

BUSINESS PLAN (2017-2021) OF
CENTRE OF EXCELLENCE FOR FLOWERS & VEGETABLES
JEEDIMETLA, MEDCHAL-MALKAJGIRI, DIST., TELANGANA STATE

Wealth to the Farmer Health to the Nation

MISSION FOR INTEGRATED DEVELOPMENT OF HORTICULTURE
(SUB SCHEME – SHM)

DEPARTMENT OF HORTICULTURE
GOVERNMENT OF TELANGANA



Entry Plaza of the CoE, Jeedimetla



Aerial view of the CoE, Jeedimetla

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1. Executive Summary

Centre of Excellence for Flowers and Vegetables is a horticulture institute located in Jeedimetla of Medchal- Malkajgiri district (erstwhile Rangareddy district) in the outskirts of Hyderabad, setup by Department of Horticulture, Government of Telangana in the year 2014-15 to address the growing demand and supply gap in vegetables through meeting the requirement of standardized technologies suitable for Telangana, building the capacities of farmers through trainings and running a demonstration centre with latest protected cultivation technologies and supplying quality vegetable seedlings to needy farmers. Located in 10.5 acre plot, the CoE strives to be a best Centre of Excellence in the country by meeting the needs of farmers and earning reasonable profits out of its operations. By leveraging a well thought out business plan under the guidance of a visionary leadership executed by a highly skilled management, the Centre of Excellence will generate about Rs.1590 Lakhs of revenue during the next five years.

Products: The training programs will be conducted in the latest state of the art training center equipped with audio-video based learning methodologies, lectures by specialists and practitioners followed by practical on hands experience in the demonstration site at COE. The demonstration centre with latest protected cultivation technologies will produce cut flowers which are in huge demand in the local markets of Hyderabad & other metros. The vegetables produced in the demonstration centre will be sold in the local whole sale market to play its part in catering to 75 lakhs residents of Hyderabad city. The latest high-tech green house nursery based vegetable seedling production unit is dedicated to provide quality seedlings to farmers using specified technical parameters and will aim to lead the nursery industry that is flooded with low quality seedlings causing misery to the farming community.

Markets and Customers: Centre of Excellence through it's products and services caters to the requirements of enterprising farmers in the state of Telangana addressing need for knowledge and expertise on the latest protected cultivation technologies. The vegetable seedlings produced at the centre will meet the requirements for quality vegetable seedlings of vegetables growers in Telangana competing with private nurseries supplying vegetable seedlings by supplying quality seedlings offering at competitive rates. The vegetables and flowers produced at the Centre of Excellence will be sold in the local metro markets competing with cut flowers products from Bangalore, Maharashtra etc., that usually floods the Gudimalkapur and other markets in Hyderabad city.

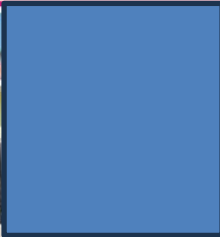
Management Team: The Centre of Excellence will be led by a dedicated team of horticulturists armed with technical expertise in horticulture in general and protected cultivation technologies in particular with many years of administrative and managerial experience. The horticulture expertise and managerial experience will be put to maximum use during the production and marketing operations of the CoE and its products and services catering to the requirements of enterprising farming community of Telangana.



Financial Plan: To deliver these plans the Centre of Excellence will require about Rs.1236.45 Lakhs over the next five years at an average of Rs.247.29 Lakhs per year and the infrastructure investments were already financed by MIDH and support through state plan & other sources. Such a financial spending will generate about Rs.1595.8 Lakhs of revenue during the next five years generating about Rs.319.16 Lakhs of revenue per annum earning a Gross Profit of Rs535.10 Lakhs (33.53%) or Rs.107.02 Lakhs per annum enough to meet the administrative and managerial expenses of the Centre of Excellence and a profit after tax of Rs.359.34 Lakhs (22.52%). Such a financial plan will help the centre to run the activities on its own funds and expand its operations in future to meet the growing demands of farming community in Telangana state.



**Farmers Training at CoE
(05-10-2016 to 07-10-2016)**



2. Background

The total cropped area under Horticulture crops with 7.39 Lakh hectares constitutes 22% of the net sown area of Telangana state. Within horticulture crops fruits, vegetables and spices constitutes close to 95 percent of the area. However, the productivity levels of vegetables around 17 MT per Ha is lower when compared to southern state like Tamil Nadu which had recorded productivity levels of 30 MT per Ha. Government of Telangana is making serious efforts to promote productivity of horticulture crops to bridge the demand supply gap for vegetables and to provide maximum returns to the farmers & generate employment. Promotion of protected cultivation of vegetables and standardization of package of practices of specific targeted crops and developing low cost technology encouraging farmers to take up poly-houses even on small holdings are the priority intervention areas. Hon'ble Chief Minister has announced the scheme for construction of Green Houses in 1000 Acres every year. Facilities for demonstration of the proven technologies are not available in the State. Hence, to address the above issues a Centre of Excellence for Vegetables & flowers was proposed in Jeedimetla village of Medchal (erstwhile Rangareddy) District.

It is proposed that the Centre of Excellence will be financially self-sustaining earning revenue to finance the activities at the Centre through production and sale of high quality seedlings of vegetables, train prospective and enterprising farmers, willing to take-up cultivation of flowers and vegetables in poly house, through both latest audio-video based class room lectures and interactions with the specialists and practitioners of poly-house technologies and protected cultivation practices followed by field demonstration of the same at the Centre of Excellence raising the vegetables and flower using the same technologies and finally selling the flowers and vegetables so produced in the local / international market and earn income to CoE. It is also proposed that the centre, with proper landscaping and branding will turn itself into a potential horticulture tourist place and museum educating the visitors and meeting their aesthetic sensibilities as well. It is proposed that Center of Excellence will have a Green Belt surrounding it showcasing introduction of urban horticulture in Peri-Urban areas. The following is a report on the proposed activities at CoE for the period 2017- 21 along with the financial plans and projections to meet and finance the activities for the approval of management of Mission for Integrated Development of Horticulture (MIDH), Department of Agriculture & Farmer Welfare, Government of India.

2.1 Project Background:

The Centre of Excellence (CoE) to Telangana was sanctioned by GoI during 2014-15 Technical support for CoE provided by CeV, Department of Horticulture, Govt. of Haryana. The main objectives of CoE are:

Infrastructure development for demonstration and trainings to the farmers.

Standardization of technologies suitable to Telangana State to make the farming more remuneration and profitable.



Timely supply of quality vegetable seedlings for enhanced production through high tech green house technology

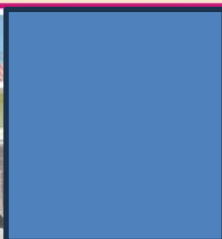
To plan accurate crop scheduling and promote multiple crops per season per unit area.

Government of India sanctioned Rs.920 Lakhs under MIDH annual action plan 2014-15 and so far Rs.1239.68 Lakh was spent on creating infrastructure at CoE with additional funding from State Government.

The physical infrastructures planned at the centre include the following.

An over view of the Activities planned at the Centre

S. NO.	Item	Unit Size (Sqm)	Total No. of Units	Area (Sqm.)	Crop Proposed
A. Protected Cultivation Structures					
Jeedimetla					
1	Hi- tech Greenhouse with fan and pad	2000	1	2000	Production of Seedlings
2	Naturally Ventilated Poly House (NVPH)	2016	3	6048	Gerbera, Tomato, Color Capsicum, Cucumber & Orchids
3	Walk-In Tunnels	500	6	3000	Cherry Tomato, Cucumber, Lilliums, Filler plants (Blue daisy, Limonium, Gypsophylla), Strawberry, Lettuce & Broccoli.
4	Poly Net House	2000	1	2016	Gerbera
5	Net House	2000	1	2000	English Vegetables (Celery, Broccoli, Lettuce and Red Cabbage), Leafy Vegetables and Coriander
6	Naturally Ventilated Poly House	1008	5	5040	Gerbera, Carnation, Roses & Orchids
S.Total			17	20104	
Public Gardens					
1	Walk-In Tunnels	500	2	1000	Lillium/ English Vegetables
2	Poly Net House	1920+ 1280+ 1344+ 1344	4	5888	Gerbera
S.Total			6	6888	
Grand Total			23	26992	
B. Civil Structures					
Administrative Block, training facility with hostel, Pack houses, Cold storage unit, Ripening chamber, Sale outlet, security room, canteen, compound wall, entrance arch, internal roads and pathways and Central lighting system with solar power.					



2.2 Project Objectives and Strategies

The main objective of the project is to have a best Centre of Excellence among all CoEs in the country addressing the needs of farmers in Telangana state and a financially self-sustaining institution. The following strategies will be adopted for making COE into a self-sustaining institution.

- A. Sale of Pluglings of vegetables /turmeric produced at the Hi-tech green house.
- B. Sale of produce i.e., vegetables and flowers produced in the CoE.
- C. Raising of ornamental plants in the available open space and central media and their utilization as mother plants for multiplication and sale.
- D. Conducting In-house training programs for farmers, students and officials from all over the country on payment basis.
- E. Developing the project as a Horticulture-tourism hub by incorporating suitable landscape architecture.

Part-I will provide a brief overview of the report in executive summary section and a brief introduction in Part-II. Part-III will present the products and services offered at the CoE to meet the growing needs of customers in markets in and around Hyderabad, India and abroad detailed in Part-IV. The organization of business processes at CoE is presented in section V and technical and managerial human resources managing the CoE is presented in Part-VI followed by environmental and social influences and how they are addressed is detailed in Part-VII and finally the financial plans of the project is presented in Part-VIII and conclusions at Part-IX followed by an Appendix at Part-X

3. Products and Services

Centre of Excellence aims to produce three different sets of products & services addressing the needs of farmer clients targeting the vegetables/flower market and details about same is presented below under the heading of production & sale of vegetables and flowers, production & sale of quality vegetable seedlings and building knowledge and skills among potential entrepreneurial farmers on the latest technologies in vegetables and flower production by classroom session backed up with demonstration of the technologies at CoE.

3.1 Supply of Quality Plant Material:

Hi-tech Green House seedling production nursery was established in an area of 2000 sq M with the main objective of supplying genuine true to quality character vegetable seedling material to progressive farmers aiming at gaining highest productivity and production and ultimately doubling or trebling of farmers net income as well as production of good quality disease free yields to the satisfaction of the customers making them eye-catching. The produced seedling will always be pest and disease free with good characters as specified by the certified seed companies.



a) Hi-tech-Green House Nursery:

Hi-tech-Green house nursery is like a mother womb where all the pre-delivery precautions and nutrients supply will be taken up so that the born baby will be very health and had lot of vigor and the same is with high tech green nursery as the seedling production will be taken up with all the necessary precautions to produce seedling which are free from pests and diseases and deliver it to the farmers. The seedling behavior will be over and above the varietal characteristics specified and at times achieves good quality and good quantity yields which in turn helps the farmers to get good market price and good income to the farmer.

The machinery involved in Hi-Tech Green House will be 1.Fan and Pad system; 2.Totally automated irrigation and fertigation; 3.Germination chamber; 4.seedling machine; 5.portrays. Either CoE or farmers procure F1 hybrid seeds which are sown in portrays with coco peat medium by using auto mated seeding machine with a capacity of 1 lakh seedling per day of 8 hours. These portrays will be shifted to Hi-Tech Green House where the seeds will be supplied with required amount of irrigation and fertigation by using boomer irrigation system and fan and pad cooling system. As and when the seedlings are ready for transportation based on the crop variety, they will be supplied to the farmer field.

Actual seedling Production will be carried out in two ways.

b) Farmer seed-to- seedling production:

In the earlier case farmer will feed the vegetable seed varieties of his choice and handover to CoE technical person by paying advance amount @ Rs.1.0 and he will indicate the date of lifting to the CoE technical person. Accordingly, seedling production will be carried out and the same will be intimated to the farmer after the seedlings are ready for transplantation. Farmers come to COE and pay the balance amount of Rs.10 to the CoE and lift the seedling as per his earlier indent. The seedling transportation will be carried out in two ways-own transports by the farmer or the produced seedling will be packed in specified container and will be handed over to the farmers and farmer may make his own arrangement.

c) Centre of Excellence to farmer seedling production:

In this case the CoE after packaging the seedlings dispatch them to the farmer site by charging actual transportation cost to the farmer.

The production capacity of Hi-Tech Green House is 5.32 lakh seedlings per cycle and the average production capacity will be around 42.56 lakhs per year. The seedling production will be dependent on the crop season and demand for the same during early Kharif, Kharif and early Rabi and later Rabi and Early Summer and Summer and 70 percent of the seedling production will be done. The remaining 30 percent will be taken care in the off season that too based on farmer demand.



3.2 Production and Marketing of Selected Vegetables/Flowers:

A total of 20 different flowers and vegetable crops will be grown on the demonstration structures. A brief of the important crops is presented below.

1. Gerbera:

Gerbera (*Gerbera Jamesonii*) is an important commercial cut flower crop, Gerbera is also commonly known as the African Daisy, ideal for beds, borders, pots and rock gardens. There are about 600 varieties like Intense, Goliath, Silver star, Duna Ella etc. The flowers look fresh and cheerful. Gerbera stands for spontaneity, activity, cheerfulness, strength and togetherness, thereby uniquely suited for Indian weddings! A very special flower that deserves a prominent place on every retail floor and in every living room, Gerbera brightens up any interior, emotion and event, throughout the four seasons, due to its rich range of colors. It is 24 to 30 weeks crop and the first flower produced after the 7-8 weeks after plantation. The crop yields 2 stems / plant / month. Harvest starts from 3rd month of planting and continue up to 3 years under greenhouse condition, 175 – 200 flowers per square meter per year can be obtained.

2.Orchids:

Dendrobium, belonging to family Orchidaceae, is the largest genus of orchids. Most of the Dendrobium species are epiphytic and adapt to a wide range of habitats. The truly spectacular flower spikes add a sophisticated touch and become the focal point in any indoor décor. Dendrobiums can adapt themselves to a wide range of climatic and topographic conditions, varying from hot, wet lowlands to high altitude colder regions. The genus prefers bright light to produce quality blooms. Varieties include Sonia 17, Sonia 28, Emma White, Sakura Pink. Number of plants per acre is 45000. Needs repotting every 2-3 years and Yields are between 8 to 10 spikes per plant per year.

