, integrated pack house, vapour heat treatment plants, electronic beam processing or ionizing irradiation facilities etc	Modified	APEDA, any other State Government or Public Sector agency like Airport Authority of India or Port Trusts etc., recognized exporters' associations.	 (1) 100% grant-in-aid for APEDA (2) 90 % of the cost of the project for APEDA recognized exporters' associations.
Component 2			
Assistance for developing logistics corridors by giving support through incentives for introduction of regular services; such as: Amritsar to U.K chartered flights Mumbai / Cochin / Kandla to Dubai fast reefer boats with container Roll-on-Roll –off facilities	New	Service providers such as shipping/air lines, freight carriers, freight agents and others who may enter into specific agreements with exporters of targeted commodities.	 (1) 50% of the viability gap (2) 50% of freight paid (3) 15% of FOB value whichever is less.
Component 3			
Specialized / Dedicated terminals at ports for handling agri produce like Grains with Silo Storage, Sortex machines etc.	New	APEDA, any other State Government or Public Sector agency like Airport Authority of India or Port Trust etc, recognized exporters' associations.	 (1) 100% for APEDA and Government Agencies. (2) 50% of the total cost to exporters' associations
Capital Subsidy for export			
Component 1Assistance for purchase of specialized transport units (refrigerated transport vehicle / containers) for cool chain management	Modified	APEDA's registered exporters.	25% of the total cost subject to a ceiling of Rs. 5 lakhs per unit.

Component	New/	Eligib	oility	Scale of Assistance
	Existing/ Modified			
Component 2				
Setting up of sheds for intermediate storage and grading, storage/ cleaning operation of the produce.	Existing	APEDA's exporters.	registered	25% of the cost of equipment subject to a ceiling of Rs.5 lakhs per beneficiary
Sotting up of mochanized	Evisting		rogistorod	25% of the cost subject
handling facilities including sorting, grading, washing, waxing, ripening, packaging and palletisation etc.	Existing	exporters.	registered	to a ceiling of Rs.10 lakhs per beneficiary
Component 4				
Setting up of pre-cooling facilities etc. with proper air handling system	Existing	APEDA's exporters.	registered	25% of the cost subject to a ceiling of Rs.10 lakhs per beneficiary
Component 5				
Providing facilities for pre shipment treatment such as fumigation, X-ray screening, hot water dip treatment, Water softening Plant	Existing	APEDA's exporters.	registered	25% of the cost subject to a ceiling of Rs.25 lakh per beneficiary
Component 6				
Setting up of integrated post harvest management facility (Pack House) comprising minimum of three of the following components	Modified	APEDA's exporters.	registered	25 % of cost of the project with a ceiling Rs 50.00 lakhs per beneficiary.
 Sorting and grading equipment Intermediate handling 				
binsMechanized handling facilities				
 Pre-cooling & high humidity cold storage Lab 				
 Facilities for pre- shipment treatment etc. 				
Component 7				
Assistance for setting up of environment control system, eg. pollution control, effluent treatment, waste treatment plant etc.	Modified	APEDA's exporters.	registered	25 % of total cost with a ceiling Rs 25.00 lakhs

Component	New/ Existing/ Modified	Eligibility	Scale of Assistance
Component 8			
Setting up of specialized storage facilities such as high humidity cold storage, deep freezers, controlled atmosphere (CA) or modified atmosphere (MA) storage etc.	Modified	APEDA's register exporters.	ed 25% of the total cost subject to a ceiling of Rs 50 lakhs per beneficiary
Component 9			
Setting up of electronic sorting and grading machine for cereals	New	APEDA's register exporters.	ed 25% of the total cost subject to a ceiling of Rs. 20 lakhs per beneficiary
Component 10			
Assistance to upgrade technology and or capacity in one or more facilities of the integrated post harvest centres and other facilities.	New	APEDA's register exporters a recognised exporte associations.	ed 25% of the cost of technology up-gradation subject to a ceiling of Rs. 25 lakhs per beneficiary.

(ii) Scheme for Market Intelligence and Market Development

	Compo	onent	New/	Eligibi	ility	Scale of Assistance
			Modified/			
			Existing			
Α	. Packaging D)evelopment				
С	omponent 1					
•	Activity	for	Modified	APEDA	recognized	100% for APEDA
	development	of packaging		exporters' ass	sociations.	internal scheme. 75%
	standards and	l design				subject to a ceiling of
-	Upgradat	ion of already				Rs.10.00 lakhs per
	developed	packaging				association per proposal
	standards					provided that the
						information is shared
						and made available for
						public at large.

Component	New/	Eligibility	Scale of Assistance
	Modified/		
	Existing		
Component 2			
Assistance to exporters for use	Modified	Registered exporters of	25% of the total cost of
of packaging material as per		fresh fruits &	packaging material used
standards and specifications		vegetables, flowers and	as per specification
developed or adopted by		eggs.	recognized by APEDA
APEDA			subject to a ceiling of
			Rs.10.00 lakhs.
B. Feasibility Studies,			
Surveys, Consultancy and			
Database Up-gradation			
Component 1			
Development and	Modified	APEDA, recognized	(1) 100% for APEDA
dissemination of market		exporters' associations.	internal scheme. (2)
information data base on		•	90% of total cost
products, infrastructure etc.			subject to a ceiling of
			Rs.20.00 lakhs per
			association provided
			that the information is
			shared and made
			available for public at
			large.
Component 2			
Assistance for conducting	Modified	Assistance to	50% of the total cost
feasibility studies etc.		registered exporters.	subject to a ceiling of
			Rs.10.00 lakhs per
			beneficiary.
Component 3			
Assistance for conducting	Modified	Government/ semi -	75% of the project cost
surveys, feasibility studies etc.		government	subject to a ceiling of
for the common benefit of a		organizations and	Rs.15 lakhs per
number of exporters who may		APEDA recognized	beneficiary.

