## CHAPTER - VI

### INFRASTRUCTURE FOR FLORICULTURE IN THE STATE

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6.1 General Information

Karnataka has embarked on a massive infrastructure expansion programme aimed at providing Floriculture industry with World-class facilities at competitive prices.

Karnataka has a good network of roads. It has 6 National Highways passing through the State. State highways and Rural Roads Networks make inter-City and town communication accessible. It is worth mentioning here that the rural Road network has brought remotest villages in touch with towns. The National Highway covers 1968 kms, the State Highway covers 17,997 kms. The village and municipal roads cover about 95,000 kms. The road length per 100 km area is 65-70 kms in Karnataka, which compares well with the National average.

The Railway network covers a total length of 3090 kms, major cities like Bangalore, Hubli-Dharwad, Belgaum, Gulbarga, Hassan, and Mangalore are well connected to other parts of the country.

The state has 20 working ports. Of which 14 are located in Uttara Kannada District and remaining 6 are located in the Dakshina Kannada District. Important among them are Mangalore and Karwar Ports. Besides the well structured airport of Bangalore, there are two more airports in the state (i) Mangalore and (ii) Belgaum.
There are the indications that Bangalore will soon become an International Airport. Air India, Lufthansa, Kuwait Airways operate international cargo flights from Bangalore on regular basis.

Karnataka has five functional airports at Hubli, Mysore, Belgaum, Mangalore and Bangalore. Bangalore is well connected with the rest of the country. International flights originate from Bangalore as well. A new international airport for Bangalore is scheduled to be commenced shortly. In addition to the need for up-gradation of existing airports, the Government proposes to establish domestic airports in district towns, which have adequate economic potential. The state also recognizes the need to increase connectivity to areas where large projects are coming up. The state has identified Hubli, Gulbarga, Mysore, Bellary and Hassan for the construction of minor airports to handle 50 seater aircraft initially.

The state has the distinction of having established the first Hydro-Electric Power Generation Station in Asia. Today, the power generating potential through Hydro-power Projects is very promising here. The total potential in the state is estimated at 7,700 MW, of which about 2,400 MW has been tapped. Besides the power generated by the stations located in Karnataka, the state gets its share from the central power stations at Ramagundam and Neyveli.
Steady industrialization of the State has seen a steady rise in the energy demand. With completion of the on-going projects and the implementation on future ones, the state will balance the demand and supply of power.

There are presently 375000 telephone lines in the state. Subscriber Trunk Dialing and International Subscriber Dialing are now available in all major cities (70 Cities) of the State. There are 9,650 Post Offices in the state and 1,130 Telephone Exchanges. The communication sector in the state infrastructure has made rapid strides.

Karnataka offers strong financial support to entrepreneurs through several Government of Karnataka institutions like KSIIDC and KSFC as well as Government of India financial institutions like IDBI, IFCI, SIDBI, NABARD and TDICl.

The banking sector in Karnataka is one of the strongest in the country with an extensive network of banks, nationalized and private, operating all over the state. Four of the country's major nationalized banks as well as one of India's largest private banks, Vysya Bank, have their headquarters here.

This has been further reinforced in recent years with the World's leading banking corporations like CITIBANK, Bank of America, Standard Chartered Bank HSBC, Deutsche Bank, Bank of Muscat, Nova Scotia and several others setting up their branches here.
Karnataka state has a long tradition of floriculture. The area under Floriculture is too vast when compare to the other floricultural states in the country. However, the commercial floriculture has assumed to be important only in the recent past. In most part of the state, flower growing is carried out on smallholdings. Until 1990, there were no systematic efforts or policies to promote floricultural activities and its trade in India as well as in the state. Only a small proportion of flowers were exported and this was very meager compared to other small countries like Kenya and Columbia.

Recently, a good number of export-oriented floriculture units have been established in the state and the flower industry has started grabbing the opportunity in the overseas market. Having realized its importance in the international market, the state government has identified floriculture is a thrust area along with horticulture. In this direction, government and concerned organizations have started giving various infrastructure facilities to develop and promote the floriculture in the state in view of widening the country’s exports.