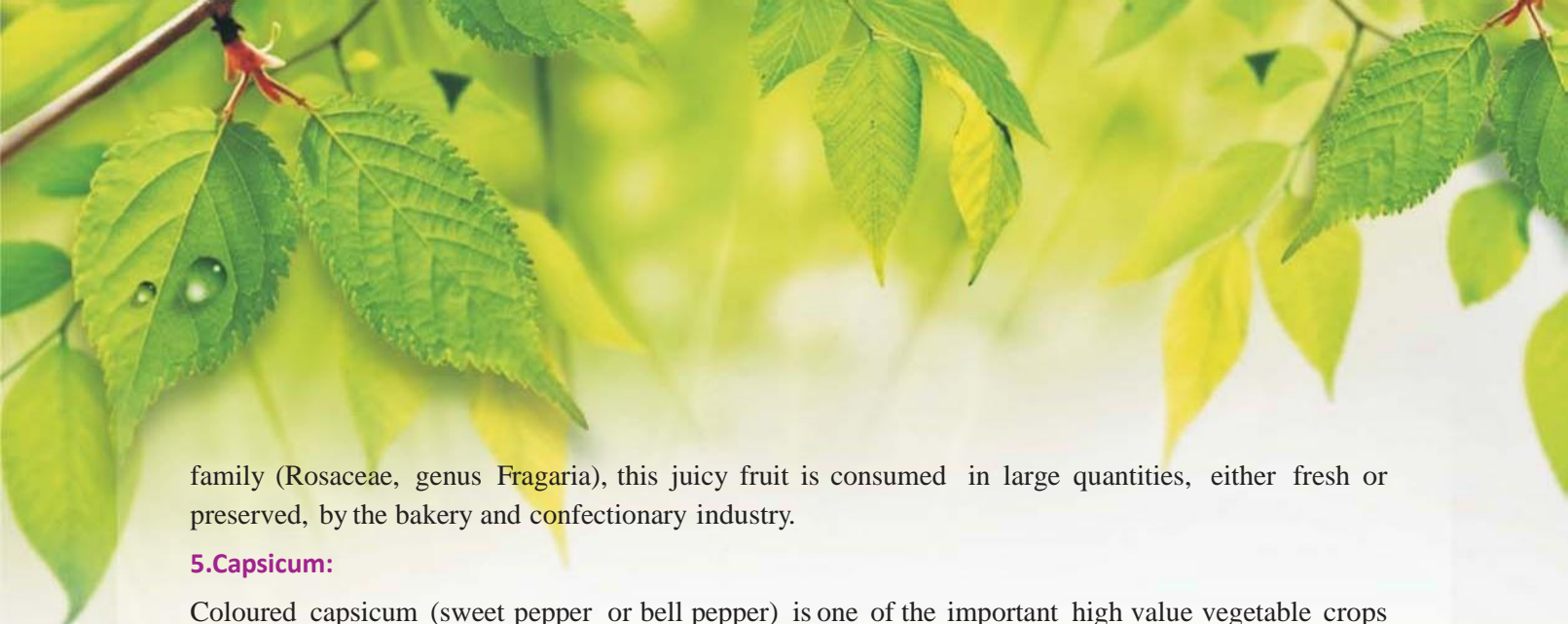
3.Gypsophylla:

A member of the Caryophyllaceae family and also known as 'Baby's Breath', Gypsophylla is commonly used worldwide as a filler in the floristry trade. Its inflorescence, comprising numerous tiny, flower heads of white, pink or pale cream, creates a softening effect, when used with bright coloured cut-flowers in floral arrangements. Well adapted to a wide range of soils, it can be commercially grown in greenhouses. Planting density is between 6-8 plants per square meter or alternatively 40,000-50,000 plants per hectare. The flowering flush will start about 3 months after planting / pruning, depending on the variety and the geographical and physical location of the crop. The number of flushes is 350,000 to 500,000 branches per flush per hectare. Commercial flowering flushes per year is 2 to 2.5 or a total of 7,00,000-10,00,000 flowers per hectare per year.

4.Strawberry:

The Queen of Fruits', Strawberry is a highly nutritive, heart-shaped delight. A member of the Rose





family (Rosaceae, genus *Fragaria*), this juicy fruit is consumed in large quantities, either fresh or preserved, by the bakery and confectionary industry.

5. Capsicum:

Coloured capsicum (sweet pepper or bell pepper) is one of the important high value vegetable crops cultivated in green houses. It is rich in vitamin-A, C and minerals. Capsicum cultivation is very popular in Peri-Urban production systems because of easy access to urban markets like Bangalore, Hyderabad and Pune. The quantum jump in yield and the superior quality makes it an economic and eco-friendly produce to grow capsicum in a naturally ventilated green houses round the year. Harvesting of capsicum fruits starts from 60 days of planting in case of green colour capsicum, 80-90 days in case of yellow and red fruited hybrids. Harvesting continues up to 170-180 days at 10 days interval in green and up to 200-250 days in red and yellow in a green house, the yield range is from 100-120 tonnes per hectare. It is sold between Rs.80 to 150 per kg depending upon the colour, quality and season etc.

6. Cucumber:

Cucumber (*Cucumis sativus* L) known as Kihra in Hindi is an important summer vegetable commonly grown throughout India. Cucumber is used as salad, as pickle and also cooked vegetable. It has a cooling effect, prevents constipation, useful in jaundice and seed have number of ayurvedic uses. Variety include multistar. Harvest may begin 50 to 65 days after planting. Average yield is between 6 to 8 Kg per plant.

7. Tomato / Cherry tomato:

Tomato (*Lycopersicon esculentum*) belongs to the genus *Lycopersicon* under Solanaceae family. It is one of the most versatile vegetable with wide usage in Indian culinary tradition. Tomatoes are used for soup, salad, pickles, ketchup, puree, sauces and in many other ways. It is also used as a salad vegetable. Tomato has very few competitors in the value addition chain of processing. The varieties which are preferred for cultivation under polyhouse are Tomato include Himsona, Himshekha, 34774 etc and cherry tomato include Olleh, Raisy etc. The harvesting of tomato fruits start from 90 days after transplanting. The total crop period for tomatoes is 8-9 month after planting. Under polyhouse condition from well maintained tomato crop average 30 kg/m² or 10 kg/plant of marketable fruits are obtained

8. Rose:

Rose may be used as cut flowers and garden plants. They may also be used in making rose oil, rose water and gulkhand. Roses as cut flowers have an important place in preparation of bouquets, floral arrangements, worship, social occasions and presentation of gifts. Measured in terms of volume of trade in the international market cut roses rank first in popularity. Variety include Hybrid Tea Roses that have large flowers (4 cm.) long stems (125 cm). Yield varies from 100-200 stems/sqm. Hybrid Teas fetch



higher price than other types. A few well known varieties of this group are Sonia, Vivaldi, tineke, melody, darling, and only love.

9. Carnation is an important flower crop having great commercial value as a cut flower due to its excellent keeping quality, wide array of colour and forms. Carnation, apart from producing cut flowers, can also become useful in gardening for bedding, edging, borders, pots, and rock gardens. Harvesting starts from 120 to 160 days from the date of plantation. The standard carnation produces 200 cut stems (approx.) per square meter annually.

3.3 Knowledge and Skills Building of farmers:

Department of Horticulture has training facility at Horticulture Training Institute (HTI) located at Lakdikapul, Hyderabad with required facilities to run residential training program including training hall with state of the art audio video facilities including projector, residential hostel for trainees with dining facility and a library for reference. Further the CoE has training center with hostel facility and a library along with demonstration sites within CoE on poly houses, polynet houses, shade net, Walk-in Tunnels etc. The training centre has manpower to manage the training program of 5 day program, 3-day program and 2-day program and provides field/site visits as part of its programs. The training facility will provide all the knowledge and skills required by the prospective polyhouse entrepreneurs as well as specific topic wise details as required by previous trainees as well as other stakeholders like government officials, bankers and private companies dealing with poly-house technologies. Open cultivation of Vegetable/ flowers/spices and Organic cultivation etc.,

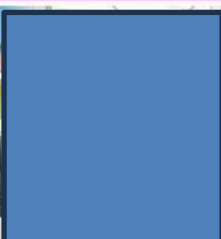
4. Markets and Clients

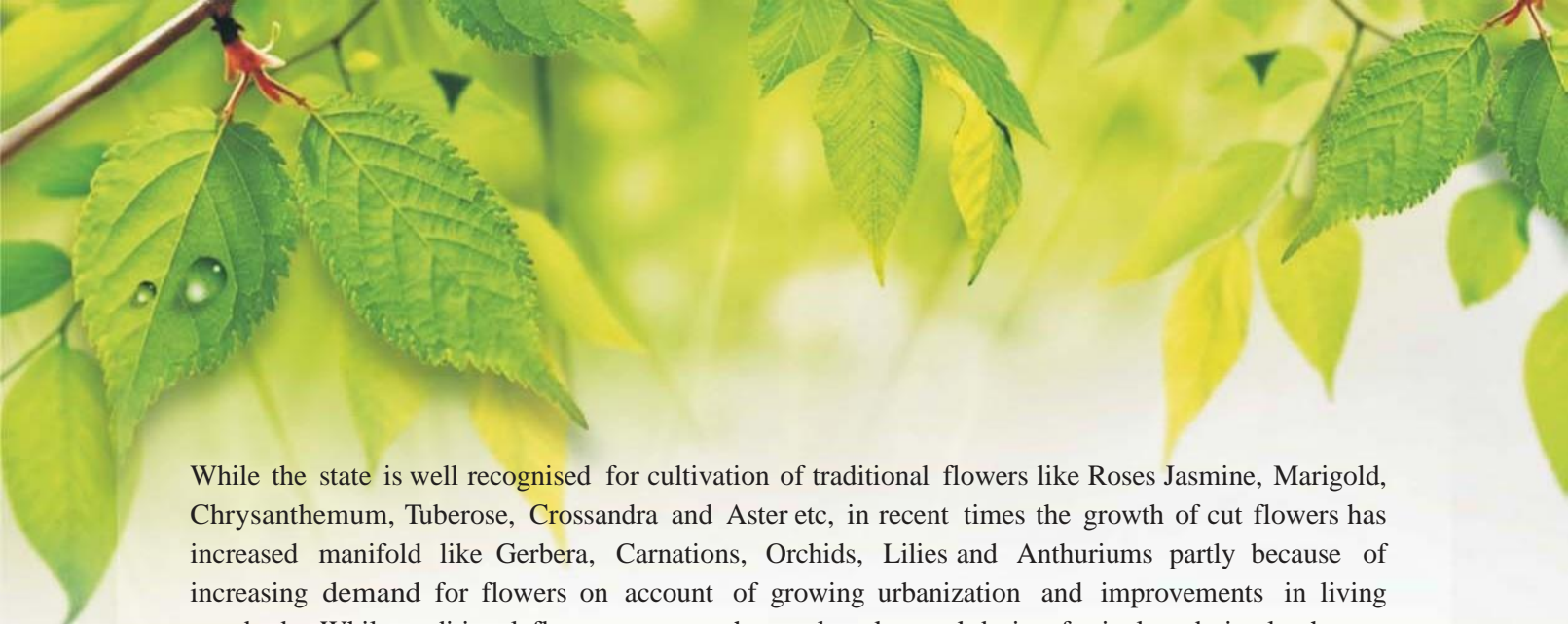
Centre of Excellence through its products and services aims to address the needs of farmer clients targeting the vegetables/flower markets and details about the client base and targeted markets are presented below under the heading of production & sale of vegetables and flowers, production & sale of quality vegetable seedlings and building knowledge and skills among potential entrepreneurial farmers.

4a) Production and Sale of Vegetables and Flowers

Market Potential:

Telangana State is among the leading producers of horticulture crops including flowers. Both the area and production of flower crops in the state reveals that during 2014-15 while nearly 672.91 thousand hectares of area is under cultivation of horticulture crops producing 8832.11 thousand MT of produce out of which 179.66 thousand MT (26.6%) is the area under vegetables crops producing 3005.33 thousand MT of produce followed by 7.44 thousand hectares (1.1%) under flower crops producing 21.71 thousand metric tons of loose flowers and 6.01 thousand MT of cut flowers.





While the state is well recognised for cultivation of traditional flowers like Roses Jasmine, Marigold, Chrysanthemum, Tuberose, Crossandra and Aster etc, in recent times the growth of cut flowers has increased manifold like Gerbera, Carnations, Orchids, Lilies and Anthuriums partly because of increasing demand for flowers on account of growing urbanization and improvements in living standards. While traditional flowers cater to the market demand during festivals and rituals, the cut flowers are used for decorations, preparation of bouquets. Utilising the subsidized provision of protected cultivation technologies like polyhouses, the enterprising farmers in the vicinity of Hyderabad city are partly meeting the growing demand for cut flowers. There are roughly about 200-250 farmers growing horticulture products including flowers using the Polyhouses and meeting the increasing demand for cut flowers. Considering the potential for flowers in general and cut flowers in particular, there is huge untapped market potential that will be targeted by the CoE through training farmers on latest protected cultivation technologies and supporting them to grow loose and cut flowers.