Component	New/	Eligibility	Scale of Assistance
	Modified/		
	Existing		
be the members of the		exporters'	
associations / Boards / Apex		associations.	
Bodies etc / belonging to a			
group being assisted / serviced			
by Govt / Semi-Government			
Organization.			
C. Export Promotion and			
Market Development			
Component 1			
Supply of material, samples,	Existing	APEDA	100% to be
product literature,			implemented by APEDA
development of website,			
advertisement etc. for publicity			
and market promotion for fairs			
/ events organised / sponsored			
by APEDA.			
Component 2			
Publicity and promotion	Existing		100% to be
through preparation of product			implemented by APEDA
literature, Publicity material,			
advertisement, film etc by			
APEDA.			
Component 3			
Brand publicity (Product	Modified	Brand promotion for	25% of the total cost
specific Indian Brands)		those brands which are	subject to a ceiling of
through advertisement etc.		of Indian origin,	Rs.50.00 lakhs in a year.
		advertisement in	
		international print/	
		electronic media,	
		website development	
		etc.	
Component 3Brandpublicity(ProductspecificIndianBrands)through advertisement etc.	Modified	Brand promotion for those brands which are of Indian origin, advertisement in international print/ electronic media, website development etc.	25% of the total cost subject to a ceiling of Rs.50.00 lakhs in a year.

Component	New/	Eligibility	Scale of Assistance
	Modified/		
	Existing		
Component 4			
Export promotion by APEDA	Modified	APEDA registered	1) 100% for APEDA
for undertaking activities like		exporters and	2) 50% for registered
buyer-seller meet, product		recognised exporters'	exporters and
promotion, exchange of		associations.	associations subject to a
delegations, participation in			ceiling of Rs.5 lakhs per
exhibitions/fairs/events etc.			event.
Exporters should also be given			
assistance under the scheme			
even if APEDA is not			
participating in the particular			
event. The assistance be			
extended for participation in			
conferences as well.			
Component 5			
Generic publicity of Indian	New	APEDA recognised	100% for APEDA
agricultural and processed		exporters' associations.	
products			75% of the total cost
			subject to a ceiling of
			Rs.50.00 lakhs per
			programme for
			recognized exporters'
			associations.
Component 6			
Establishment of market	New	APEDA recognised	(1) 100% for APEDA
facilitation centres (MFC)		exporters' associations.	(2) 100% assistance for
			APEDA recognized
			exporters' associations

Component	New/ Modified/ Existing	Eligibility	Scale of Assistance
Component 7			
Market promotion of value	New	Assistance to exporters	20% of the FOB value of
added products for direct sale		for value added	export of value added
by the retailers/super markets		products in consumer	products.
		packs.	

(iii) Scheme for Quality Development and Capacity Building

Component	New/	Eligibility	Scale of assistance
	Existing/		
	Modified		
A. Promotion of Quality			
and Quality Control			
Component 1			
Assistance etc. for setting up	Modified	APEDA's recognised	50% of the cost subject
strengthening laboratories		exporters' associations.	to a ceiling of Rs 20
			lakhs per beneficiary
Component 2			
Assistance for installing	Modified	APEDA's registered	50% of the cost subject
quality management, quality		exporters.	to a ceiling of Rs. 5
assurance and quality			lakhs per beneficiary
control systems such as ISO			
series, HACCP, TQM,			
KOSHER, BRC, GAP and ERP			
based traceability etc.			
including consultancy,			
quality improvement and			
certification etc.			

Component	New/	Eligibility	Scale of assistance
	Existing/		
	Modified		
Component 3			
Activities related to	Existing	.APEDA's internal	100% for APEDA
standardization and quality		scheme	
control such as preparation			
of quality assurance			
manuals, guidelines,			
documents, standards,			
upgradation and recognition			
of labs for export testing,			
certifying exporters as			
premium quality exporters			
etc. pesticide management			
program, national and			
international standardization			
activities.			
Component 4			
Upgradation and recognition	Modified	Private lab, central	(1) 50% of the cost of
of labs for export testing		/state/ government	up-gradation for private
		/universities lab for	lab subject to a ceiling
		export testing.	of Rs 75 lakhs
			(2) 100% of the cost for
			central /state
			government /university
			labs.
Component 5			
Testing of water, soil,	Modified	APEDA's registered	50% of the total cost
residues of pesticide,		exporters and	subject to a ceiling of
veterinary drugs, hormones,		recognised exporters'	Rs. 5000/- per sample
toxins, heavy metal		associations	(pre-negotiated price
contaminants in agricultural			with APEDA) in case

Component	New/	Eligibility	Scale of assistance
	Existing/		
	Modified		
produce / products			where residue
"including all fruits and			monitoring activity is
vegetables , processed fruits			proposed by APEDA.
and vegetables , other			
processed foods, floriculture,			
animal products, cereals etc.			
Component 6			
Assistance for replacement	New	APEDA's registered	25% of the total cost of
of planting material for		exporters.	imported planting
floricultural industry			material with a ceiling of
			Rs.5 lakhs per
			beneficiary (once in two
			years)
B. Capacity Building and			
Organization			
Management			
Component 1			
Assistance for upgradation of	Modified	APEDA registered	50% of the cost of
technical and managerial		exporters and	approved training
skills through on spot		recognised exporters'	programme subject to a
training in India /abroad		associations	ceiling of Rs 1.5 lakh per
			representative (not more
		Assistance shall be	than three from single
		given only for training	organization).
		undergone in the	
		institute of	100% of cost of the
		international repute	programme organized
		or on the panel of	by APEDA.
		APEDA. The payment	
		shall be made directly	
		to the institute.	