6.2 Development of Floriculture in the State

In the country, only few states are recognized for having keen interest in the development of floriculture industry viz, Karnataka, Tamilnadu, Andrapradesh, Maharrastra, Rajasthan, Uttar Pradesh, Uttaranchal, West Bengal and Sikkim. More over, Karnataka State particularly Bangalore has been identified as the potential area for floriculture development. Having realized this, the Government of Karnataka initiated several measures for overall development of floriculture in the state. They
have remained as milestones in the history of floriculture in recent years. The crucial among them are, the agricultural policy of Karnataka 1995, which has identified floriculture as the sunrise industry. The recent amendment of Karnataka Land Reforms Act 1961 aimed at land ceiling has been removed for Aquaculture, Horticulture, Floriculture and agro-based industries as well. Under this amendment, a non-agriculturist can purchase agricultural land upto 109 acres to take up flower enterprise.

Karnataka Industrial Investment Corporation Ltd. has accorded Industrial Status to Floriculture. Karnataka Industrial Area Development Board and APEDA have planned to set up an International Flower Auction Centre on the lines of Netherlands Alasmier International Floriculture Auction Center. The state also plans to set up the Karnataka Floriculture Development Board (KFDB) to promote floriculture as the sunrise industry in Karnataka. A memorandum of understanding was signed by the state with APEDA for the creation of AEZ for Floriculture in the State.

6.3 Storage

There are two methods of storage for flowers namely Dry and Wet storage.

Dry Storage

One of the main goals with dry storage is to extend shelf life (the life of the product before being prepared for final sale to the consumer). In properly managed dry storage, the flowers should be in vapor-locked containers to create a microclimate
to retain moisture and reduce transpiration. This is most commonly achieved by wrapping the flowers in plastic after pre-cooling by the growers. The cooler for dry storage must be kept at a temperature of 32°F to 33°F, where respiration and transpiration are at minimum level. If temperatures are above 33°F, biological processes begin to take place that can be detrimental to the extended life of the flowers.

Generally, as the storage temperature increases (above 36°F to 38°F) flowers should be stored in a fresh flower food solution or dehydration will occur because of increased evaporation, transpiration and respiration.

**Advantages of Dry Storage**

a. It requires less space to store boxes of cut flowers as opposed to flowers stored in buckets.

b. There is less mechanical damage to the flowers when transported to different locations.

c. It is less labour intensive.

d. You can purchase greater quantities - especially helpful prior to holidays.

**Disadvantages of Dry Storage**

a. It is not a good choice if temperature is above 33°F to 34°F. At this temperature flowers should be stored in water.
b. Most retail operations are not set up with proper refrigeration to do this successfully.

It is important to remember that dry storage is not advantageous for all types of flowers. Roses, carnations and chrysanthemums generally do not respond well to dry storage conditions and do better when stored wet in a flower food situation.

**Wet Storage**

Wet storage is when you store flowers in flower flood situation for relatively short period of time (one to four days). The environment should be 34°F to 38°F at 80 to 90 percent relative humidity. If you are only going to store flowers for a short period of time, this is the best method.

**Advantages of Wet Storage**

a. The product is ready to use and sell at the retail level immediately.

b. The sooner you sell flowers after the harvest date the longer vase life they will have for the end consumer.

c. You can more easily examine the final conditions of the flowers for credit or replacement.

**Disadvantages of Wet Storage**

a. It is more expensive to store them because of space and shelving needed to accommodate the buckets.
b. In general, more mechanical damage will take place during handling, packing and transporting.

c. You have a shorter window in which to get them in the consumers hands (three to four days to ensure maximum vase life.

Growers, brokers, wholesalers, and retailers utilize traditionally dry storage. Retailers can also use dry storage. The choice is rest with users, they must first consider the quality of the product they are buying, space allocation, inventory turnover, and temperature/relative humidity environment. By paying attention to the details, they can successfully store flowers for the maximum enjoyment of the end user - the consumer.