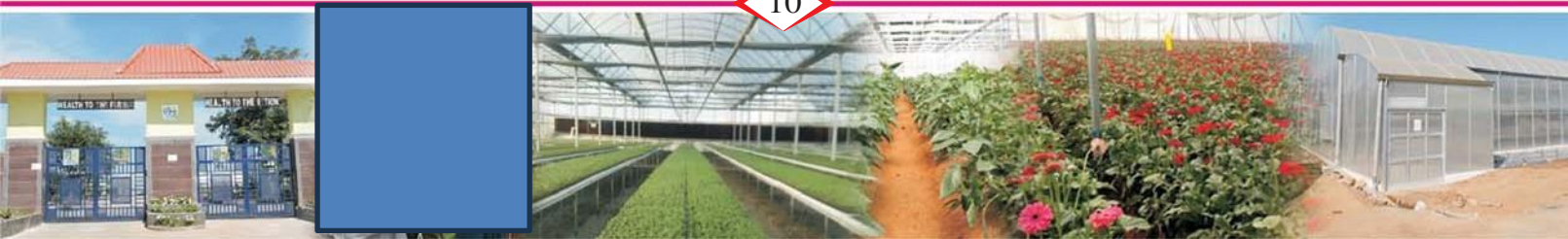
Growth of Market Demand:

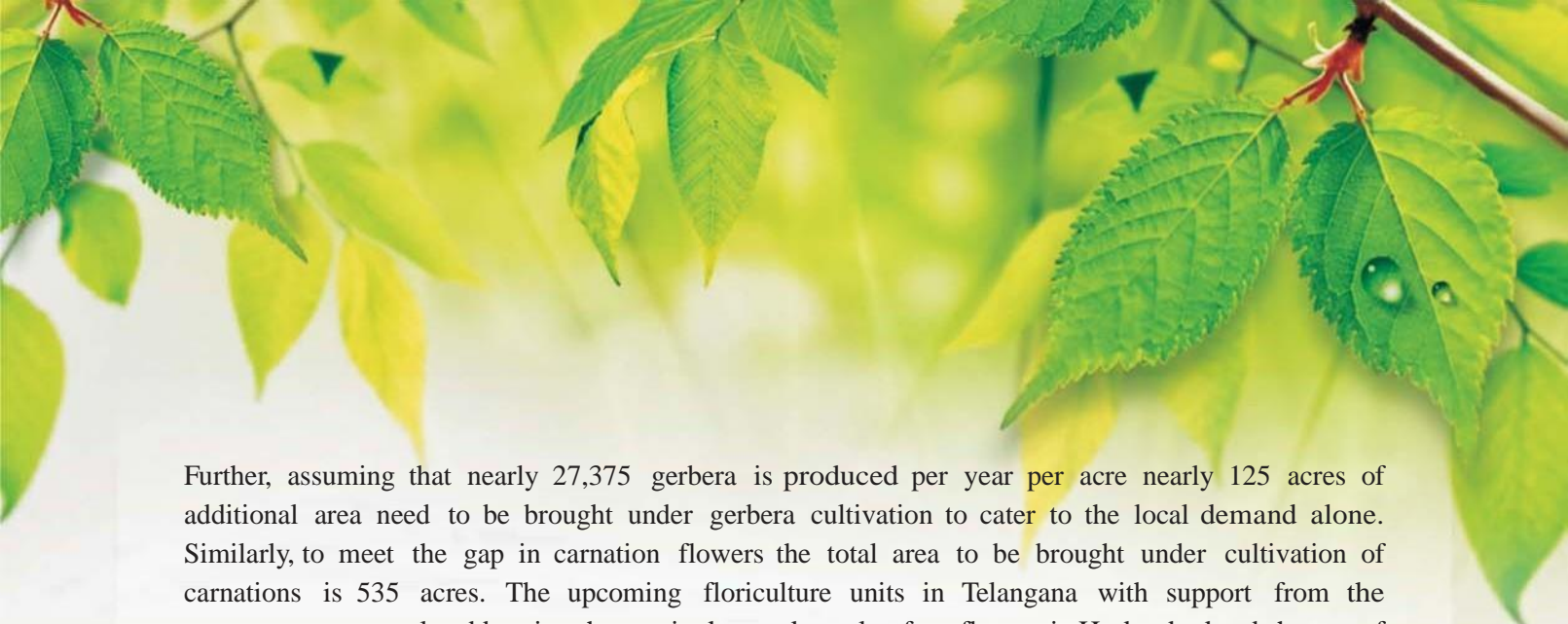
Growth of floriculture in Telangana is attributed to the increasing consumption of flowers in the state especially in Hyderabad and Secunderabad. With the increasing growth of Hyderabad Urban Agglomeration (HUA) and the increasing practice of flower decorations for marriages and other functions and growth of business and hospitality industry etc, there is scope for further increase in the demand and thus production of cut flowers will be in short supply comparing to demand in the near future.

It is estimated that there are around 180 auspicious days per year during which maximum functions take place and during these days on an average nearly 750 events happen in the city on each day and the consumption of 10 flowers/10 stems each is roughly around 300 Gerbera and 70 carnations. The total demand for the flowers/stems is roughly around 405 lakh bunches of flowers/stems of Gerbera and 94.5 Lakh carnation flowers and a total demand of 500 Lakh bunches of flowers/stems.

Supply of Vegetables / Flowers:

There are roughly around 200 to 250 farmers growing flower using the protected cultivation technologies of polyhouses. Each of these are roughly of around 1000 Square Meters. Many of them produce Gerbera followed by carnations. Assuming that nearly 70% of the growers produce Gerbera and the rest 30 percent produce carnations, with a yield per annum of 27,375 bunches (of 10 flowers/stems) in the case of gerbera and 15,000 bunches (of 10 flowers/stems) in the case of carnations, the total production of gerbera per year is 39.69 Lakh bunches and 3.75 Lakh bunches of carnations together producing roughly around 43.44 Lakh bunches. The total production from around Hyderabad is meeting only less than 10% of the total demand from Hyderabad city.





Further, assuming that nearly 27,375 gerbera is produced per year per acre nearly 125 acres of additional area need to be brought under gerbera cultivation to cater to the local demand alone. Similarly, to meet the gap in carnation flowers the total area to be brought under cultivation of carnations is 535 acres. The upcoming floriculture units in Telangana with support from the government are partly addressing the gap in demand supply of cut flowers in Hyderabad and the rest of the demand is met through flowers coming from Maharashtra and Karnataka. The Centre of Excellence with its supply of Gerbera and Carnations will meet a small fraction of the market and there will not be a dearth of market for the flowers produced by Centre of Excellence.

Major Flower Markets in Telangana:

The famous flower markets in Hyderabad are Gudimalkapur market near Mehdipatnam and the market near Jambagh area in Mozamjahi market. While the Gudimalkapur market opens at 4 AM in the morning with farmers from nearby mandals come to sell the flowers and various stakeholders from different parts of Hyderabad come to purchase. It is estimated that nearly 120 to 150 local wholesalers come to the market to make transaction out of whom 10 to 15 are the largest players controlling the market. During peak season, flowers were sold between Rs.2 to Rs3.5 per stem in case of Rose, Gerbera, Carnations and between Rs 4 and Rs.6 per stem in the case of Anthurium and special Hybrid Roses. However during lean season, the price goes down to Rs0.5 to 1.5 per stem. There are roughly around 400 to 500 small and large retail flower sellers in Hyderabad who purchase flowers from the commission agents and wholesalers and in turn sell the flowers to consumers charging anywhere between Rs. 10 to 25 per bunch and Rs 20 to 5 per bunch depending on season and quality of flowers. Fluctuations in the prices is a norm in the flower marketing because of irregular supply, quick deterioration of flower quality and fluctuations in demand for flower on account of marriages, functions, festivals and other rituals.

Business Tie-ups with Vendors and Wholesalers:

CoE will enter into business tie-ups with vendors and wholesalers in Hyderabad City and other places in Telangana and Andhra Pradesh and meet their demand for flowers, vegetables.

Sales Counter at CoE:

CoE has set up a sales counter at the entrance gate where all the materials required for bouquet making are made available as an all in one stop shop along with sale of flowers, vegetables and seedling produced in the centre to cater to the demands of local community and walk-in customers.

Pricing:

As the production of CoE will be small compared to the turnover of flowers and vegetables in the market, CoE will be selling the products at the prices prevalent in the market and shall charge the same at its sales counter as well.



4b) Production and Sale of Quality Vegetable Seedlings

Market Potential:

Telangana state with an area of 1.20 Lakh hectares of area under vegetable crops constituting 2% of the total area under vegetables in India is making efforts to increase the area under horticulture crops including vegetables. Govt of Telangana state is making effort to promote growth of vegetable cultivation addressing the production and marketing constraints faced by the farmers through provision of agri-business infrastructure and subsidized provision of farm level infrastructure and machinery. As a result both the area and production are likely to increase and with that the demand for seedling is likely to grow in future.

Growth of Market Demand:

In this regard key role has to be played by the concerned department officers of the major vegetable growing pockets. These officers/ field staff will motivate and convince the farmers to purchase high quality seedlings produced by CoE and place an indent - crop wise and month wise- to CoE that how many number of farmers will require how many no of seedlings in their jurisdiction. Based on such information, the nursery officer indicates number of seedlings that farmer will give seed and no of seedling for which CoE has to procure seeds. Based on the data procured from horticulture officers, the day wise action plan will be prepared by CoE in charge and necessary seedlings production will be carried out.

Potential Customers:

As CoE is aiming at production of 41.60 Lakhs seedling per annum and the entire 42.56 Lakh seedling will meet only of 500 acres of area as against the total vegetable cropped area of 1.2 Lakh hectares in the state. As this is the first **HITECH-GREEN HOUSE** nursery producing for both Telangana and Andhra Pradesh, the competition from local vegetable producing nurseries using non-technical and traditional methods of production with high pests and disease occurrence and week seedling resulting in a reduced production of up to 70 percent of potential will be highlighted during interaction of horticulture officers with farmers.

CoE is expecting the demand to rise in future along with foreseen demand for vegetable seedlings. CoE will utilize the working area of high-tech green house to produce a total of 60 Lakh seedling per annum and capacity will not be a constraint for production of seedlings.

Pricing of Seedlings:

The CoE will use competitive pricing as there are private nurseries providing seedling anywhere between Rs 0.40 to Rs.0.50 paise per seedling. Utilising the subsidy component of Rs.0.50 per seedlings and with a cost of production of Rs.0.66 paise, it is possible that vegetable seedling can be sold close to the market rate and ear a reasonable profit.



4c) Knowledge Services through trainings-cum-demonstration Centre

Market Potential:

Horticulture crops occupy an area of 7.39 Lakh hectares in Telangana State constituting around 20% of the net sown area. Promotion of horticulture crops is priority area for government of Telangana and Agriculture department in general and horticulture department in particular was building awareness among farmers & motivating farmers to take up horticulture crops. The major strategy for awareness building and motivation of farmers, apart farm extension campaigns, is through training and demonstrations. The targeted population for the campaigns is farmers willing to adopt new technologies. With these efforts, the area under horticulture crops is likely to increase. Further with the latest protected cultivation technologies being promoted by the government, the market potential for training and capacity building is huge.

Growth of Market Demand:

The private companies, involved in the business of farm input supply and the latest protected cultivation technologies, are offering technical expertise to farmers as part of their marketing strategy but the comprehensiveness of the technical expertise is limited to selling their products & services. Consultancy firms and private individuals offering their services in agriculture is very limited and caters to limited segment of large farmer. Vast majority of the farmers rely on public agencies and government departments for meeting their knowledge requirement. The programs like Rashtriya Krishi Vikas Yojana (RKVY), Pradhan Mantri Krishi Sinchayee Yojana (PMKSY), Agriculture Technology Management Agency (ATMA) and Mission for Integrated Development of Horticulture (MIDH) and Telangana State Micro Irrigation Project (TSMIP) etc has training as a key component of the programs. Further, the promotion of protected cultivation technology adds to the growth of market demand for training and capacity building services.

Potential Customers:

Centre of Excellence will offer training services in the areas of poly-house technologies; latest production technologies of flowers and vegetable cultivation, irrigation and fertigation technologies, post harvest technologies and market analysis and programs & schemes having similar objectives and focus on the above technologies may be encouraged to have their clients trained through CoE as it not only uses class room based training but also provides one/two day field visits to the demonstration sites based at CoE. Further, the beneficiaries who had already adopted poly-house technology and farmers who are planning to use the poly-house technology will be targeted. Further, all the staff of agriculture and horticulture department along with other stakeholders like staff of banks and private companies involved in poly-house technology will be targeted for the training program.

Further, Horticulture department is engaged in promoting cultivation of horticulture crops through providing Micro Irrigation infrastructure, Protected cultivation technologies of horticulture crops, farm



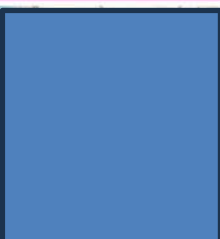
inputs including seedlings on subsidy along with dissemination of latest technologies and capacity building programs. The department has its own infrastructures both at the state head quarters and in the state farms located in different part of the state. Given the nascent nature of adoption of protected cultivation, there are many areas where in proper training and capacity building is required to the farmers, department officers and other stakeholders.

Pricing of Training Programs:

The training programs will be offered at the lowest possible cost i.e., cost of delivering the program. By deploying a low cost model of training programs, CoE will charge an average price of Rs.1,000/- per day for the training programs (See annexure-1.2). By showcasing the human resources, demonstration centers and by tapping the training components of the flagship program of GOI and Government of Telangana state, the CoE will meet its training targets.



Visit of APC & Secretary to CoE (05-08-2016)



5. Business Operations and Organisation:

5.1 Location of the Project:

The Centre of Excellence is located in Jeedimetla of Medchal district (earstwhile Rangareddy district) is in the outskirts of Hyderabad city. Most of the operations will be taken up at Jeedimetla site along with the space available in Public Gardens in Hyderabad. Hyderabad being the state capital of Telangana State and also state headquarters of the Department of Horticulture and being the centre of flower and vegetables markets in the state, the site is suitably located.

5.2 Marketing and Sales:

The fruits and vegetables produced by CoE will be sold in the local market of Hyderabad. CoE will also target the sales at other potential markets locations outside the state like Mumbai, Bangalore etc through the local wholesalers and vendors. The seedlings will be marketed in the select vegetable growing pockets of Telangana where vegetables were grown in the state through horticulture officers of Department of Horticulture at these specific zones.

Further, a detailed training calendar will be prepared and proposed training programs will be informed in advance to the district and mandal level officers of the Department of Agriculture, Department of Horticulture and other special schemes of the relevant departments. The beneficiaries of shadenet/polyhouse scheme of Government of Telangana that aimed to reach 1000 acres per year, has training component and the same will be tapped and the program will be done at the CoE.