Component	New/	Eligibility	Scale of assistance
	Existing/		
	Modified		
Component 2			
Assistance for organizing	Modified	APEDA recognised	50% of the cost subject
seminars/group activities		exporters'	to a ceiling of Rs. 5 lakh
including study tour within		associations.	per activity / event
the country and for bringing			
out information literature.			
Component 3			
Seminars organized by	Existing	APEDA	100% assistance for the
APEDA			events organized by
			APEDA
Component 4			
Assistance programme for	Modified	APEDA's recognised	(1) 100% in case of
international study tour		exporters'	APEDA sponsored
sponsored or organized by		associations.	activities
APEDA and association of			
exporters.			(2) 90% of total cost in
			case of programmes
			organised by recognised
			exporters' associations.
Component 5			'
·	New		(1) 500/ of the total
Formation and recognition of	New	APEDA's recognised	(1) 50% of the total
commodifies specific		exporters'	annual expenditure with
exporters' associations		associations for	a ceiling of Rs.20 lakhs
		establishing.	per association.
			(2) for international
			affiliations 00% of the
			total cost of affiliation.

(iv) Scheme for Research and Development

Component	New/	Eligibility	Scale of Assistance
	Existing/		
	Modified		
Component 1			
Assistance for technology	Existing	APEDA	100% in case of APEDA
development through R & D			
efforts with research			
institution under			
Government /public sector.			
Component 2			
Assistance to recognised	Modified	APEDA recognised	Up to 50 % of the total
exporters' associations of		exporters' associations	cost of the project
APEDA to support relevant			subject to a ceiling of
research & development for			Rs. 20 lakhs.
export enhancement through			
R&D organizations in			
cooperative/private sector.			

(v) Scheme for Transport Assistance

Component	New/	Eligibility	Scale of Assistance
	Existing/		
	Modified		
Assistance to exporters for	Existing	Exporters of	TA norms for exports
transport by air / sea on	scheme	designated products	by air
selected horticulture			For Fresh Cut Flowers
products / medicinal plants /			Least of:
animal products / processed			» 20% of FOB value
food products / poultry			» 25% of freight
products etc.			» Specific rate (Rs. per

	kg)
	Other Eligible Items
	(except Fresh Cut
	Flowers)
	Least of:
	» 10% of FOB value
	» 25% of freight
	» Specific rate (Rs. per
	kg)
	TA NORMS FOR
	EXPORTS BY SEA
	For eligible products
	exported in
	non-reefer containers
	Least of:
	» 10% of FOB value
	» 25% of freight
	» Specific rate (Rs. per
	kg)
	For eligible products
	exported in
	reefer containers
	Least of:
	» 10% of FOB value
	» 33% of freight
	(inclusive of
	Inland freight in reefer
	containers)(*) See Note
	below
	» Specific rate (Rs. per
	kg)
	» 50% of ocean freight

7.8.2 Proposed Budget Outlay for APEDA Financial Assistance Schemes for XI Five Year Plan (2007-2012)

Scheme	Total Outlay (Rs Crores)
Scheme for Development of	921.25
Supply Chain Infrastructure	
Scheme for Market Intelligence	3970.30
and Market Development	
Scheme for Quality	652.00
Development and Capacity	
Building	
Scheme for Research &	41.50
Development	
Transport Assistance Scheme	200.00
Grand Total	5785.05

7.8.3 Proposed Outlay for Tobacco Schemes

As explained in the earlier Chapter, the proposed outlay for tobacco schemes is as under:

Scheme	Total Outlay (Rs Crores)	
Designing solar barns	40.00	
Briquette making industries	10.00	
Greenhouses for raising nurseries	10.00	
Encouraging use of Bio/organic fertilizers	6.00	
Bulking sheds/model storages	30.00	
Creation of trade related databases	0.25	
Total	96.25	

CHAPTER 8

RECOMMENDATIONS

The Working Group analyzed the existing agricultural marketing system; assessed the infrastructure requirements and gaps therein; reviewed the policy framework for agricultural marketing; assessed the performance of external trade; and several related issues with a view to suggesting a roadmap for the XI Five Year Plan. The main focus of the Working Group had been on (a) improving the efficiency of the marketing system and reducing the costs of marketing, particularly the avoidable waste in the marketing chain; (b) to help value addition at the farm and village level as well as at the secondary level for creating employment in rural areas/small towns and for expansion of the demand for farm products; (c) to develop markets but with less regulation; and (d) to segregate products according to quality and increase quality consciousness both among the farmers and actors along the value-chain. The Working Group, while framing its recommendations, recognized that there are three essential/necessary requirements for evolving an efficient agricultural marketing system in India. These are (a) continuous evolution, perfection and transfer of science and technological inputs in agricultural marketing; (b) introduction of 'scale' in agricultural marketing for reaping the benefits of economies of scale; and (c) continuously refining and putting in place a conducive policy and regulatory framework, including withdrawal of the state in many areas.