The cold storage units provide a vital link between the production and marketing of agricultural and horticultural produces. It helps in storing the horticultural produce during glut and making them available in off-season with least degradation in quality.

At present there are 54 cold storage units spread over 11 districts with a total storage capacity of 91,830 MT, for handling horticultural crops. Of these units, 11 are in the co-operative sector (9190MT), 41 are in the private sector (82,380 MT) and two are in the public sector (260MT). The horticultural crops that are readily stored are Potato, Grapes, Tamarind, Citrus, Pomegranate, Pineapple, Chilli, Apple and cut flowers.
The existing cold storages in the state are facing the following problems:

1. Low occupancy percentage
2. High cost of electricity
3. High rate of interest on loans
4. Cold storages are not designed to store different commodities at different temperature of relative humidity

The state government is providing a subvention of Rs.1/- per KWH of electricity consumed by cold storages in the horticulture sector. Further, National Horticulture Board is providing a back-ended subsidy of 25% (maximum of Rs.50 lakhs which ever is less) for construction/modernization of cold storage units. Cold storages are classified as Agro Food Processing Industry for providing incentives and concessions available to Agro Food Industry.

6.4 APEDA’S Initiatives for the Development of Sunrise Industry in Karnataka

The Floriculture industry being highly capital intensive, one of the features affecting their overall costing of the product is of investments like storage, sorting, grading, pre-cooling evolve a system by which such facilities can be provided as common facilities. In this regard, APEDA played a key role in the development of floriculture sector by providing financial assistance for production and post harvest infrastructure, quality maintenance, promotion and airfreight etc. APEDA has also taken other initiatives like identification of opportunities, setting up of Agri Export Zones, Floriculture Infrastructure Parks and cargo complexes at international airports.
In addition, a Marketing Facilitation Centre (MFC) in Netherlands was established by APEDA in order to assist the exporting units to market their produce in the international market. This center became operational in November 2001 and has been in operation for last three years. APEDA now is reviewing its performance in order to take a decision on its continuation including the form and manner of implementation.

APEDA has recently funded a project of this nature in Hosur, Tamilnadu. It has to encourage such Floriculture parks, which is based on the concept of giving common service infrastructure facility and common marketing facility so that the cost of production is brought down considerably.

APEDA has setup a Marketing Centre in Holland for direct marketing of Indian Produce with value addition, which resulted in savings thus improving profitability. APEDA has also initiated steps for establishment of a State of art cold storage and perishable cargo handling center at Mumbai, besides flower auction centers at Banglore, Mumbai and Noida. APEDA also took initiatives in restructuring its airfreight subsidy scheme, as well as, strengthened its efforts through our Embassy in Brussels for reduction of import duty on flowers by EU.

6.5 Market Facilitation Centre at Amsterdam in Netherlands

APEDA, as a part of its continued efforts for supporting the floriculture industry and promoting floriculture export had setup a Marketing Facilitation Centre
(MFC) in Amsterdam, Netherlands. MFC started with a two-tier structure consisting of Indian representative and service provider. However, this arrangement faced problems in co-ordination. Therefore, the services of Aalsmeer auction were availed after the expiry of the contract of service provider towards the end of the first year of operation. The center setup under Market Access Initiative (MAI) scheme of the Ministry of Commerce & Industry became operational in Nov. 2001. The marketing center in its short life of six months has helped in understanding some of the producers perceived market constraints. Adopting an appropriate marketing system is critical to ensure proper returns in the highly perishable cut flowers trade.

APEDA had engaged as an Indian representative and that the services of Dutch Agency were also engaged to handle and recondition the Indian flowers at the Netherlands for presentation to the auctions etc.

The Role of MFC

- The MFC played a very active role in developing market for Indian growers by establishing contacts with the important auction houses, importers, direct marketing channels and supermarkets.

- Besides, MFC helped exporters by intermediating in disputes related to quality and helped exporters in settlement of payments. Many such cases have been resolved by the MFC.