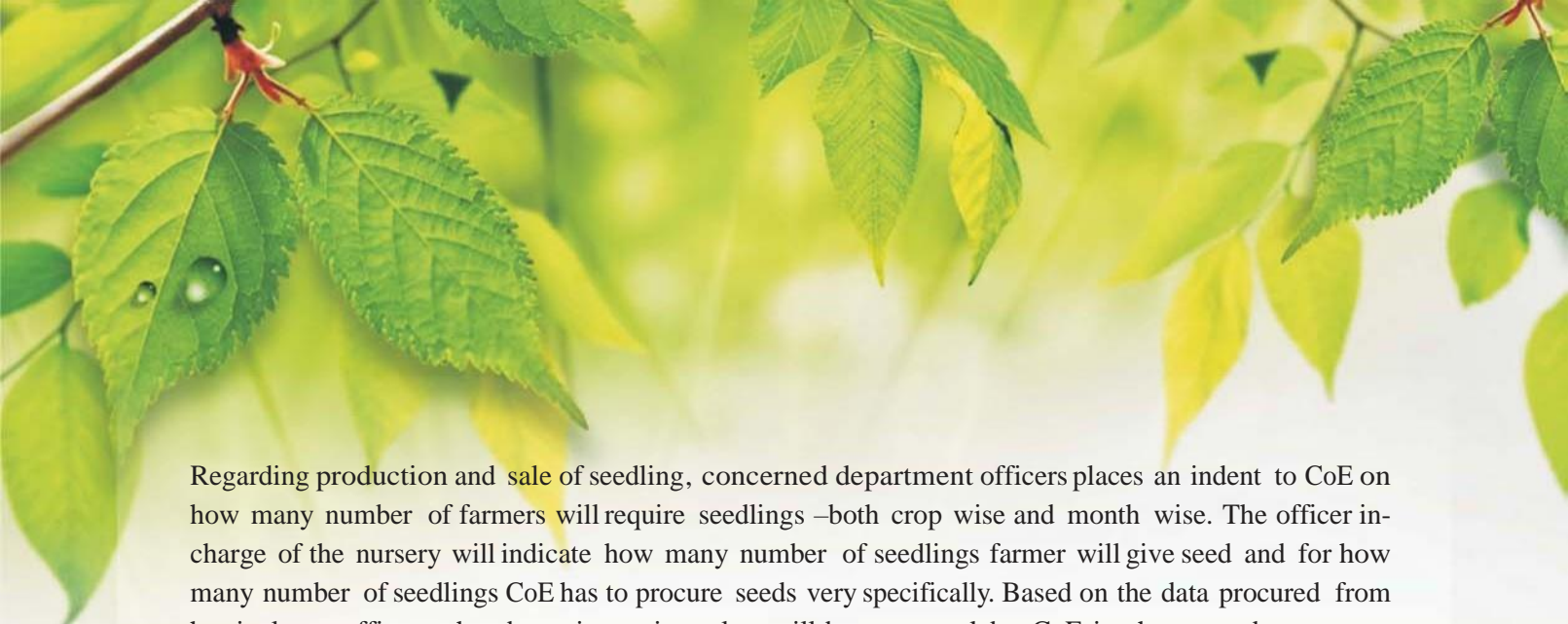
5.3. Production and Distribution:

The production of fruits and vegetables as well as vegetable plug in seedlings will be done under the technical guidance of designated specialists of the Centre of Excellence (CoE) supported by technical manpower allocated for carrying out the operations and will be produced as per the technical specifications. The training programs will be designed after due consideration of the farmers needs assessment, technical inputs from specialists and practitioners and after thorough review of similar training manuals available in the subject area. These manuals and training programs will be developed keeping in mind the literacy levels of the target farmer population and will use audio-video base delivery mechanisms, class room interactions with specialist and practitioners followed by site visits to the state of the art production facilities at the Centre of Excellence. The information about the training programs will be disseminated through district and field level staff of Department of Horticulture and Agriculture.

5.4 Order Processing and Inventory Control:

The production of flowers and vegetables will be done as per the crop calendar prepared and approved ahead of the crop cycle. The inputs required will be procured as per the crop requirement. The fruits and vegetables will be sold in the local fruits and vegetables market.





Regarding production and sale of seedling, concerned department officers places an indent to CoE on how many number of farmers will require seedlings –both crop wise and month wise. The officer in-charge of the nursery will indicate how many number of seedlings farmer will give seed and for how many number of seedlings CoE has to procure seeds very specifically. Based on the data procured from horticulture officers, the day wise action plan will be prepared by CoE in-charge and necessary seedlings production will be carried out. The produced seedlings will be dispatched on the designated date duly informing the farmer about the transportation arrangements.

Orders coming to CoE through business tie-ups and walk-in customers will be processed ensuring that the orders are delivered to the satisfaction of the customers

5.5 Structure of CoE:

The CoE will be headed by the Commissioner of Horticulture, Telangana state, Hyderabad at state level as administrative head and Asst Director of Horticulture, COE will oversee day to day management of the CoE through Horticultural officers and Horticulture and other staff. The CoE will be run by a technical and administrative team from Department of Horticulture under the control of Asst Director of Horticulture. Skilled persons / semi skilled persons/ labourers shall be engaged as per the requirement for carrying out the various field and office operations.

5.6 Project Management

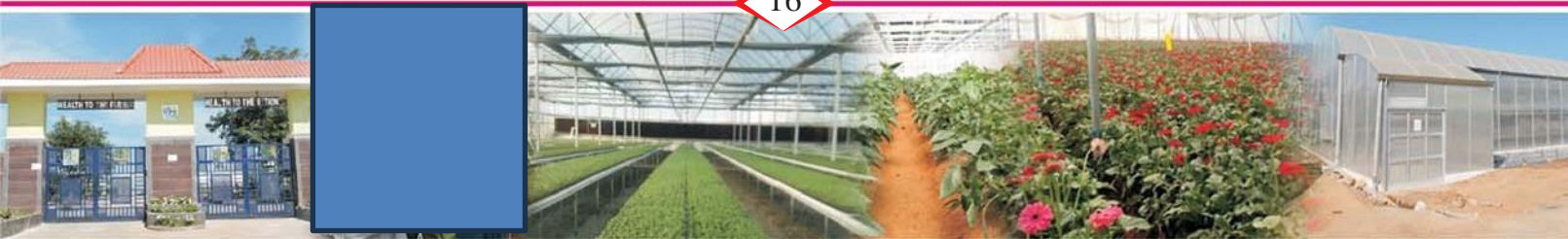
The projects will be managed through a regular project management processes with market demand based annual crop plans leading production operations of the CoE supported by financial plans. Both the physical and financial plans will be part of the regular departmental plans and review processes.

5.7 Management Information System

The CoE will use computer based management information system to keep track of both the physical and financial progress of the activities including the market intelligence information of the flowers and vegetables and use the information to monitor the progress as well as to prepare the fortnightly and monthly reports.

6. Human Resources

To run any organization successfully HR plays key role. The HR will be of technical and semi-technical and non-technical in nature. Here at CoE the requirement of technical and supporting staff for (1) crop production & seedling production (2) trainings and (3) marketing has to be deployed. Regarding crop production, crop specific technicians are very much required. Semi-technical human resource is needed at fertigation, automation and fertilizer and pesticide application, harvesting and packing and transportation. Non-technical human resource required is security guards, watchmen, and at sales counter level.



Horticulture Department would utilize departmental technical and semi-technical manpower, for administration and management of the CoE. Recruit experienced manpower and appoint professionals / consultants for providing key inputs and running project activities. CoE will have 9 technical-cum Managerial/administrative staff and 11 supportive staff. For handling of seedling production unit and production centre there will be labour hired locally and trained in the seedling production and management operations. Human resource for training requirements will be sourced from specialist manpower from within and outside the state or may use available departmental resource. Department of Horticulture may hire its semi-skilled and unskilled labour locally.

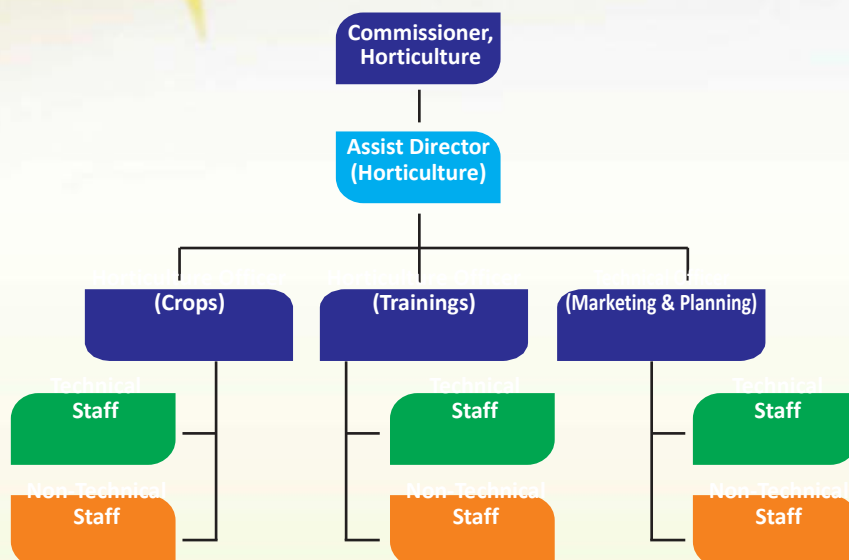
6.1 Organisational Structure of CoE

CoE has Executive Committee (EC) with the Agriculture Production Commissioner & Secretary, Agri & Coop dept, acting as Chairperson. The Commissioner of Horticulture, Telangana State, Hyderabad will be the Convenor & administrative head of the unit and see that all works shall be carried out in coordination with decisions of Executive Committee. The day to day management of CoE is done by an Assistant Director of Horticulture, who is the member convenor of Executive Committee. The Commissioner of Horticulture is supported by Assistant Director of Horticulture and Horticulture officers in overall functioning of CoE Activities.

Administrative Building & Training Centre at CoE



The Organogram of the CoE is presented below.



The functional head of CoE will be Assistant Director of Horticulture, who has to work under the administrative control of The Commissioner of Horticulture, Telangana state. Assistant Director of Horticulture, will be assisted by three Horticulture officers-(crop specific)-one for seedling & crop production (1), training (1), marketing and crop planning (1). The following are the key functionaries and the responsibilities of their positions

6.2 Technical Manpower Deployed

Assistant Director of Horticulture:

He/she should be dynamic officer and undertakes regular interaction with all the 27 CoEs in India and regularly update himself with the latest technologies and new cultivation, marketing avenues, upcoming varieties etc.

He/she is the overall responsible person for generating revenue to CoE, ensuring self-sustainability and profitability of CoE. He/she is the overall supervisor and monitoring officer of all CoE activities and functionaries.

He/she reports to Commissioner of Horticulture on the daily activities being taken up by CoE and furnishes weekly/monthly income and expenditure statement to Commissioner, Horticulture.

He/she will manage of all the four aspects of CoE including crop production, training, seedling production, marketing and crop planning in coordination with the Horticulture officer(s).



He/she is responsible for production and will take care of production process of vegetables and flowers in all 21 structures as per the crop planning approved by the Commissioner of Horticulture.

He/she is responsible for production and will take care of production process of vegetables and He/she verifies all the registers, available with 3 horticulture officers along with his remarks and follows up action on the earlier remarks.

He/she is responsible for overall financial management of the CoE.

He/she is responsible for entire landscaping of CoE ensuring aesthetic look as well as revenue generation for future use of horticulture tourism hub of Telangana State.

He/she plans for developing crop museum for future use of the horticulture tourism

He/she takes care of sales from daily transactions and verify every day.

He/she initiates action to arrange all the poly-house accessories, MIP accessories and seed packets, portrays, flower packing material, floral foam bricks and bouquets preparation material, cut flower preservatives for sale to farmers / florists at the sales point (one stop shop model).

Horticulture Officer (Production):

He/she will be competent horticulture officer deputed from other districts.

He/she is in charge of production and will take care of production process of vegetables and flowers in all 21 structures as per the crop planning approved by the commissioner of horticulture.

He/she is responsible for production of vegetable seedlings. He/she prepares day wise action plan based on the data procured from horticulture officers from their respective jurisdiction and necessary seedlings production will be carried out.

He/she procure highly demanded vegetable FI seeds to meet the seasonal demand by making critical planning being in touch with state horticulture department.

He/she is solely responsible for quality and timely production of seedlings by matching and batching process

He/she will send seedlings from CoE to farmer fields taking due care by making proper packing and transportation arrangements.

He/she has to maintain registers with day wise operations and seedling production cycles.

He/she is solely responsible for the implementation of all the cost and economic parameters and income parameters as approved by commissioner of horticulture and crop budget.

He/she maintains register recording day wise operations and crop production cycles.



Horticulture Officer (Trainings):

He/she will be a competent horticulture officer deputed from other districts.

He/she prepares training manuals, training modules as per the requirement and same has to be submitted to AD Horticulture for further approval of the Commissioner of Horticulture.

He/she is responsible for preparing training module as per the need with justification with ultimate use to the farmers in getting the double yields as well as double income and awareness.

He/she will be responsible for managing the training program as per the schedule.

He/she will prepare monthly bulletins, publications, CDs and power point presentations. Also he/she takes care of lodging, boarding, field visits and transport facilities of the trainee participants.

He/she is responsible for sourcing technical manpower from recognized government as well as private agencies. He/she ensures subscription of the national and international monthly magazines on horticulture to showcase in the library.

He/she ensures display farmer success stories in the training centre and corridors.

He/she maintains register for feedback and evaluation and action taken report from all the farmers of all the trainings and same has to be furnished to Commissioner, Horticulture for verification through proper channels.

Horticulture Officer (Marketing and Planning):

He/she will be competent horticulture officer deputed from other districts.

He/she will be backbone of CoE as he/she takes regular market intelligence survey based on which advocates with AD, Horticulture for proper crop planning to generate higher revenue to the CoE.

He/she has to be in regular touch with prominent vegetable and flower buyers in the state, outside state and abroad and has to display the prominent place and day wise daily prices of vegetable and flower so that farmers can interpret the crop planning based on the data available.

He/she has to keep the everyday data ready in the computer system which as to be supplied to the farmers as and when required.

He/she has to arrange regular interaction with traders and if possible enter MoU with select traders and exporters.

He/she has to be in constant touch with officers of NABARD and APEDA and major horticulture institutes of India to update himself /herself regarding marketing and crop planning.

He/she has to make efficient use of pack house available at CoE.

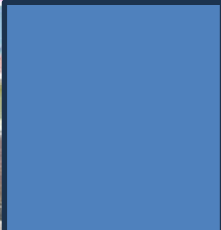


6.3 Semi-Skilled Manpower:

The Horticulture officers will be supported by the semi-technical and non-technical staff based on necessity at their level. For the regular movements of the DDH and ADH, two four wheelers will be provided on contract basis as per the existing guidelines of State government. Four wheeler vehicles will be engaged to transport the seedling to the farmer sites as per the government guidelines.



Gerbera NVPH-6, Area:1008 Sq. Mtrs 6000 Plants in Poly House



7. Environmental and Social Factors

As such this being a training centre and production centre of horticulture products, there would be no effluents needing treatment before discharge. The normal waste water could be discharged into the underground sewage system. However, Horticulture department obtained the necessary NOC from the Telangana State Pollution Board before the commencement of the project. Through the training centre, entrepreneurial farmers will be trained for sustainability aspects including water usage & efficient management, pesticide usage and fertigation requiring lesser usage of fertilizers and as such will enhance the sustainability of land, water and other resources in the state.

7.1 Water Supply

Water for the project is sourced through a construction of farm pond and 4 tube well within the CoE site. If required, Horticulture department may also use underground water by constructing additional bore well at its site.