The recommendations of the Working Group have been divided into following six groups and these flow from the detailed analysis and justification presented in the preceding chapters:

- (i) Marketing System Improvement and Conducive Policy Environment
- (ii) Strengthening of Marketing Infrastructure and Investment Needs
- (iii) Improving Market Information System with the Use of ICT
- (iv) Human Resource Development for Agricultural Marketing
- (v) Promotion of Exports/External Trade
- (vi) Reorientation of Policy Paradigm

8.1 MARKETING SYSTEM IMPROVEMENT AND CONDUCIVE POLICY ENVIRONMENT

8.1.1 Wholesale Markets Management

- (1) Agricultural marketing reforms initiated must be taken to logical conclusion by operationalizing the amendments as envisaged by the model Act. Rules must be notified by the States and the reform measures should be publicized among all stakeholders. To facilitate the State Governments, Ministry of Agriculture should frame model rules and procedures for circulation to states as guidelines.
- (2) Licensing procedures is to be simplified. An entrepreneur should be able to apply for a single unified license at the state level to enable procurement in any district or market without hindrance or requirement for additional paper work. In other words, single unified license for buying, procuring, selling of inputs, storage, and processing of all agriculture commodities for the State as whole be introduced.
- (3) We should move to a regime of professionally managed wholesale markets. The existing markets with APMCs could be leased out for upgradation and management on long term contracts or be converted into public-private partnership markets. The organization of markets should be on the principle of a service industry. There is also a need to encourage markets to be set up by the private sector and farmers' cooperatives. This will attract private investment in creation of much needed marketing infrastructure, create competition and ensure better service to the farmers.
- In the context of market regulation and development, all States and UT Governments should be encouraged/incentivised to:

- Hold regular elections of agricultural produce market committees and bring professionalism in the functioning of existing regulated markets.
- (ii) Plough back the market fee for development of marketing facilities and investments for creation and/or upgradation of infrastructure in market yards/sub-yards. Priority be given to cleaning, sorting, grading and packaging facilities in villages, sub-yards and yards.
- (iii) Extend greater flexibility to stakeholders, sellers as well as buyers to interact in the markets. For this, the market needs to be conceptualized in wider a context. Further, not only the licensing of traders, commission agents and other market functionaries need to be liberalized by de-linking the licenses with ownership of shops in the yards/sub-yards, the requirement of multiple licensing for each market within a State needs relaxation.
- (iv) Promote grading, standardization, packaging and certification in the market area.
- (v) Ensure transparency in auction system, penalization on arbitrary deductions from the farmers' realization, prompt payments to farmers, dissemination of market intelligence and speedier and hassle free transactions in the market.
- (vi) Improve weighing systems by installing bulk weighment system and handling, in a time bound manner.

8.1.2 Promotion of Contract/Cooperative Marketing

- Institutional innovations aimed at collective action for marketing should be encouraged and promoted.
- (2) Alternative institutional arrangements like contract farming, farmers companies and New Generation Cooperatives for coordinating the

marketing efforts of small farmers should be evaluated in different social and cultural settings and encouraged for adoption according to social feasibility.

- (3) There are several success cases (formal as well as informal) of collective marketing by farmers and NGOs, which should be documented and publicized for others to follow or adopt.
- (4) In view of the preponderance of small and marginal farmers in the country, and the need for improving their viability in the changing and competitive environment of agribusiness, the networking or clustering of farmers for the purpose of marketing of their surpluses can be achieved through such alliances as contract farming or cooperative marketing.
- (5) Contract farming that helps infusion of new technology and capital in farm business should be popularized and encouraged.
- (6) A sustainable company-farmer partnership requires mutual respect and a fair and transparent negotiation process, which should be built into contract farming agreements.
- (7) Major conditions for successful interlocking between agribusiness firms and small producers are increased competition for procurement, guaranteed market for farmers produce, effective repayment mechanism, and market information for farmers, which should be adequately recognized in evolving contract farming agreements.
- (8) Innovative pricing mechanisms like bonus, share in company equity, and quality based pricing should also be built into contract farming agreements.
- (9) The government intervention in contract farming arrangements should be minimum but it should facilitate the arrangement from outside.

- (10) Though the monitoring role of APMC or any other government agency may be desirable, these should not be made a party to the contracts.
- (11) The government should not police contracts or impose contract on unwilling firms or in inappropriate situations.
- (12) For the success of contract farming arrangement, there should be an element of competition among alternate contractors.
- (13) The NGOs can play a useful role in promoting the linkages of small farmers with agribusiness firms or companies, which should be encouraged as a state policy.
- (14) There is no need to look for permanence in contract farming arrangements and as the market conditions change, contract farming may be allowed to wither away.
- (15) The existing scheme of Ministry of Food Processing Industries, related to financial incentive to the contractor, in the form of reimbursement of 5 percent of value of raw material should be continued.
- (16) For the success of Corporate Farming, corporate agencies should be encouraged to lease the lands to small farmers as contract growers.
- (17) The lessons from Amalsad and Gadat Cooperatives should be widely publicized and cooperatives in output marketing and processing should be appropriately promoted.
- (18) Primary Agricultural Cooperative Societies should be roped in for primary value addition at the local level and marketing of members' farm products.
- (19) For checking the infiltration of traders and middlemen as sellers in farmers markets, the participating farmers should be organized into

management groups and responsibility of identifying the users of these markets be given to Farmers Management Groups.