- MFC provided relevant information on quality, post harvest and logistics of the consignments, optimization of marketing costs, standard operating
procedures for documentation, feedback on changes in policy and regulations of the auction, EU duties, etc.

- MFC facilitated exports for fruits and vegetables, during lean season for flowers.

During the past few months, the Central Government has identified six Agri Export Zones for flowers in Tamilnadu, Uttaranchal, Maharashtra, Karnataka and Sikkim. In view of the substantial benefit that accrued to the exporters as a consequence of the facility created in Amsterdam and also in view of the upcoming Agri Export Zones, a decision has now been taken to continue with the Facilitation Centre and build upon the gains made during the previous season. An amount of Rs. 35.48 lakhs has also been sanctioned by the Ministry of Commerce & Industry to undertake this activity. Apart from other activities, the Indian representative will also liaise and secure orders for supply of fresh cut flowers to Netherlands and other European countries. An effort will be made to open identical marketing centers in other potential countries such as UK, Japan, UAE, etc.

6.6 Setting up of Wholesale Market cum Auction Centre

Flower auction projects are being setup at Mumbai and Noida (U.P.) and the floriculture auction center at Bangalore is being upgraded to meet with the international standards.
6.7 Assistance for Replacement of Planting Material

There is also a need to replace the planting material periodically. Planting materials are normally used for maximum period of 5 years, which again is only in case of Roses. Life cycle of planting material in case of other varieties is comparatively less. For Floriculture industry, this is an important capital investment, which affects the overall production cost. In its growing stage, government needs to support the replacement of planting material. Many a times, the planting material may loose its export market very soon because of change in consumer preferences. Even in such cases, the planting material needs to be replaced even before the life cycle of the planting material.

APEDA had submitted a scheme for giving incentives to the units for replacement of planting material as and when it becomes necessary during the tenth plan Period.

Though, India is one of the largest producers of cut roses, the Indian flowers do not have any acceptance in the export market. Our dependence on the foreign breeders is at present very strong. Considering the huge potential of this particular industry, it is very necessary that the planting materials to be developed within the country. Government should consider taking up this exercise on development of planting material for Roses, Anthuriums, Carnations, Chrysanthemums, Foliage plants, etc., so that they are as good as the products that are expected in the export market.
Floriculture industry also facing some problems like importing unregistered pesticides for solving their problems at the field level with regards to the pests like Red Spidermite, Botrytis, Mildeu etc. The pesticides act of India imposes restriction on import of pesticides that are not registered. This severely affects the quality. A number of organic pesticides have been developed though they have not yet been standardized. So, the industry is still facing the pesticide problems. In this connection, APEDA is pursuing the issue regarding import of critical pesticides with the Ministry of Agriculture.

6.8 Model Floriculture Centre in the State (MFC)

Karnataka is one among the States in India to establish MFC in 1995 in an area of 9.132 acres at Nagarur village near Bangalore with the assistance of the Ministry of Agriculture, Government of India, under the centrally sponsored scheme for commercial floriculture. The main objective of the center is to serve as focal unit for the development of floriculture in the state. The following are the specific objectives.

- Demonstrate new technology of flower cultivation to the growers.
- Serve as a germplasm bank for conserving a wide diversity of flowers.
- Act as a planting material bank for area expansion and demonstration programmes on commercial flowers.
- Serve as a training-cum-demonstration center for post-harvest handling and processing of commercial flowers.
In the above center, about 500 sq. mts of green house was constructed with the technical and financial assistance from FAO during the VIII plan to demonstrate the new technology for the small farmers. One such centre has been established at Pampavana in Koppal District during the year 2002-03 to promote Floriculture in northern Karnataka.

The seed multiplication of new and improved varieties of Chrysanthemum, Tuberose, Jasmine, Gladiolus, Golden Rod and Aster were undertaken and distributed to farmers in this MFC, Nagarur. From 1997-98 to 2000-01, about 3.55 lakh plants and 292 kgs of seeds of various improved varieties were distributed to the farmers and expanded an area of 215 hectares under these flowers. Besides this, 405 small farmers were trained in greenhouse technology and commercial flower cultivation during the same period. Ten percent women have been trained since inception (Ramakrishna, 2001).