7.2 Environment Management

Air Emissions:

The CoE and high-tech seedling unit and the poly-houses production Unit do not require any source of heat or utility, where it has to be generated using combustion. Hence, no continuous air emission from the production unit will be generated.

Waste Water:

The plant does not require any effluent water treatment, as there is no generation of waste water.

Sewage / Effluent:

The production process would not generate any process/trade effluent. Sewage will be generated from toilets only. Occasional floor washings and sundry cleanings streams will be mixed with the sewage & then discharged to Municipal Corporation through septic tank.

Solid Waste:

The plant will generate solid waste during the season based on production material processed, which will be used as material for vermin-compost generation.

Hazardous Waste:

There is no any hazardous waste generated through proposed CoE project.

7.3 Fire Fighting & Industrial Safety

It is envisaged that the whole project will meet the fire & safety standards. The project envisages installation of localized fire extinguishers as per requirements.



7.4 Clearances Obtained

Following clearance/approvals were obtained from various agencies for the proposed Centre of Excellence

Permission to set up CoE from to Jeedimetla Gram Panchayat was obtained.

Consent to Establish CoE from Telangana State Pollution Control Board

Clearance from Telangana State Electricity Department for sanction of requisite load

Clearance from Fire Safety Department

7.5 Consumption of Power:

The proposed Centre of Excellence and the protected cultivation related infrastructure requires power which was obtained from Telangana State Electricity Board (MSEB). Further, to address emergency situation, three stand by Diesel Generator sets were also kept. Distribution of power inside the CoE would be distributed to individual light points through main and sub lighting distribution boards, for all the areas. However, given the nature of requirement of Power for the high-tech Seedling Unit and to the Polynet houses and the running the Centre of Excellence the power consumption is estimated to be Rs.6,00,000 per year.

7.5 Economic impact

Through sale of products and services, CoE earns revenue and profits. Apart from it, the proposed project will help farmers earn higher incomes. It will save farmers from the exploitation of the unscrupulous seedling suppliers by providing quality seedlings ensuring better yield and hence through it higher income realisation. Training programs provided through the Centre of Excellence will enhance the incomes of farming households in the state and help in diversification of agriculture to horticulture and floriculture crops.

Nearly 2000 farmers and other stakeholders will be trained on different subject areas with an adoption target of achieving 500 acres under poly house, 500 acres under trellising, 500 acres under flowers and 500 acres under pandal cultivation every year during the next five years. Such an adoption of protected cultivation of technology will result in per acre savings of Rs.1,000 on Fertilizers and Pesticides; Rs.1,317/- on saving electricity and power; Rs.1.0 Lakhs on water saved and Rs.6,000 per acre of productivity gains and Rs.6000/ per acre on cost of labour saved. Thus a total of Rs.1.10 Lakhs is saved per acre with the use of protected cultivation. During the next five years with the adoption of protected cultivation technologies on 10,000 acres, a total of Rs.11,000 Lakhs will thus be the savings on account of adoption of protected cultivation technologies.

7.6 Impact on Employment

Horticulture Department would utilize departmental manpower for administration and management



of the CoE and recruit experienced manpower and appoint professionals / consultants providing key inputs for running project activities. CoE will have 7 technical / administrative staff and 11 supportive staffs. For the handling of seedling production unit and production centre there will be 10 labourers. Human resource required for conducting training programs will be met through hiring experienced and specialist resources available both in Telangana as well as from outside the state along with use of available departmental resources. Department of Horticulture may source its semi-skilled and unskilled labourers locally and thus create jobs.

The direct employment opportunities being created by the project is roughly around 20 persons at CoE and there will be creation of regular employment for 15 persons at the training centre while delivering the training programs. Apart from this, project will also provide downstream and upstream employment opportunities. The scope of employment opportunity will increase in future with growth of horticulture & floriculture production. Therefore, the project is likely to create direct and indirect employment opportunities for local population at the CoE as well as in the entire state.

With training on protected cultivation technologies for cultivation of flowers and vegetables, it is expected that at least 2,000 acres will be adopted by the farmers and on a five year period 10,000 acres will be cultivated with flowers and vegetables through protected cultivation technologies. As the flowers and vegetables are highly labour intensive crops, cultivation of these crops will result in creation of additional 186 to 200 man days of employment depending on flowers (200) or vegetables (186) grown per acre and thus with the adoption of protected cultivation on a 10,000 acres a total of 19.30 lakhs of man days of employment will be generated resulting in a monetary benefit of Rs 5,790 Lakhs.

7.7 SWOT Analysis:

The following is a SWOT analysis of the production activities and training programs to be carried out at the CoE. The SWOT analysis suggests that strengths and opportunities outweigh the weakness and threats

STRENGTHS

Training Programs

Availability of state of the art training facilities and infrastructure.

Certificate courses offered by qualified experts.

Experienced faculty with professional qualifications and training skills on new technologies and consultancy activities.

Experienced proficient faculty and support staff from Horticulture University, progressive farmers and companies.



Farmers attending the training programs are literate with back ground knowledge of agriculture.

Flowers/Vegetables Production

The CoE is located at Jeedimetla having suitable agro-climatic conditions with scope for culture of diverse vegetables and flower types.

There is a good network of nurseries supplying seedling and planting material.

Huge demand supply gap in Hyderabad as well as in the state to support expansion of additional area under green house floriculture and floriculture.

Vegetables Seedling Production

The state has diverse agro-climatic conditions with vast scope for horticulture crops.

The farming community is dynamic and enterprising.

State government support to the vegetable growers through various schemes and policies.

Huge demand supply gap in the state that can support expansion of area under green house floriculture.

WEAKNESS

Training Programs

Lack of enough in-house technical specialists and practitioners in all the areas of the training program

Mismatch in schedules of hired technical specialists and training programs.

Different crop cycles at CoE resulting in some subject areas of training programs not having crop demonstration sites ready at the time of training to demonstrate to training participants.

Flowers/Vegetables Production

The seed and planting material industry is relatively weak.

Present trade for cut flowers is still in infancy stage. The marketing channels are not well developed.

Seasonality of vegetables and flowers production with wide price fluctuations.

Vegetables Seedling Production

The production center located in Jeedimetla need to cater to growers in distant places.



OPPORTUNITIES

Training Programs

Having protected cultivation structures (21) and seedling production unit (1) and a state of the art training infrastructure with a large pool of technical and management experts on protected cultivation.

Growth of area under polyhouse, greenhouse based protected cultivation technologies for crop production.

Increased involvement of other stakeholders involved like planting material suppliers, extension officers, vendors, bankers and financial institutions.

Flowers/Vegetables Production

There is an increasing demand within and outside the state.

With districts around Hyderabad having congenial conditions favorable for horticulture, scope exist for expanding area under horticulture crops in Telangana.

Vegetables Seedling Production

Existing private nurseries are producing spurious and low quality seedlings.

THREATS

Training Programs

High initial cost of investment resulting in slow growth of protected cultivation methods.

Subsidized capacity building programs to farmers.

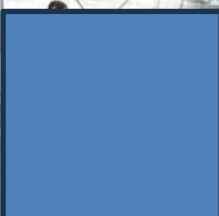
Flowers/Vegetables Production

There are wide fluctuations in the market prices due to supply gap.

Price discovery mechanism does not exist.

Vegetables Seedling Production

- Unorganised nursery industry with informal networks and channels of marketing
- Prices of seedlings and delivery mechanism of seedlings to farmers.



8. Financial Planning

Allocations for initial infrastructure investment activities totaling around Rs.1239.68 Lakhs was made out of which Rs.782 Lakhs from MIDH and the remaining through state share and other resources. The planned infrastructure activities are nearing completion and the present proposal for approval is for carrying out the production of flowers & vegetables, production of seedlings and training activities proposed to be conducted at the Centre of Excellence. The following is the fund requirement for the three activities. Project revenue and financial indicators are worked with detailed calculations given in Annexure and summary is presented below.

8.1 Project Revenue:

The proposed project aims to run the centre on self-sustaining basis earning revenues to meet the operational expenses. Apart from generating revenue to the CoE or Department of Horticulture, the proposed activities also generates indirect benefits i.e. increase in revenue to farmers and trainees. Each of this revenue is explained in detail, below:

8.1.1 Direct Benefits-Revenue to CoE

Training fees, revenue from sale of produce from demonstration sites and sale of vegetable seedlings are the three main source of revenue in the proposed project. Major assumptions considered for working out of revenue is given in later part of this Chapter. A total revenue of 1,595.8 Lakhs will be generated through the project activities during the 5 year period. Major part of the revenue comes from sale of vegetables and flowers earning Rs.1076 Lakhs during the five year period (See Annexure-3). This is followed by training programs earning about Rs.307 Lakhs (See Annexure-1) followed by sale of seedlings earning about Rs.212.8 lakhs (See Annexure-2).

Table-8.1 Income Through Activities of Centre of Excellence (Rs Lakhs)

Sl. No.	Activities of CoE	2017	2018	2019	2020	2021	2017-21
1	2	3	4	5	6	7	8
1	Trainings	61.4	61.4	61.4	61.4	61.4	307.0
2	Sale of Seedlings	42.56	42.56	42.56	42.56	42.56	212.8
3	Sale of Vegetables & Flowers	210.62	214.83	217.63	217.63	215.28	1076.0
4	Total Income	314.58	318.79	321.59	321.59	319.24	1595.8



8.1.2 Indirect benefits

The proposed project has many indirect benefits. There won't be any monetary benefits to Department of Horticulture from the indirect benefits but the intended beneficiaries' i.e. farming community will get these benefits. Training programs provided through the centre will enhance the efficiency of farming community in production of horticulture produce. After attending the training program, the trainees will adopt the new technologies and the efficiency of existing production facilities will be enhanced. It will also help farmers get higher yields and better income realization by enhancing the production of horticulture products. Further there is an indirect impact on employment generation benefiting the semi-skilled and unskilled labourers.

8.2 Assumptions

The following assumptions have been taken into consideration while working out project rate of return.

The CoE and the all the production facilities were operational from first year onwards

The capacity utilization of the proposed centre will be 100 from second year onwards utilizing all the facilities.

Proposed centre will be working for 365 days a year.

Labour for loading and unloading of seedling and working in the centre is hired @ of Rs.300 per man day. Skilled labours salary has been considered as per the local market rates.

Training programmes will be conducted with a batch strength of 40 and there will be training programme utilizing 21 days per month from first year onwards

8.3 Financial indicators

Financial indicators including Profitability ratios (gross profit margin, operating profit margin, net profit margin) and economic return indicators (Net Present Value, Internal Rate of Return and Benefit Cost Ratio) are presented to highlight the financial soundness of the proposed project including the larger socio-economic benefits.

8.3.1 Profitability Ratios:

With the consideration of profitability, the proposed project of Department of Horticulture generates a Gross Profit of Rs.535.10 Lakh out of sales worth Rs.1595.8 Lakhs resulting in a Gross Profit Margin of 33.53%.



Table-8.2: Income Statement (Rs Lakhs)

Capacity Utilization 1	100% 2	100% 3	100% 4	100% 5	100% 6	100% 7
Installed Capacity (SQ Meters)	23976	23976	23976	23976	23976	23976
YEAR	2017	2018	2019	2020	2021	2017-21
PRODUCTION						
Trainings (Nos Trained)	2000	2000	2000	2000	2000	10000
Production of Seedlings ('00000)	42.56	42.56	42.56	42.56	42.56	212.8
Production of Vegetables & Flowers	3966065	4521069	4544325	4544325	4557825	2213360
INCOME CALCULATION-A	2017	2018	2019	2020	2021	2017-21
Trainings (Nos Trained)-A1	61.4	61.4	61.4	61.4	61.4	307.0
Sale of Seedlings ('00000)-A2	42.56	42.56	42.56	42.56	42.56	212.8
Production of Vegetables & Flowers-A3	210.62	214.83	217.63	217.63	215.28	1076.0
Total Sales Revenue A4=(A1+A2+A3)	314.58	318.79	321.59	321.59	319.24	1595.8
EXPENDITURE CALCULATIONS-B	2017	2018	2019	2020	2021	2017-21
Trainings-B1	61.92	61.92	61.92	61.92	61.92	309.62
Production of Seedlings ('00000)-B2	28.42	28.42	28.42	28.42	28.42	142.09
Production of Vegetables & Flowers-B3	200.38	86.62	91.11	147.22	83.66	608.99
Total production Expenditure(Rs Lakhs) B4=(B1+B2+B3)	290.72	176.97	181.45	237.56	174.00	1060.69
Gross Profit C=(A4 - B4)	23.86	141.83	140.13	84.03	145.24	535.10
Common Facility-Power-D1	1.44	1.44	1.44	1.44	1.44	7.20
Manpower Cost-D2	26.52	27.85	27.85	29.17	29.17	0.00
Fuel (Diesel/Petrol) Charges-D3	1.00	1.00	1.00	1.00	1.00	5.00
Transportation Charges-D4	1.00	1.00	1.00	1.00	1.00	5.00
Repair and Maintenance-D5	1.20	1.20	1.20	1.20	1.20	6.00
Miscellaneous Expenses-D6	2.40	2.40	2.40	2.40	2.40	12.00
Sales & General administrative Expenses - D	33.56	34.89	34.89	36.21	36.21	175.76
Total Recurring Cost	324.28	211.86	216.34	263.77	210.21	1236.45
Operating Profit (EBITDA) Rs Lakhs E=(C-D)	-10	107	105	48	109	359.34
Profit after depreciation and interest (Rs Lakhs) - F	-9.70	106.94	105.25	47.82	109.03	359.34
Tax	0.00	0.00	0.00	0.00	0.00	0.00
Net Profit/Loss (PAT) Rs Lakhs E-F	-9.70	106.94	105.25	47.82	109.03	359.34

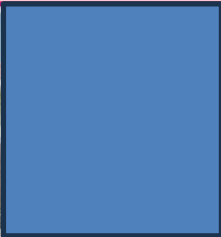


INCOME STATEMENT

Economics of Centre of Excellence, Jeedimetla

(Rs. In Lakhs)

		2017	2018	2019	2020	2021	2017-2020
Production of Plugging							
I	A INCOME	42.56	42.56	42.56	42.56	42.56	212.8
	B EXPENDITURE	28.42	28.42	28.42	28.42	28.42	142.1
	C PROFIT	14.14	14.14	14.14	14.14	14.14	70.7
Trainings							
II	A INCOME	61.4	61.4	61.4	61.4	61.4	307
	B EXPENDITURE	61.92	61.92	61.92	61.92	61.92	309.6
	C PROFIT	-0.52	-0.52	-0.52	-0.52	-0.52	-2.6
Production of Flowers and Vegetables							
III	A INCOME	210.6	214.8	217.6	217.6	215.28	1075.99
	B EXPENDITURE	200.4	86.62	91.11	147.2	83.66	608.99
	C PROFIT	10.24	128.2	126.5	70.41	131.62	467
Gross							
IV	A GROSS INCOME (IA+IIA+IIIA)	314.6	318.8	321.6	321.6	319.24	1595.79
	B GROSS EXPENDITURE (IB+IIB+IIIB)	290.7	177	181.5	237.6	174	1060.69
	C GROSS PROFIT (IC+IIC+IIIC)	23.86	141.8	140.1	84.03	145.24	535.1
V	General Administrative Expenses	33.56	34.89	34.89	36.21	36.21	175.76
VI	Net Profit = IVC - V	-9.70	106.9	105.3	47.82	109.03	359.34

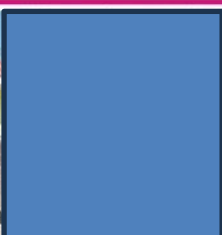


Further, after accounting for sales, administration and management expenses, the project generates an operating profit of Rs.359.34 Lakhs (or 22.52 Percent). The production and sale of horticulture produce does not attract tax on profits as the Center of Excellence is not registered under Company Act 2013 and hence is not a corporate entity. After deducting depreciation, interest payments and taxes, the Net Profit from the project is 359.34 Lakh generating Net Profit Margin of 22.52%.