- (20) Producers or farmers organizations should be promoted by providing them financial support for professional managerial services and for creation of some critical post-harvest handling/processing infrastructure.
- (21) With the increasing tendency of organized retailing (like supermarkets), farmers organizations should be provided support in the form of necessary infrastructure of grading, sorting and packaging that will help in increasing farmer to fork linkages.

8.1.3 Legal Framework and Fiscal Matters

- (1) There is a need for bringing uniformity in the state-level tax structure in agricultural commodities for improving the market efficiencies. Taxes and fees on raw agricultural commodities should be rationalized, with a ceiling limit of 4 percent. In principle, raw agricultural commodities should attract zero tax (including purchase tax, mandi tax, commission of agents, and so on, which in Punjab today accounts for about 11 percent on wheat). This can be done by allowing grain companies/traders to buy directly from farmers without going through commission agents, and abolishing purchase/sales tax.
- (2) Octroi and Entry Tax should be abolished wherever exists. Uniform Value Added Tax (VAT) in agriculture, should be introduced in the following manner, which should help the growth of the agro-processing industry:
 - On processed products of a perishable nature zero percent
 - Other processed foods (excluding tobacco and alcoholic beverages) 4 percent
- (3) There is need to abolish or reduce fees, cess, taxes, and duties on procurement of agricultural or horticultural produce through any

registered contract-farming programme. This would promote direct procurement, improve quality of produce and lead to reduction in the load on the State and Central procurement system.

- (4) Provide capital subsidies to processing industries along with subsidized interest rates for setting up bio fuel plants and provide tax/duty concession for the bio-diesel producers.
- (5) Treat 150 percent of investment by private sector in agricultural marketing infrastructure chain as deductible expenditure like in the case of R&D, for the purpose of income tax.
- (6) The *de facto* restrictions on movement of goods across State borders should be removed by harmonizing state-level taxes and providing for their hassle free collection at convenient points. The country should be conceptualized as a unified integrated national market.
- (7) Essential Commodities (Amendment) Act should be modified to provide for imposition of trade and marketing restrictions only during the exceptional situations of demand-supply dislocation, market aberration and price volatility.
- (8) The rules and regulations under the Food Safety and Standards Act 2006, which has been passed by the Parliament, should be expeditiously formulated and notified.
- (9) The Warehousing (Development and Regulation) Bill 2005, which is now before the Parliament, should be expeditiously passed.
- (10) Set up an accreditation agency for certified warehouses and warehouse receipts. Encourage private sector, cooperatives and panchayats to set up rural godowns. Specify standards and permit warehousing receipt system.
- (11) Exempt various taxes and levies arising on the negotiability of the warehouse receipts.

- (12) The Bill for amendment in Forward Contracts (Regulation) Act should be expeditiously passed to enable the FMC for effective regulation of trade in futures. There should be rational riders on physical delivery in futures markets. At present, futures are allowed for six months. It should be extended at least to 12 months so that full crop marketing year and its seasonality are covered. Restrictions on futures trading in livestock products should also be withdrawn.
- (13) Bring substantial jump in public investment as suggested in this report.
- (14) Investments in the entire agri-value chain like creation of cold chain, new agricultural marketing infrastructure or modernization of existing markets should be eligible for agricultural loans under priority sector lending.
- (15) Encourage Foreign Direct Investment (FDI) in food retailing with due safe guards of protecting the existing retail corner stores/employees of these stores.
- (16) In attracting 'Foreign Capital' safeguard should be provided against Flight by Night Operators. A suitable mechanism should be devised so that whenever the private parties come they have a real and sincere stakes both in terms of land and money.
- (17) Considering the high pay-off from rural roads in terms of both poverty reduction and accelerated growth, the public investment in rural roads should be stepped up.

8.1.4 Promotion of Grading and Quality Standards

For promoting grading and standardization and improving the quality of the produce, measures needed are –

(1) Existing national grade standards should be harmonized with international grade standards.

- (2) Grade standards for all farm commodities should be comprehensively reviewed and reformulated, including the commodities traded only in the domestic market.
- (3) Grading facilities at all the stages of marketing chain should be upgraded with the establishment of grading units and pack-houses in the villages/sub-yards, establishment of grading laboratories at appropriate locations, establishment of State level grading and standardization bureau and by providing intensive training to farmers.

8.1.5 Simplification of Procedures for Speedy Implementation of Schemes

The procedures for implementation of schemes related to agricultural marketing, including those intended to attract private investment should be simplified on the following lines:

- (1) Encourage States to professionalize the management of existing marketing channels and regulated markets by outsourcing the activities in the markets. The states must also modernize the markets in PPP mode.
- (2) Public support grants must be provided to fill the viability gap of the marketing infrastructure projects and the same be estimated to be around 50 percent of the project cost. Therefore, the grant for private/state agencies may be pegged at 50 percent of the project cost.
- (3) There should not be a limit for maximum size of the marketing infrastructure project.
- (4) The administrative procedures must be uniform across all the schemes by all the Ministries/Departments.

- (5) Single window application system must be put in place with an integrated ICT interface among all implementing agencies.
- (6) There should be a coordination mechanism for dovetailing similar schemes implemented by different Departments within the same Ministry and by different Ministries. A coordination committee may be constituted that should meet every quarter with all the heads/nodal officers of each Ministry/department.
- (7) The budget allocations for all the specified schemes should be permitted for re-appropriation among the ministries/departments with the approval of the coordination committee.
- (8) A panel of professional consulting agencies must be prepared for projectising the investment opportunities. All the Ministries/Departments can make use of them from time to time. A system of adding a new agency or deleting an agency to the panel should be put in place.
- (9) The approval process for all the schemes included in the XI Five Year Plan must be simplified and these should be put on ground latest by June 2007.
- (10) Planning Commission must evaluate the schemes after two years of implementation and take mid course correction. The planning commission must have professional agencies empanelled centrally, and the ministry/department may choose the experts/agencies from among the panel for evaluation or assessment of the schemes.
- (11) The approval process for the projects must be in a seamless ICT interface.