6.9 Assistance for the Construction of Greenhouse and Shade Net

The trained persons in the MFC have been provided financial assistance to the tune of Rs. Lakh (40 per cent of the cost) for the construction of 500 sq. mts cost effective greenhouse costing Rs. 2.5 lakh and Rs. 0.50 lakh for the construction of shade net pedal in 500 sq. mts. The objective of this is to produce export quality of flower under protective conditions. A few farmers benefited under these programmes and their farms, serving as demonstration centers for other farmers to follow. The total amount of subsidy distributed to these farmers accounted for 34.546 lakhs for
the construction of greenhouse covering an area of 91,837 sq. mts from 1997-98 to 2000-01. In addition to this, the farmers were provided quality-planting material of different flowers under various developmental programmes of the horticulture department.

6.10 Commercial Tissue Culture Laboratory

A Commercial Tissue Culture Laboratory was established at Hulimavu near Bangalore. The object view of the lab was to develop disease-free planting material on a large scale for distribution to the farmers. The multiplication of flowers such as Calla Lily, Chrysanthemum, Coleus, Areca Lutens, Potted Chrysanthemum, Dracaena, Angilonia, Gerbera, Bird of Paradise, Lantana and Durantha have been developed here. In addition to this, the State has established several indoor nurseries to distribute quality-planting materials of ornamentals and foliage crops. There are also 10 commercial tissue culture laboratories producing more than 30 million plants and flower crops.

6.11 Model Floriculture Village (MFV)

The Karnataka state is the obviously first in the country to introduce the concept of Model Floriculture Village. Under this programme, two villages were identified, one near Bangalore and another near Belgaum for demonstration new varieties of flowers developed by the Indian Institute of Horticultural Research, Bangalore. Several interaction classes between the farming community and scientists were organized in these villages to transfer the developed technology. The impact of
this can be witnessed in and around these villages in area expansion under the new
varieties (GOK, 2000).

6.12 Assistance to Grower’s Association

There has been a wide spread menace of middlemen and commission agents
in the traditional flower business. This is hampering the profits of the small and
marginal farmers who are mainly growing these varieties. In order to solve this
problem, the government is encouraging the flower growers association and
cooperatives by extending financial support to the registered associations, which are
engaged in production, processing and marketing of the flowers. The financial
assistance, to the extent of 40 percent of the cost, limited to Rs. 5 lakh is being
provided to such societies for the creation of post-harvest infrastructure facilities for
collection and grading, processing and marketing of the flowers.

6.13 Marketing Schemes

Having seen the menace of middlemen and frequent fluctuations in prices to
demand and supply conditions, a few organizations came into existence to help the
farmers to overcome these problems such as APEDA, NHB, NABARD and KAIC are
prominent among them.

6.14 Cargo Centre at Bangalore Airport

After 1990, Karnataka made remarkable progress in hi-tech floriculture and its
exports. Having realized the exporters difficulties at airport due to lack of facilities, a
cargo centre for perishable commodities like flowers, vegetables and fruits was
established at Bangalore Airport in 1998. This is the second unit in the country after New Delhi. Agricultural and Processed Food Products Export Development Authority (APEDA) jointly started this unit and Karnataka owned Mysore Sales International Ltd. (MSIL) at a cost of Rs. 2.5 crores in an area of 4,200 sq. ft. developed a receiving area of 1,000 sq. ft. A cold storage unit of 250 tones capacity was established in this center to store the flowers before loading the aircraft. This cold storage is a boon to growers of perishables particularly the flowers in reducing spoilages, besides maintaining the cold chain right from the point where the flowers are grown to foreign auction centers.

In the mean time, realizing the potential of cut flowers in the state, APEDA shown the interest in setting up a big wholesale market cum auction centre of International standards in Dutch manner for cut flowers in association with Karnataka Agro-Industries Corporation in Bangalore.