With the consideration of financial returns, the proposed project of Centre of Excellence, Department of Horticulture is financially sound with Net Present Value (NPV) of Rs.223.18 Lakhs, an internal rate of return of 1097 per cent and with a benefit cost ratio of 1.26

Table 8.3: Financial Indicators (Rs Lakhs)

Particulars	Year-1 2017	Year-2 2018	Year-3 2019	Year-4 2020	Year-5 2021	NPV
1	2	3	4	5	6	7
Capital Cost	0.00	0.00	0.00	0.00	0.00	
Recurring Cost	324	212	216	274	210	Rs.
Total Cost	324.28	211.85	216.34	273.77	210.22	845.46
Benefit	315	319	322	322	319	
Depreciated cost					0	Rs.
Total Benefits	315	319	322	322	319	1,068.64
Net Benefits	-10	107	105	48	109	
Discounting Factor	15.00%					
NPV @ 15%	223.18					
IRR	1097%					
BCR	1.26					



9. Conclusion

Following construction CoE and implementation of activities, the following is proposed at the Centre of Excellence by Department of Horticulture:

Training of farmers at the centre with two class rooms with 40 sitting capacity along with staff quarters for managers of the CoE, hostel facility for trainees

Production of vegetable seedling using the Hi tech green house based quality seedling production facility

Production of flowers and vegetables through polyhouses, polynet houses, walking tunnels and shadenets etc., for demonstration of latest protected cultivation technologies to the farmers will also generate revenue through sale of produce.

The total cost of the proposed project will be Rs.1236.45 Lakh. With the consideration of profitability, the proposed project will generate Gross Profit Margin of 331.53%, an Operating Profit Margin of 22.52 percent and Net Profit Margin of 22.52%.

The project will generate a Net Present Value (NPV) of Rs.223.18 Lakhs, Internal Rate of Return (IRR) works out to 1097% per cent and benefit cost ratio at 15 per cent Discount Factor is 1.26 indicating good returns for the project. The project also generates sufficient benefits to the intended beneficiaries i.e. farming community.

It can be concluded that the Centre of Excellence at Jeedimetla and the activities proposed by the Department of Horticulture, Government of Telangana State, at Centre of Excellence is financially/economically viable. The project needs a favourable consideration from Ministry of Agriculture and Farmers Welfare, Government of India and National Horticulture Mission (NHM) on the basis of strong economic and financial parameters. The project will benefit the farming community and boost their income.

Overall Impact of COE Jeedimetla

SI.NO.	PARTICULARS	DIRECT IMPACT	INDIRECT IMPACT to Farmers
1.	Area Covered (5 years)	51.00 Acres	10,000 Acres
2.	Additional Productivity @Rs.6000 per Acre	3.06 Lakhs	6.00 Crores
3.	Labour Saving @ Rs.2000 per Acre	1.02 Lakhs	2.00 Crores
4.	Fertilizers and Pesticides saving @ Rs.1000 per Acre	0.51 Lakhs	1.00 Crore
5.	Energy & Water saving Rs.1.01 Lakhs per Acre	51.51 Lakhs	101 Crores



X. ANNEXURES

Annexure-1: Income and Expenditure Statement of Training Programs (in Rs Lakhs)

Sl. No	Manpower Expenses	No Trainings	No of Units	Unit	Expenses per Unit (in Rs)	Total Expenses (Rs)	2017-18	2018-19	2019-20	2010-21	2021-22
	Income from Trainings		No	Unit	Fees per Person (Rs)	Total Income (Rs)					
1	2	3	4	5	6	7	8	9	10	11	12
A.1	No of Farmers Trained @ 5 Day Program	8	320	Trainee	5000	1600000	16.0	16.0	16.0	16.0	16.0
A.2	No of Officers/Outsiders Trained @ 5 Day Program	4	160	Trainee	8000	1280000	12.8	12.8	12.8	12.8	12.8
A.3	No of Farmers Trained @ 3 Day Program	8	320	Trainee	3000	960000	9.6	9.6	9.6	9.6	9.6
A.4	No of Officers/Outsiders Trained @ 3 Day Program	4	160	Trainee	4000	640000	6.4	6.4	6.4	6.4	6.4
A.5	No of Farmers Trained @ 2 Day Program	10	400	Trainee	2000	800000	8.0	8.0	8.0	8.0	8.0
A.6	No of Officers/Outsiders Trained @ 2 Day Program	1	40	Trainee	3000	120000	1.2	1.2	1.2	1.2	1.2
A.7	No of Farmers Trained @ 1 Day Program	8	320	Trainee	1000	320000	3.2	3.2	3.2	3.2	3.2
A.8	No of Officers/Outsiders Trained @ 1 Day Program	7	280	Trainee	1500	420000	4.2	4.2	4.2	4.2	4.2
A	Total Revenue	50	2000				61.4	61.4	61.4	61.4	61.4

B	Expense for Trainings										
B.1	Man Power Cost										
B.1a	Cost of Hiring of Subject Matter Experts	47	Days	5000	235000	2.35	2.35	2.35	2.35	2.35	2.35
B.1b	Cost of Hiring Local Resource Persons	258	Days	1000	258000	2.58	2.58	2.58	2.58	2.58	2.58
B.2	Material Cost										
	Production & Printing of Training Material	2000	Trainees	500	1000000	10.00	10.00	10.00	10.00	10.00	10.00
B.3	Food & Stay Expenses										
B.3a	Food Expenses per day per person training program	2000	Trainees	1050	2100000	21.00	21.00	21.00	21.00	21.00	21.00
B.3b	Expenses for Stay	2000	Trainees	600	1200000	12.00	12.00	12.00	12.00	12.00	12.00
B.4	Travel Expenses										
B.4a	Travel for Trainees (from training center To field site)	47	Days	12500	587500	5.88	5.88	5.88	5.88	5.88	5.88



B.4b	Travel for Resource Persons	86	Days	1800	154800	1.55	1.55	1.55	1.55	1.55
B.5	Miscellaneous Expenses									
B.5a	Meeting/Training Hall	133	Days	4000	532000	5.32	5.32	5.32	5.32	5.32
B.5b	Other Miscellaneous Expenses	50	Programs	2500	125000	1.25	1.25	1.25	1.25	1.25
B	Total Expense					61.92	61.92	61.92	61.92	61.92
C	Net Income (A-B)					-0.52	-0.52	-0.52	-0.52	-0.52

Note:

There will be 2 day field visits in a 5-day program, 1 day field visit in a 2 or 3 day program.

It is assumed that there will be a total of 40 trainees per batch.

5 persons will be hired for an average of 10 days each and 10 local resource persons will be hired for an average of 26 days each in a year

The details of the training program is given in Annexure-I.1 and per day training cost is given in Annexure-I.2

Annexure I.1: Details of Expected No of Participants and the Topics of Training Programs

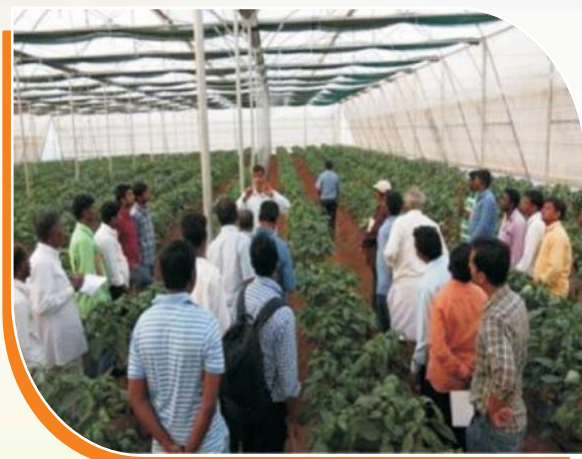
Sl.No	Name of the Topic	Duration of the training program	No of Training Programs per year	No of officers / farmers / outsiders to be trained @ 40 per batch
1	2	3	4	5
I	Certificate course on cultivation of different crops under poly house	5 days	12	480
II	Crop specific advanced production technology under polyhouse / under open cultivation			
1	Production Technology of Flowers under polyhouse / open cultivation	3 days	5	200
2	Production Technology of Vegetables under polyhouse / open cultivation	3 days	5	200
3	Plug nursery production	2 days	2	80
4	Post harvest technology under polyhouse / open cultivation	2 days	3	120
5	Organic cultivation in polyhouse / open cultivation	2 days	2	80
6	Open cultivation of Horticulture crops	2 days	2	80
7	Integrated Nutrient Management of Horticulture crops under Polyhouse / Open cultivation	2 days	2	80
8	Integrated Pest Management of Horticulture crops under Polyhouse / Open cultivation	2 days	2	80
9	Irrigation and Fertigation under polyhouse / open cultivation	1 day	6	240
10	Capacity building on market analysis and linkages	1 day	4	160
11	E-marketing	1 day	3	120
12	Use of Mechanization in Horticulture Crops	1 day	2	80
	Total		50	2000



Annexure-I.2 The assumptions used while estimating per day cost of training program (ex:5-day program) is given below.

Sl.No 1	Item of Cost 2	No of Persons 3	Unit 4	Rate 5	Days 6	Amount 7
1	Lunch	40	Food	350	5	70000
2	Dinner	40	Food		5	0
3	Tiffin	40	Food		5	0
4	Snacks and Tea	40	Food		5	0
5	Books & Pens	40	Set	475	1	19000
6	Bags	40	Bag		1	0
7	Reading Material	40	Set		1	0
8	Certificates	40	Certificate	50	1	2000
10	Vehicles (Bus) hired for field visits (40 seater)	1	Vehicle	12500	2	25000
11	Resource Persons (Local)	5	Person Day	1500	1	7500
12	Resource Persons (Non-Local) including Flight, Transportation etc)	1	Person Day	5000	1	5000
13	Hiring Car for Resource Persons	1	Vehicle	1800	5	9000
14	Stay Facility for Participants	40	Rooms	200	5	40000
15	Meeting Hall	1	Hall	4000	5	20000
16	Miscellaneous	1	Lump sum	2500	1	2500
17	Grand total					200000
					Cost Per Person	5000





Training programmes at CoE, Jeedimetla



Visit of Hon'ble Agriculture & Horticulture Minister at CoE, Jeedimetla on 17.11.2016



Visit of delegates from Norway at CoE, Jeedimetla on 16.12.2016.





**Automatic Boomer Irrigation System in Plug Type Nursery
(Sowing on 25-11-2016, Variety: Tomato US440)**



Capacity 5,32,000 pluglings per Batch



Seedling Unit



Annexure-2: Income and Expenditure Statement of Production of Seedlings (Rs Lakhs)

Sl.No	Revenue / Cost items	No of Units	Units	Price per Unit	Amount (Rs Lakhs)	2017	2018	2019	2020	2021	2017-21
1	2	3	4	5	6	7	8	9	10	11	12
A	Total Revenue from Sale of Seedlings	42.56	Seedling	1.00	42.56	42.56	42.56	42.56	42.56	42.56	212.80
	Cost of Producing 1 Batch of Hi-Tech Greenhouse seedlings										
B.1	Cost of seeds	234.08	Packets	300	0.70	0.70	0.70	0.70	0.70	0.70	3.51
B.2	Cost of Raw Material (Cocopeat)			Lump Sum	1.00	1.00	1.00	1.00	1.00	1.00	5.00
B.3	Electricity Bill			Lump Sum	0.4	0.4	0.4	0.4	0.4	0.4	2.00
B.4	Cost of Labor (for Maintenance of Hi-Tech Green House)	150	Man days	300	0.45	0.45	0.45	0.45	0.45	0.45	2.25
B.5	Cost of Packaging & Transport			Lump Sum	0.5	0.5	0.5	0.5	0.5	0.5	2.50
B.6	Miscellaneous Expenses / fertilisers			Lump Sum	0.5	0.5	0.5	0.5	0.5	0.5	2.50
B.7	Total cost of producing seedlings per batch				3.55	3.55	3.55	3.55	3.55	3.55	17.76
B	Total Production Cost	8	Batch	3.55	28.42	28.42	28.42	28.42	28.42	28.42	28.42
C	Net Income from Seedling Production (A-B)				14.14	14.14	14.14	14.14	14.14	14.14	70.71

Note:

1. It takes roughly of about 20 days to produce one batch of seedlings
2. Each packet (of Tomato seeds) will contain 2500 seeds
3. Each batch will have 5.32 Lakh seeds with 90 percent germination rate.
4. A total of 8 batches of seedling will be produced
5. Each seedling will be sold @ Rs.1.00. This is inclusive of Subsidy of Rs.50 receivable from Department



Annexure-3: Income & Expenditure statement of Flower and Vegetable Production (Rs Lakhs)