8.2 STRENGTHENING OF MARKETING INFRASTRUCTURE

8.2.1 Guiding Principles

The model of marketing infrastructure under Indian conditions should consist of the following:

- Direct sourcing from the farmers and limiting the intermediaries to bare minimum.
- (2) Value addition activities such as cleaning, grading, packing, primary processing, and storage should take place nearer to the farm or production center.
- (3) Organization of the farmers into growers' groups/commodity groups/ cooperatives/self help groups/producer companies to ensure the participation of diversely located small and marginal farmers and their linkage with the markets.
- (4) Proactively promote grades and standards through capacity building and infrastructure creation, instead of leaving it to the private retail chains to come up with their own standards and grades, because the grades and standards, as prevalent in other countries, may be disastrous to resource poor Indian farmers.
- (5) Instead of leaving to the retail companies to evolve sourcing models, government should proactively prepare the farmer groups to interact and establish linkage with retailers. The infrastructure for primary handling needs to be created in every village or group of villages in the form of primary value addition and multi-purpose service centres directly in the public domain or through Public Private Partnership. These centres could be managed by cooperatives, SHGs, farmers' clubs and producer groups and linked to wholesale or retail markets.

- (6) Should target for handling at least 50 percent of perishables through uninterrupted cool chains from farmer to the consumer.
- (7) Continuous modernization of existing marketing channels/systems so as to enhance the marketing efficiency and efficiency of handling the food.
- (8) Should introduce professional managerial practices in running the markets and bring efficiency into the system, even by outsourcing the management, if required.
- (9) Should aim at bringing some of the existing markets under professional management through Public Private Partnership.
- (10) Should include quality consciousness among the farmers in handling the produce and for this purpose, capacity building for appropriate grading, and adoption of good agricultural practices and food safety standards would be very critical.
- (11) Should promote consumer demand for safe and healthy foods, so that the demand will drive the implementation of food safety measures, which will ultimately enable us to capture global markets. Price incentives can provide demand-pull for quality and safe food.

8.2.2 Infrastructure and Investment Requirements

- Develop 5000 Rural Primary Markets/Rural Periodic Markets/Rural Haats (out of 21000) at a cost of Rs 25 lakh per market.
- (2) Modernize 2428 principal market yards at a cost of Rs 3 crore each and 5129 sub-yards at a cost of Rs one crore each.
- (3) Encourage setting up of 75 new wholesale markets by the private sector at a cost of up to Rs 10 crore each.

- (4) Set up 35 Terminal Markets at a cost of Rs 50 crores each under PPP mode.
- (5) Set up 1152 Farmers Markets with an investment of Rs 50 lakhs per market to achieve a target of 50 percent of the marketed surplus getting sold directly through these markets.
- (6) Promote and develop 241 identified commodity specific markets for fruits and vegetables at an investment of Rs 20 crores per market.
- (7) Set up and develop 15 specialized flower markets with an investment of Rs 10 crores per market.
- (8) Develop 500 markets for medicinal and aromatic plants with an outlay of Rs one crore per market.
- (9) Set up and develop 50 specialized markets for spices at a cost of Rs 50 lakhs per market.
- (10) Set up 1000 livestock markets with an investment of Rs 20 lakhs per market.
- (11) Promote and set up 50 modern abattoirs under PPP format at a cost of Rs 10 crores per abattoir.
- (12) Promote modern meat retail markets at 1000 locations at a cost of Rs 5 crore per market.
- (13) The storage capacity gap of 35 million tonnes requires an investment of Rs 7687 crores, but part of this goes with other recommendations. Public sector investment proposed is Rs 2000 crores for 6.67 million tonnes of warehousing capacity at the rate of Rs 3000 per tonne. For this purpose, the rural godown scheme implemented during X Plan period should be continued.

- (14) Cool chain infrastructure facility of 45 lakh tonnes capacity may be created at an investment of Rs 15708 crores.
- (15) Provision of Rs 500 crores be made for creating farm road infrastructure in 100 NHM (National Horticulture Mission) clusters.
- (16) For reaching the benefits of commodity futures markets to the farmers, National Electronic Spot Markets should be promoted.
- (17) For facilitating use of insurance products by the farmers, 50000 automated weather stations be set up under PPP format with an investment of Rs 860 crores (500 + 360).
- (18) Create state-of-the-art infrastructure at 15 Centres of Perishable Cargo with an investment of Rs 20 crores per centre.
- (19) An investment of Rs 750 crores be provided for a two-tier Quality and Food Safety Infrastructure.
- (20) For promotion of GAP (Good Agricultural Practices), an investment of Rs 1010 crores be provided which includes Rs 10 crores for Model Farms for India GAP Certification.
- (21) For promoting 5000 farmers' organizations, a sum of Rs 250 crores at a modest cost of Rs 5 lakh per farmers' organization be provided.
- (22) Total investment requirement for all the suggested infrastructure items is Rs 64312 crores, besides Rs 43000 crores for food processing sector, during the XI Five Year Plan.
- (23) Out of Rs 64312 crores of investment requirement, Rs 12000 crores can flow from RIDF, Rs 5000 crores from APMCs or SAMBs, and Rs 30625 from the private sector. Thus central sector outlay is proposed as Rs 16687 crores.