6.15 Rehabilitation of Floriculture Units

APEDA has been spearheading the efforts to promote this sector, which had tremendous potential to generate valuable forex earnings, and giving high per-unit returns to the entrepreneurs. As most of the issues related to the high cost of finance for this capital intensive industry, a meeting was held under the chairmanship of the secretary, Banking Ministry of Finance, wherein the Banks and FI's were asked to reassess the individual units, to provide the necessary relief. IDBI was nominated as the coordinating agency. APEDA also appointed M/s Tata Economic Consultancy
Services (TECS), Mumbai, to develop guidelines on criteria for identifying units, for rehabilitation benefit and suggest implemental rehabilitation package. TECS study made its final recommendation in August, 2001, which, inter alia, suggested rehabilitation measures, largely falling within the RBI / Banking framework. The two major recommendations related to restructuring the loans of the projects by the bankers, and strengthening of the export-facilitating infrastructure. APEDA set up a marketing centre in Holland for direct marketing of Indian produce with value addition, which resulted in savings, thus improving profitability. APEDA also initiated steps for establishment of a state-of-art cold storage and perishable cargo-handling center at Mumbai, besides flower auction centers at Bangalore, Mumbai and Noida. It took initiatives in restructuring its airfreight subsidy scheme, as well as, strengthened its efforts through our Embassy in Brussels, for reduction of import duty on flowers by EU.

6.16 Karnataka Agro Industries Corporation (KAIC) Auction Centre

During early 1990's Government of India declared Floriculture as thrust area for development. Having realized encouragement by the Government of India, the large number of export-oriented projects came into force during 1995 with nearly 12 hectares of polyhouse and production capacity of 18 million Rose stems per year. Since all the flowers produced cannot be of export quality, sizeable quantities of flowers intended to be sold in the domestic market. However, during 1995 there was no sizeable and organized market for modern cut flowers in India. The entrepreneurs of the floriculture units under the umbrella of association, South Indian Floriculture
Association (SIFA) also intended to develop a domestic market for Dutch Roses grown in polyhouses. The Karnataka Flower Growers Marketing and Processing Cooperative Society consisting of small growers who cultivating modern cut flowers under open field conditions were also endeavoring to develop an organized market for their flowers. During the period, the Karnataka Agro Industries Corporation (KAIC) took an initiative in setting up a separate division for floriculture in its premises to take care of the overall development of floriculture in the state including developing an organized market for modern cut flowers. A series of discussions were made among the concerned organizations, ultimately flower growers and buyers culminated in setting up an organized flower auction center with the help of KAIC in association with South India Floriculture Association (SIFA) and Karnataka Flower Growers Marketing and Processing Co-operative Society at the premises of KAIC, Bangalore. The flower auction center was inaugurated on October 15, 1995.

Initially, the flower auction was conducted only for 3 days in a week, namely on Sunday, Wednesday and Friday starting at 7.30 in the morning. From August 11, 1998 auction began to be held even on Tuesday and from December 1, 1998 on all days except Saturday. From August 14, 1999 onwards the auction started to be held in all the days in a week. The auction commences at 8.30 a.m. and also depends on the arrival of flowers from different places, closes anywhere between 11.30 a.m. and 12.00 Noon and also depends on quantity of arrivals.
Rules and Regulations

a. Auctions are held on all the days including Sunday at 8-00 a.m.

b. Only registered producers/buyers are allowed to participate in the auction.

c. Quality of the flowers is checked before putting them to the auction.

d. Auction takes place batch wise from high to low with reserve price.

e. Buyers pay the bid amount immediately after the auction and before taking delivery of the flowers.

f. Growers account will be settled on weekly basis by cheque after deducting 5% commission.

Salient Features of Flower Auction

⇒ First time in India
⇒ All modern cut flowers at one place
⇒ Transparency in operations
⇒ Regular payments to growers
⇒ Cold storage facilities
⇒ Direct buyer seller contact
⇒ Good buyer and grower base

Other Services

⇒ Consultancy
⇒ Supply of inputs such as, planting material, fertilizer and pesticides.
Right now, international flower auction centre is renovating at KAIC, Bangalore, on about 6 acres of land with modern facilities using passive architecture, energy efficient systems, solar energy utilization and automation for efficient handling of fresh flowers in association with APEDA, South Indian Floriculture Association (SIFA) and State Government. It is also proposed to start Internet auction for flowers.