Sl. No	Capacity Utilisation			100%	100%	100%	100%	100%	100%
	Installed Capacity (SQ Meters)			23976	23976	23976	23976	23976	23976
	Area Under Crop	Yield Per SqM	Units (Sq M)	2017	2018	2019	2020	2021	2017-21
1	Gerbera (Perennial)			10928	12944	12944	12944	12944	62704
2	Capsicum (Seasonal)			2016					2016
3	Dutch Rose (Perennial)			2016	2016	2016	2016	2016	10080
4	Carnation (Perennial)			1008	1008	1008	1008	1008	5040
5	Orchid (Perennial)			3024	3024	3024	3024	3024	15120
6	Liliums (Seasonal)			1000	1000	1000	1000	1000	5000
7	Coriander (Seasonal)			3000	3500	3000	3000	3500	16000
8	Cucumber (Seasonal)			4692	2500	2500	2500	2500	14692
9	Muskmelon (Seasonal)			2676	2676	2000	2000	2000	11352
10	Brinjal (Seasonal)			1000	1000	1000	1000		4000
11	Strawberry (Seasonal)			500	500	500	500	500	2500
12	Broccoli/English Vegetables/Leafy Vegetables			9500	9500	9500	9500	9500	47500
13	Gypsophila/Limonium (Seasonal)			824	824	1500	1500	1500	6148
14	Chrysanthemum (Seasonal)			1352	676				2028
15	Grand Total			43536	41168	39992	39992	39492	204180
	Production from Crop	Yield Per SqM	Units (Sq M)	2017	2018	2019	2020	2021	2017-21
1	Gerbera (Flowers)	273.75		2991540	3543420	3543420	3543420	3543420	17165220
2	Capsicum (Colour) (Quintal)	0.15		302	0	0	0	0	302
3	Dutch Rose Perennial (Flowers or Stems)	60		120960	120960	120960	120960	120960	604800
4	Carnation Perennial (Flowers/Stems)	187.5		189000	189000	189000	189000	189000	945000
5	Orchids or Dendrobium (Flowers)	68		205632	205632	205632	205632	205632	1028160
6	Liliums (Flowers)	15		15000	15000	15000	15000	15000	75000
7	Coriander (bunches)	75		225000	262500	225000	225000	262500	1200000
8	Cucumber (Qunital)	0.125		587	313	313	313	313	1837
9	Musk Melon (Qunital)	0.125		335	335	250	250	250	1419
10	Brinjal	24		24000	24000	24000	24000	0	96000
11	Strawberry (Kg)	4.875		2438	2438	2438	2438	2438	12188



	Production from Crop	Yield Per SqM	Units (Sq M)	2017	2018	2019	2020	2021	2017-21
12	Broccoli/English Vegetables (Quintal)	0.875		8313	8313	8313	8313	8313	41563
13	Gypsophila (Stems)	140		115360	115360	210000	210000	210000	860720
14	Crysanthum (Qunital)	50		67600	33800	0	0	0	101400
15	Grand Total			3966065	4521069	4544325	4544325	4557825	22133608
	INCOME CALCULATION	Yield Per SqM	Units (Sq M)	2017	2018	2019	2020	2021	2017-21
1	Sale of Gerbera (Flowers)	273.75	3	89.75	106.30	106.30	106.30	106.30	514.96
2	Sale of Capsicum (Colour) (Quintal)	0.15	2500	7.56	0.00	0.00	0.00	0.00	7.56
3	Dutch Rose Perennial (Flower)	60	5	6.05	6.05	6.05	6.05	6.05	30.24
4	Carnation Perennial (Flowers/Stems)	187.5	2.5	4.73	4.73	4.73	4.73	4.73	23.63
5	Orchids or Dendrobium (Flowers)	49		288512	288512	288512	288512	288512	1442560
6	Liliums	15	300	45.00	45.00	45.00	45.00	45.00	225.00
7	Sale Coriander (bunches)	75	1.42886	3.21	3.75	3.21	3.21	3.75	17.15
8	Cucumber (Qunital)	0.125	1200	7.04	3.75	3.75	3.75	3.75	22.04
9	Sale of Musk Melon (Qunital)	0.125	1500	5.02	5.02	3.75	3.75	3.75	21.29
10	Brinjal (Kg)	24	12	2.88	2.88	2.88	2.88	0.00	11.52
11	Strawberry (Kg)	4.875	70	1.71	1.71	1.71	1.71	1.71	8.53
12	Sale of Broccoli (Quintal)	0.875	60	4.99	4.99	4.99	4.99	4.99	24.94
13	Sale of gypsophila (Stems)	140	7	8.08	8.08	14.70	14.70	14.70	60.25
14	Sale of crysanthum (Qunital)	50	6	4.06	2.03	0.00	0.00	0.00	6.08
15	TOTAL INCOME			210.62	214.83	217.63	217.63	215.28	1075.99
	EXPENDITURE CALCULATIONS	Yield Per SqM	Units (Sq M)	2017	2018	2019	2020	2021	2017-21
1	Gerbera (Flowers)	653.7		92.14	30.00	30.00	92.14	30.00	274
2	Capsicum (Colour) (Quintal)	212.8		4.29	0.00	0.00	0.00	0.00	4
3	Dutch Rose Perennial (Flower)	281.8		10.86	5.68	5.68	5.68	5.68	34
4	Carnation Perennial (Flowers)	448.6		7.04	1.00	7.04	1.00	1.00	17
5	Orchids (Flowers)	1151.7		35.78	7.21	7.21	7.21	7.21	65
6	Liliums	94.3		0.94	0.94	0.94	0.94	0.94	5
7	Coriander (bunches)	58.8		1.76	2.06	1.76	1.76	2.06	9
8	Cucumber	304.3		14.28	7.61	7.61	7.61	7.61	45
9	Musk Melon (Qunital)	303.1		8.11	8.11	6.06	6.06	6.06	34
10	Brinjal (Kg)	171.5		1.72	1.72	1.72	1.72	0.00	7



	EXPENDITURE CALCULATIONS	Yield Per SqM	Units (Sq M)	2017	2018	2019	2020	2021	2017-21
11	Strawberry (Kg)	192.5		0.96	0.96	0.96	0.96	0.96	5
12	Broccoli & Englisha Vegetables (Quintal)	187.2		17.78	17.78	17.78	17.78	17.78	89
13	Gypsophila (Stems)	289.9		2.39	2.39	4.35	4.35	4.35	18
14	Crysanthamum (Qunital)	172.0		2.33	1.16	0.00	0.00	0.00	
15	TOTAL EXPENDITURE (Rs Lakhs)			200.38	86.62	91.11	147.22	83.66	608.99
16	TOTAL PROFIT			10.24	128.21	126.51	70.41	131.63	467.00

Note:

1. The Life of Gerbera is 30 months and hence planting material cost is considered for 1st, 3rd Year only.
2. The Life of Dendrobium (or Orchids) is 5 years and hence planting material cost is considered for 1st year only.
3. The Life of Dutch Rose is 10 years and hence planting material cost is considered for 1st Year only.
4. The Life of Carnation plant is 30 months and hence planting material cost is considered for 1st, 3rd only.



Annexure-4:
Expenditure of Centre of Excellence (in Rs Lakhs)

Sl.No	Category of Expenses	No of Persons	Monthly Expenses (Rs per Person)	Annual Expenses (Rs.)	2017-18	2018-19	2019-20	2020-21	2021-22
1	2	3	4	5	6	7	8	9	1
	Manpower Expenses								
A1	Supervisors-Technical	2	20000	480000	4.8	5.04	5.04	5.28	5.28
A2	Crop Specialists/Faculties	2	30000	720000	7.2	7.56	7.56	7.92	7.92
A3	Data Entry Operator	1	20000	240000	2.4	2.52	2.52	2.64	2.64
A4	Accountant	1	25000	300000	3.0	3.15	3.15	3.3	3.3
A5	Jr Assistant/Sr Assistant	1	20000	240000	2.4	2.52	2.52	2.64	2.64
A6	Watch and Ward	3	7000	252000	2.5	2.646	2.646	2.772	2.772
A7	House Keeping and Upkeep of Buildings	5	7000	420000	4.2	4.41	4.41	4.62	4.62
A	Manpower Sub Total (A1 To A7)			2652000	26.52	27.846	27.846	29.172	29.172
B1	Power Charges (Electricity)		12000	144000	1.44	1.44	1.44	1.44	1.44
B2	Diesel for Generator & Maintenance Expenses		Lump sum	100000	1.00	1.00	1.00	1.00	1.00
B3	Transportation Charges		Lump sum	100000	1.00	1.00	1.00	1.00	1.00
B4	Repairs and Maintenance		10000	120000	1.20	1.20	1.20	1.20	1.20
B5	Stationery & Printing of Books		10000	120000	1.20	1.20	1.20	1.20	1.20
B6	Miscellaneous Expenditure		10000	120000	1.20	1.20	1.20	1.20	1.20
B	Sales and Administrative Expenses(B To G)			704000	7.04	7.04	7.04	7.04	7.04
C	Grand Total (A+B)			33.56	33.56	34.886	34.886	36.212	36.212

Note: For salaries, there will be an increase of 5% in Year 2 and another 5% increase in year 4





**Tomato US440 in NVPH-1 Area 2016 Sq. Mtrs.
No. of Plants 5000 DoP:31.07.2016**



**Cucumber (Hilton & Multi Star) in
NVPH-2 Area 2016 Sq. Mtrs. No. of Plants
5000 DoP:25.06.2016**



**Capsicum (Indra, Bombi & Orabelle) in NVPH-3
Area 2016 Sq. Mtrs. No. of Plants
5000 DoP:05.08.2016**



**Dutch Rose in NVPH-4 & 5 Area 1008 Sq. Mtrs.
each No. of Plants 4500 each DoP:04.08.2016**





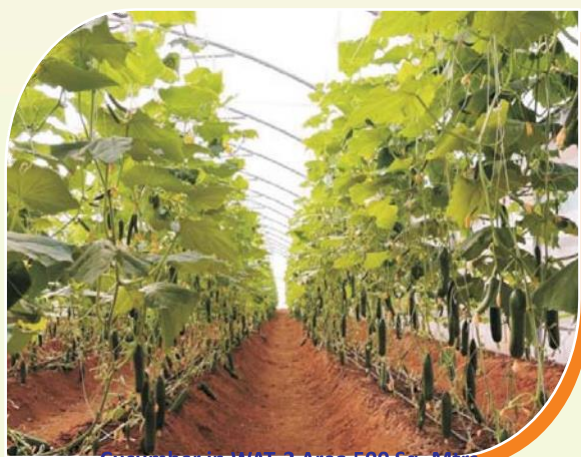
**Gerbera in NVPH-6 Area 1008 Sq. Mtrs.
No. of Plants 4750 DoP:30.06.2016**



**Carnation in NVPH-7 Area 1008 Sq. Mtrs.
No. of Plants 16000 DoP:15.09.2016**



**Liliums in WAT-1 Area 500 Sq. Mtrs.
No. of Plants 10000 DoP:18.11.2016**



**Cucumber in WAT-2 Area 500 Sq. Mtrs.
No. of Plants 1350 DoP:27.10.2016**





**Brinjal in WAT-3 Area 500 Sq. Mtrs.
No. of Plants 450 Single Row DoP:24.10.2016**



**Strawberry (Chandler) in WAT-4 Area 500 Sq. Mtrs.
No. of Plants 4500 DoP:10.11.2016**



**Braccoli (SadanaF) in WAT-5 Area 500 Sq. Mtrs.
No. of Plants 4500 DoP:20.10.2016**



**Farm Pond 11.00 Lakhs Ltrs. Capacity
in CoE Jeedimetla**





Visit of Central Team on 23.11.2016



Seedling Unit attached to Hitech Green House



Green belt Haritharam Plantation by APC & Secretary for Agriculture in COE 05.08.2016



RO Unit – 5000 LPH in CoE, Jeedimetla

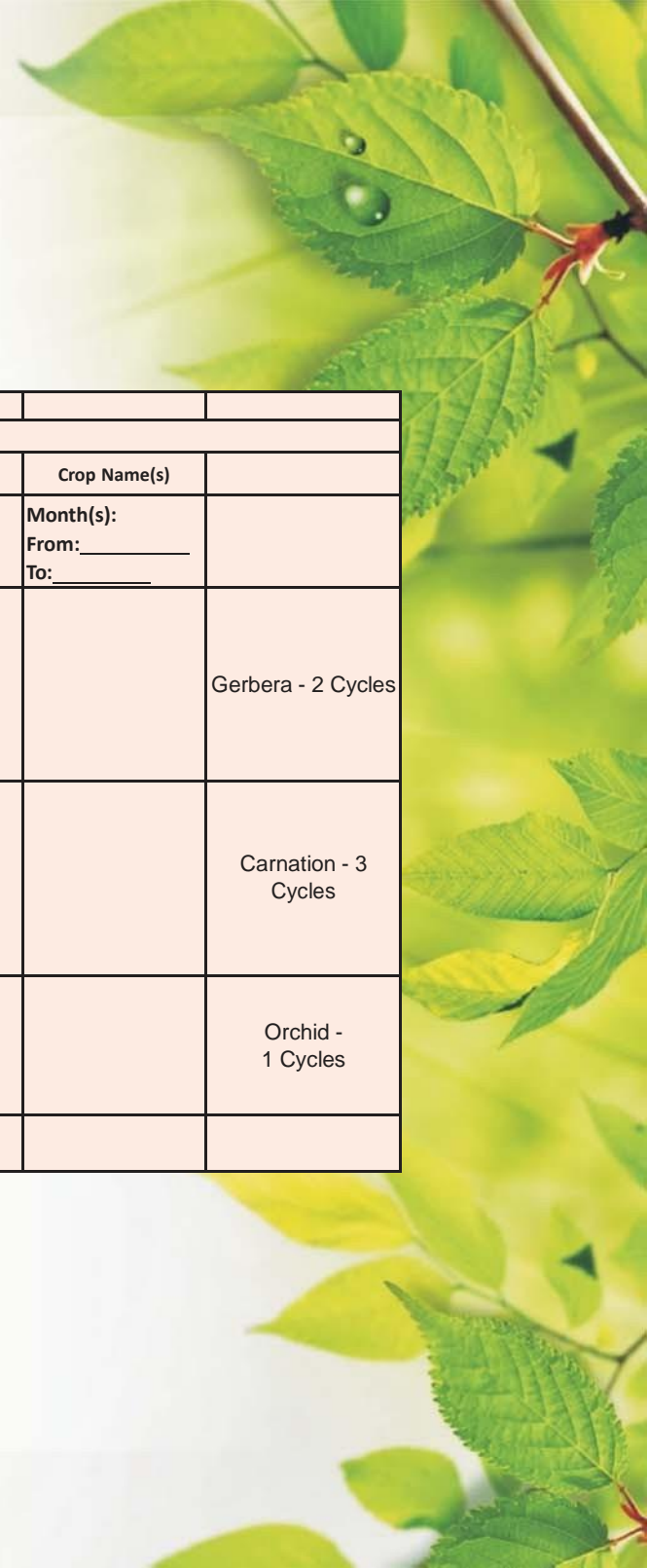


5 YEARS CROP WISE CYCLES FROM 2017-2021

S No	Type of Structure	Location	Size (in SqM)	2017 to 2021					
				Crop Name(s)	Crop Name(s)	Crop Name(s)	Crop Name(s)	Crop Name(s)	
				Month(s): From: _____ To: _____	Month(s): From: _____ To: _____	Month(s): From: _____ To: _____	Month(s): From: _____ To: _____	Month(s): From: _____ To: _____	
1	NVPH-1	CoE-Jeedimetla	2016	Gerbera Month(s): 3 years From: _Dec 2016 To:dec 2019	Gerbera Month(s): 3 years From:_Feb 2020 To:Feb 2023				Gerbera - 2 Cycles
2	NVPH-2	CoE-Jeedimetla	2016	Orchid Month(s): 5 years From: _Jan 2017 To:Dec 2023					Orchid - 1 Cycles
3	NVPH-3	CoE-Jeedimetla	2016	Capsicum Month(s): 9 months From: August 2016 To:March 2017	Month(s): 3 months From: 3rd week May 2017 To:2nd week August 2017	Gerbera Month(s): 3 years From:lat week of August 2017 To:Aug 2020	Gerbera Month(s): 3 years From:Oct 2017 To:Oct 2020	Gerbera Month(s): 3 years From:Nov 2020 To:Nov 2023	Gerbera - 3 Cycles Capsicum-2 Cycles
4	NVPH-4	CoE-Jeedimetla	1008	Dutch Rose Month(s): 5 years From: 4th August 2016 To:August 2021					Rose - 1 - Cycle
5	NVPH-5	CoE-Jeedimetla	1008	Dutch Rose Month(s): 5 years From: 5th August 2016 To:August 2021					Rose - 1 Cycle