8.3 STRENGTHENING OF AGRICULTURAL MARKETING INFORMATION SYSTEM USING ICT

- (1) Integrated Website for all agencies of both State and Central Government involved in Agricultural marketing services like APEDA, APMCs, CWC, SWCs, CACP, CCI, DMI, FCI, JCI, KVKs, MPEDA, NAFED, TRIFED, NCDC, NDDB, NHB, SAMBs, and STC.
- (2) Integrating AGMARKNET with State Wide Area network (SWAN) and NICNET.
- (3) Establishment of AGMARKNET Nodes at KVKs and Panchayats with IT infrastructure along with Internet accessibility.
- (4) All agriculture wholesale markets to be the WiMAX based Internet Hubs.
- (5) Computerization of all mandies/APMCs under E-Mandi project undertaken with the existing AGMARKNET Nodes (about 2850 in numbers) as the Phase-II Programme of the MRIN Scheme.
- (6) Development of Agricultural Commoditywise Portals for 300 Commodities and 2000 varieties to facilitate supply-chain (farmgate to international) management models, and development of marketwise, commoditywise, regionwise, and countrywise marketing intelligence system.
- (7) Dissemination of market information through electronic media, ICT media, telecommunication media and print media.
- (8) Linking all cooperative marketing organizations through provision of computerization and internet facility and putting them on common or inter-linked websites.
- (9) E-networking of quality testing laboratories in the country.

- (10) E-linking of rural business hubs or rural primary markets with exporters, supermarkets and retailers.
- (11) Tele-density in rural areas continues to be low; resultantly the access to information to the farmers is constrained. Government has taken number of positive initiatives for knowledge dissemination to the farmers by Kissan Call Centres, AGMARKNET portal, etc. Meaningful gains cannot occur without sufficient facility of telecommunication. Increase in teledensity, as infrastructure development for rural economy should be taken up with a time frame of attaining 90 percent village connectivity in next three years.
- (12) The portal of AGMARKNET should be strengthened in PPP mode and should facilitate as Virtual Market with a window for the farmers to inform about their produce and practices and buyers to seek production/supply of their choice. Such Virtual Market will benefit the Farmers Groups to announce their production profile.

8.4 HUMAN RESOURCE DEVELOPMENT FOR AGRICULTURAL MARKETING

- (1) All state Agricultural Universities should initiate degree and diploma courses in argi-marketing and agribusiness, on the pattern of GB Pant University of Agriculture and Technology, Pantnagar. Though the courses will be self-sustaining but basic strengthening of Departments of Agricultural Economics of SAUs and also of concerned division of NIAM should be done during the XI Five Year Plan. The budget requirement would be around Rs 100 crores for the XI Five Year Plan period.
- (2) National Institute of Agricultural Marketing (NIAM) and agricultural economics/agribusiness departments of State Agricultural Universities should be strengthened to increase intake capacities in agri-marketing and agribusiness courses.

- (3) The role of the market as knowledge and information exchange amongst the converging farmers needs to be appreciated and harnessed. There is a need for greater synergy between extension services and market. State Marketing Departments and Boards, APMCs, Krishi Vigyan Kendras (KVKs), Marketing Cooperatives, NGOs and PRIs should pay increasing attention to train the farmers in marketing related skills like quality standards, FAQ norms, terms of contract under contract farming, provisions of various insurance schemes, preparing the produce for the market and primary value addition, and motivate them to organize themselves in to marketing groups, which could take the form of cooperatives, self help groups or even producers' companies.
- (4) Atleast 100,000 farmers groups should be organized during the XI Five Year Plan for promoting group marketing, based on either individual commodities, or groups of commodities. From each group, atleast one farmer and one woman leader should be provided training for three days on marketing, washing, sorting, grading, packaging and, if needed, on minimal processing of farm products of their concerned location. This work can be taken up by KVKs which need strengthening as recommended elsewhere. But separate budget for this training needs to be provided to KVKs, which works out to Rs 30 crores.
- (5) There is also a need for training/orientation/sensitization of food traders, including small wholesalers, mashakhores, retailers, and hawkers, on new technologies of packaging, sorting, quality maintenance, regulatory framework and related aspects of marketing. a two-day training of around one million traders would cost Rs 100 crores. The trainings can be organized by SAUs, ICAR Institutes, KVKs, State Departments of Agriculture/Agricultural Marketing and NGOs under the overall coordination of NIAM, DMI and MANAGE.
- (6) Each Krishi Vigyan Kendra (KVK) in the country should be provided with a post of senior scientist in agricultural marketing/agribusiness in addition to the existing strength of six scientists. Also, KVKs should be equipped with sufficient funds for a demonstration unit and training programmes
for extension workers and farmers group leaders in the field of agribusines and marketing management. The financial requirement for the entire XI Plan period would be Rs 102 crores.

- (7) The KVKs, Directorates of Extension of State Agricultural Universities, and district level agriculture offices should be strengthened by providing a post-harvest technology wing, consisting of scientist, agribusiness professional, technicians and demonstration unit, equipped with market intelligence on specific commodities.
- (8) The grass root awareness campaign should have focus on importance of integration of production with market and value chain and on good agricultural practices for better price realization by farmers.