6.17 National Bank for Agriculture and Rural Development (NABARD)

Besides APEDA’s role, National Bank for Agriculture and Rural Development (NABARD) is also playing crucial role in facilitating to floriculture industry in the state. NABARD is the institution, which refinances extensively for the development of the flower sector.

The prime objectives of NABARD in the state as follows:

⇒ NABARD provides refinance support for bankable projects in floriculture. The farmer, who exports is expected to meet about 25 percent of the project cost. It provides 90 percent refinance for 100 percent EOU schemes and interest is 14 percent p. a. for loans exceeding Rs. 2 lakhs. The repayment period is set out a maximum of 15 years including the repayment on holiday period. In addition to this, the Industrial Credit and Investment Corporation of Indian (ICICI) and many of the nationalized banks are also helping in financing these export projects.

⇒ Encouraging specific flower crops in intensive floricultural zones.
⇒ Making available planting materials in large scale and also necessary inputs like fertilizers and packing materials.

⇒ Encouraging organized auction centers in different intensive flower growing areas to safeguard the producers/growers and enable them to control the marketing of their products.

⇒ Creation of more awareness regarding use of flowers through media and other agencies to public and also more exposure of floriculture products during consumer exhibitions.

⇒ Encouraging florist organizations as co-operatives for more systematic functioning of domestic market.

⇒ Strengthening research facilities for floriculture to meet the requirements of local farmers.

⇒ Retailing of flowers through super markets in addition to special florist shops to encourage the consumption of flower especially in metro cities.

⇒ Promotion of interaction between growers and scientific institutions.

⇒ Effective implementation of Lab to Land Technology Transfer.

Apart from these, the state government initiated several programmes. These programmes related to area expansion programmes, creation of marketing infrastructure, assistance to growers, establishment of demonstration centers, technology transfer centres, assistance to prevent post-harvest losses (assistance to cold storage) and export promotion. In addition, several central government agencies have played significant role in promoting floricultural crops.
6.18 National Horticulture Board (NHB)

The floriculture industry has crossed the learning curve now. In the process, we shown by not only consolidate the existing industry but also support the creation of the new units based on our past experience. Those regions, which have conducive climate, may be encouraged for the promotion of these units. Norms for capital investment, which has been laid down by National Horticulture Board indicates that regions around Bangalore, Pune and foothills of Himalayas are suitable for growing flowers in greenhouses.

NHB has earmarked 200 crores for development of post harvest technology, marketing and infrastructure development. It has a scheme to advance soft loans up to Rs. 1 crore for putting up infrastructure facilities and has approved loan of 18 crores worth for 21 EOU’s. It has also allocated Rs. 10 crores for establishment of nine model Floriculture centers in J & K, Karnataka, Kerala and Maharashtra. They help in procuring and multiplication of varieties hybrids for distribution to planting materials and training of farmer entrepreneurs.

6.19 Floriculture Board

To overcome difficulties faced by the industry and new entrepreneurs, it was suggested to set up a "Floriculture Board". The board can take up the immediate needs of the industry at national and international level. Some of the important points for consideration by the board are: -

→ Status for floriculture as an industry.
→ Uniform land laws for setting up of floriculture units in different states.
→ Uniform financial policy for promotion of floriculture.
→ Development of floriculture parks in different regions with centralized facilities for production, grading, packing and marketing.
→ Establishing regional training centers for training in high tech floriculture.
→ To promote export and establish agents in major importing countries to handle Indian flowers for sale.
→ To set up laboratories and quality systems for checking of soil, water, organic matter and certify the quality of high tech product.
→ To form a nodal agency for the import of chemicals and bio control agents for actual use in different projects.
→ To negotiate with importing countries regarding import duty on Indian flowers.
→ To promote diversification in other area of floriculture e.g. Dry flowers, Fillers and Foliage, Corsage, Bouquets, Potted plants and value additions to Indian flowers.
→ Setting up of small-scale tissue culture units for propagation of elite planting material for local grower.

6.20 Indian Institute of Horticultural Research (IIHR)

Institute for Horticultural Research and Institute for Botanical Research have given another impetus to business of cultivating flowers with the establishment of the “Project for Improving Floriculture in India”.

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Indian Institute of Horticultural Research (IIHR), which was founded in 1968 at Hessaraghatta, 25 kilometers away from Bangalore was the first institute to establish a separate Division of Floriculture and Landscape Gardening in 1969 to overcome the bottleneck faced by the traditional flower growers and has done a tremendous job in evolving varieties, hybrids and cultivars of various flowers from time to time. The introduced varieties are not only high yielding, but also have highly improved quality attributes, disease resistance and are suitable for different agro-climatic zones. This also provides suitable technology for furthering the productivity levels so as to improve the socio-economic conditions of the growers.

6.21 South India Floriculture Association (SIFA)

SIFA is based in Bangalore. About 36 exporters are members of this body. Of this, 28 are involved in the pursuit of floriculture in an area of more than 200 hectares. Their organization is facilitating the growers in marketing their cut flowers and Roses by arranging chartered flights, with the support of APEDA and the Ministry of Agriculture for export of flowers to different destinations. Recently, it arranged two chartered flights belonging to Bridge-way shopping and Flight Services by paying Rs. 30 lakhs to each. About 30 tones of flowers, consisting of one million stems of Roses, were exported in these flights to Holland, USA, Japan, Singapore and Australia for meeting the requirements of Valentine’s Day Celebrations on February 14, 2000. SIFA is also helping largely the growers in fixing the base price in the auction markets located in KAIC premises. Apart from these agencies, other financial
institutions and horticulture departments are showing keen interest in promotion of sunrise sector in the state.

6.22 Agri Export Zone for Floriculture in Karnataka

The Agri Export Zone was sanctioned by the Steering Committee on 24th September 2004. The AEZ concept is considered a very effective model for promoting exports of floriculture products from Karnataka. The region covering the Bangalore Rural, Bangalore Urban, Kolar, Tumkur and Kodagu Districts of South Karnataka and Belgaum District of North Karnataka State are considered highly amenable to being developed as an AEZ for Floriculture. Subsequently, during further expansion or in the II phase of the project Chitradurga District can also be included into the AEZ. These Districts have the maximum concentration of existing floriculture units and also have suitable climate, soil, etc. for the industry. Agri Export Zone for floriculture in Karnataka entails an investment of Rs. 29.28 crores, of which Rs. 11.71 crore will come from the central government agencies, Rs. 7.37 crore from state government agencies and the remaining Rs 10.20 crore will come from the private sector. There is an anticipated incremental export of around Rs. 312 crores in the next five years. This zone will benefit around 1000 farmers apart from generating a lot of indirect employment.

6.23 State Initiatives for the Development of Floriculture

Many state governments have also started special programmes for the development of this industry. In Karnataka, Karnataka State Industrial Investment
Development Corporation Ltd. has accorded industrial status to floriculture. Karnataka Agro Industries Corporation has started floriculture auction center on the lines of Dutch Model of auction center. On the recommendation of the 1995 agricultural policy, Karnataka state amended the land ceiling act and it allowed floricultural units to acquire land by 20 units (108 acres). Flower auction centers set up by KAIC at Hebbal, Bangalore, to eliminate middlemen and ensure remunerative prices. In Karnataka, currently, SIFA is in the process of talking to Agriculture Produce Export Development Authority (APEDA) and National Horticulture Board to increase the capital subsidy for flower growers. Karnataka gives a capital subsidy of Rs. 30 lakh each to flower growers.

After documentation of infrastructure, it is observed that it is not sufficient for rapid development of sunrise sector, because the development of infrastructure is in infant stage, hence, the hypothesis framed in the thesis has been proved.