8.5 **PROMOTION OF EXPORTS/EXTERNAL TRADE**

- (1) An institutional mechanism for creation of database on incidence of pests and diseases in major production areas of agricultural products for export and identification of pests/disease free areas be put in place through regular survey and surveillance.
- (2) The import quarantine system of the country should be strengthened to mitigate the risk of entrance of undesirable pests and diseases, which do not occur in India but may become a big threat for sustenance of our exports.
- (3) The process of improving our domestic marketing channels through amendments in state APMR Acts and simplification of other marketing regulations should be speeded up.
- (4) In view of the expanding global food industry and the increasing interest of big corporates in procurement/sourcing from India, there is need to promote market aggregators that may take the form of contract farming,

corporate aggregator or cooperatives, as is suitable for different regions/products of the country.

- (5) Aggregate market promotion campaigns for our identified thrust products should be launched and APEDA be delegated powers to undertake promotional activities for specific products in specific countries through participation in international trade fairs, buyer-seller meets and other product promotion activities.
- (6) For specified thrust products, cold stores/warehouses in gateways to major markets like Dubai, Singapore, London and Moscow may be created with 50 percent grant from APEDA.
- (7) Some experts should be posted as Agro Export Ambassadors in key target (importing) countries for regularly studying the market dynamics of imports into the targeted country and advise the Government of India and the industry for equipping to increase the market share of Indian agro products in that country.
- (8) NABARD should directly finance the projects/operations in the Agri Export Zones (AEZs) at the concessional rate of interest of 2 to 3 percent. This should include funding for capital investment relating to post-harvest handling, processing, storage and transportation and export/packing credit.
- (9) Under contract farming in AEZs, 50 percent rebate on premium for crop insurance should allowed.
- (10) As in other countries, Government of India should provide reinsurance to the insurers and credit guarantors so that exporters are able to offer products in the international market backed by favourable credit terms.
- (11) We should be fully equipped and active in effectively responding to various TBT notifications within the stipulated period of 60 days so that effective measures are taken by various stakeholders and Ministry of

Commerce to avoid the adverse effects of TBTs on the exports of products and services by Indian Trade and Industry.

- (12) The airfreight for agricultural fresh produce meant for export should be brought down by providing appropriate subvention to subsidize airfreight.
- (13) Mandate cargo space in passenger airlines for export of perishables should be provided.
- (14) For promoting the exports of tobacco products, following incentives should be extended and measures taken:
 - Enhance entitlement under DEPB on export to tobacco from the present level of 2 percent to 12 percent.
 - (ii) Alternatively, to make tobacco exports competitive, incidence of taxes on inputs and all along the value chain should be brought down.
 - (iii) Extend the benefit of drawback of Rs 850 per tonne on furnace oil supplied by domestic oil companies to EOU/EPZ/SEZ under deemed export scheme to tobacco exporters.
 - (iv) Service rendered abroad by non-residents for Indian tobacco exports should be exempted from service tax in India.
 - (v) Export credit to tobacco industry should be provided at 4 percent interest, which is in line with international interest rates. Further, the credit should be made available for development of infrastructure and R&D activities also.
 - (vi) Videsh Krishi Upaj Yojana should be extended to tobacco also.

- (vii) Keeping in view the exports of tobacco products, Kakinada and Vishakhapatnam ports should be developed and handling facilities at Chennai, Mumbai and these ports should be strengthened.
- (viii) A transport subsidy of Rs 2 per kg should be allowed for additional shipments made to CIS countries.
- (ix) FDI by International Leaf Merchants to invest in developing infrastructure for tobacco processing in India should be permitted because that would promote exports.
- (x) FDI in SEZs/100 percent EOUs for export of cigarettes should be permitted.
- (xi) Un-manufactured tobacco should be exempted from the purview of VAT at all stages.
- (xii) For improving the brand image of Indian tobacco and tobacco products, trade delegations to major importing countries should be sponsored at regular intervals and publicity be increased through participation in international tobacco exhibitions and advertisements in international magazines.
- (15) The financial outlay proposed for schemes of assistance for development of supply chain infrastructure for the XI Five Year Plan is Rs 921.25 crores. This includes various components of common infrastructure and capital subsidy for export infrastructure.
- (16) Under the scheme for market intelligence and market development, which includes packaging development, a budgetary outlay of Rs 3970.30 crores is proposed.
- (17) A sum of Rs 652 crores is proposed for the scheme for quality development and capacity building during the XI Five Year Plan.

- (18) The estimated outlay proposed for Research and Development is Rs 41.50 crores and for transport assistance scheme is Rs 200 crores.
- (19) Total proposed outlay for financial assistance schemes of APEDA is Rs 5785 crores.
- (20) The proposed outlay for tobacco scheme is Rs 96 crores.

8.6 **REORIENTATION OF POLICY PARADIGM**

- (1) Shift 'agricultural marketing' from the list of state subjects to the concurrent list for speeding up the progress of market reforms and evolving a unified national market.
- (2) Dovetail domestic marketing and price policies with trade policies by redefining the Terms of Reference of Commission for Agricultural Costs and Prices (CACP) to include trade policy related matters, including import duties on agricultural products.
- (3) Avoid knee-jerk decisions in marketing and trade related matters like decisions on wheat imports/exports, ban on exports of pulses, reimposition of stocking limits and under-hike in minimum support prices (MSPs) in some years.
- (4) Redefine 'agriculture to include production, processing, transportation, marketing and trade in food, feed, fibre and other agricultural products, including livestock and fisheries sector products.