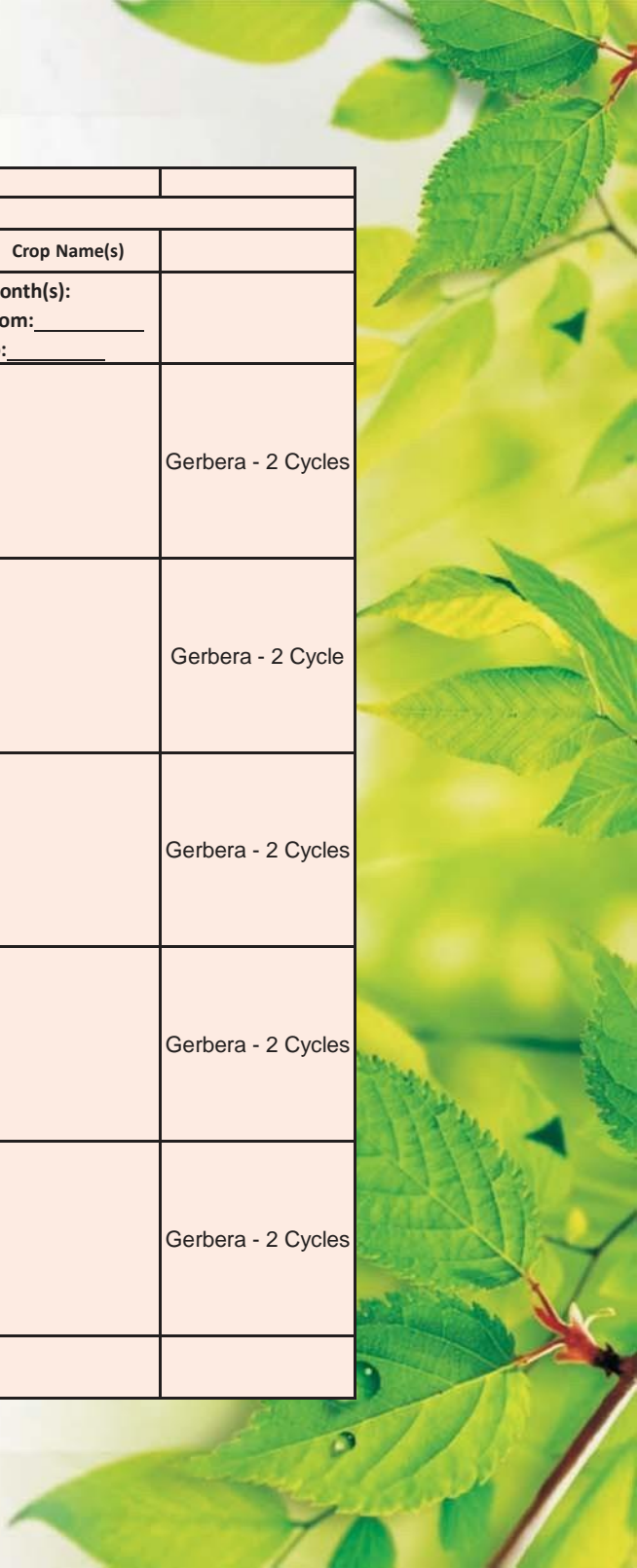


S No	Type of Structure	Location	Size (in SqM)	2017 to 2021					
				Crop Name(s)	Crop Name(s)	Crop Name(s)	Crop Name(s)	Crop Name(s)	
				Month(s): From: _____ To: _____	Month(s): From: _____ To: _____	Month(s): From: _____ To: _____	Month(s): From: _____ To: _____	Month(s): From: _____ To: _____	
6	NVPH-6	CoE-Jeedimetla	1008	Gerbera Month(s): 3 years From: 30th June 2016 To: June 2019	Gerbera Month(s): 3 years From: August 2019 To: August 2022				Gerbera - 2 Cycles
7	NVPH-7	CoE-Jeedimetla	1008	Carnation Month(s): 2.5 years From: 30th June 2016 To: Dec 2018	Carnation Month(s): 2.5 years From: Feb 2019 To: July 2021	Carnation Month(s): 2.5 years From: Sep 2021 To: Feb 2024			Carnation - 3 Cycles
8	NVPH-8	CoE-Jeedimetla	1008	Orchid Month(s): 5 years From: Jan 2017 To: Dec 2022					Orchid - 1 Cycles
TOTAL NVPH (8)		Area in sq mt	11088						



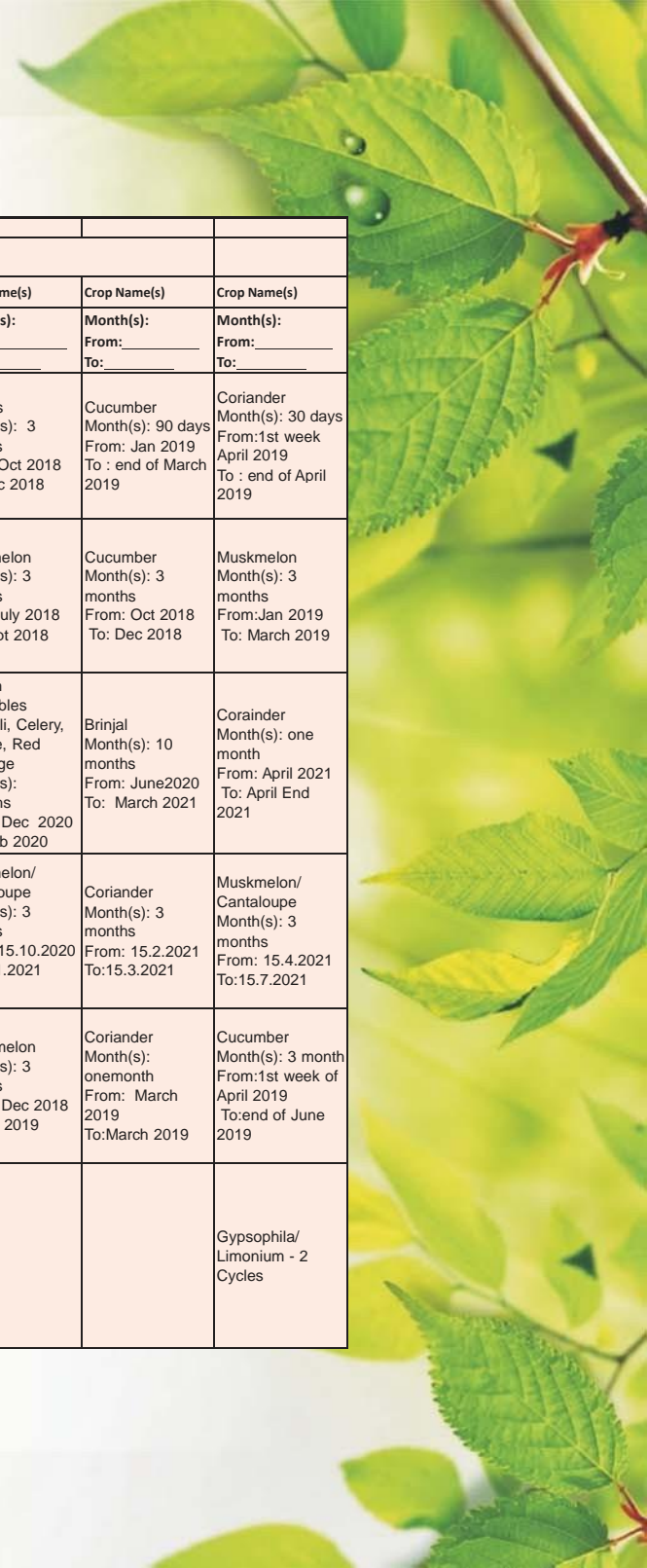


S No	Type of Structure	Location	Size (in SqM)	2017 to 2021					
				Crop Name(s)	Crop Name(s)	Crop Name(s)	Crop Name(s)	Crop Name(s)	
				Month(s): From: _____ To: _____	Month(s): From: _____ To: _____	Month(s): From: _____ To: _____	Month(s): From: _____ To: _____	Month(s): From: _____ To: _____	
9	Polynet Houes-1	CoE-Jeedimetla	2016	Gerbera Month(s): From:2nd week of December 2016 To:December 2019	Gerbera Month(s): From:2nd week of Feb2020 To: Feb 2023				Gerbera - 2 Cycles
10	Polynet Houes-1	Public Gardens-Nampally	1920	Gerbera Month(s): 3 Years From:2nd week of December 2016 To:December 2019	Gerbera Month(s): 3 Years From:2nd week of January 2020 To:December 2023				Gerbera - 2 Cycle
11	Polynet Houes-2	Public Gardens-Nampally	1280	Gerbera Month(s): 3 Years From:2nd week of December 2017 To:December 2020	Gerbera Month(s): 3 Years From:2nd week of January 2020 To:December 2023				Gerbera - 2 Cycles
12	Polynet Houes-3	Public Gardens-Nampally	1344	Gerbera Month(s): 3 Years From:2nd week of December 2017 To:December 2020	Gerbera Month(s): 3 Years From:2nd week of January 2020 To:December 2023				Gerbera - 2 Cycles
13	Polynet Houes-4	Public Gardens-Nampally	1344	Gerbera Month(s): 3 Years From:2nd week of December 2017 To:December 2020	Gerbera Month(s): 3 Years From:2nd week of January 2020 To:December 2023				Gerbera - 2 Cycles
PNH Total(5)		Area in sq mt	7904						





S No	Type of Structure	Location	Size (in SqM)	2017 to 2021										
				Crop Name(s)	Crop Name(s)	Crop Name(s)	Crop Name(s)	Crop Name(s)	Crop Name(s)	Crop Name(s)	Crop Name(s)	Crop Name(s)	Crop Name(s)	
				Month(s): From: To:	Month(s): From: To:	Month(s): From: To:	Month(s): From: To:	Month(s): From: To:	Month(s): From: To:	Month(s): From: To:	Month(s): From: To:	Month(s): From: To:	Month(s): From: To:	
14	WIT-1	CoE- Jeedimetla	500	Lilliums Month(s): 3 months From:23.11.2016 To : March 2017	Coriander Month(s): 30 days From:1st week April 2017 To : end of April 2017	Cucumber Month(s): 90 days From:1st week May 2017 To : end of July 2017	Lilliums Month(s): 3 months From: Sept 2017 To : Nov 2017	Cucumber Month(s): 90 days From:1st week Jan 2018 To : end of March 2018	Coriander Month(s): 30 days From:1st week April 2018 To : end of April 2018	Cucumber Month(s): 90 days From: last week May 2018 To : end of August 2018	Lilliums Month(s): 3 months From: Oct 2018 To :Dec 2018	Cucumber Month(s): 90 days From: Jan 2019 To : end of March 2019	Coriander Month(s): 30 days From:1st week April 2019 To : end of April 2019	
15	WIT-2	CoE- Jeedimetla	500	Cucumber Month(s): 3 months From:27th Oct 2016 To:end of Jan 2017	Muskmelon Month(s): 3 months From:1st week of Feb 2017 To:end of April2017	Corairnder Month(s): one month From:1st week of May2017 To:end of May2017	Cucumber Month(s): 3 months From: July 2017 To:end of Sept 2017	Muskmelon Month(s): 3 months From:Oct 2017 To:Dec 2017	Corairnder Month(s): one month From: 15 th Feb 2018 To:15 th March 2018	Corairnder Month(s): one month From: May 1st week 2018 To:May last week 2018	Muskmelon Month(s): 3 months From:July 2018 To:Sept 2018	Cucumber Month(s): 3 months From: Oct 2018 To: Dec 2018	Muskmelon Month(s): 3 months From:Jan 2019 To: March 2019	
16	WIT-3	CoE- Jeedimetla	500	Brinjal Month(s): 10 months From: 24th Oct 2016 To:August 2017	English vegetables Broccoli, Celery, Lettuce, Red Cabbage Month(s): 3months From: Oct 2017 To:Dec 2017	English vegetables Broccoli, Celery, Lettuce, Red Cabbage Month(s): 3 months From: Jan2018 To:March 2018	Brinjal Month(s): 10 months From: April 2018 To: Jan 2019	Corairnder Month(s): one month From: March 2019 To: March 2019	English vegetables Broccoli, Celery, Lettuce, Red Cabbage Month(s): 3months From: June 2019 To: August 2017	English vegetables Broccoli, Celery, Lettuce, Red Cabbage Month(s): 3months From: Sept 2019 To: Nov 2019	English vegetables Broccoli, Celery, Lettuce, Red Cabbage Month(s): 3months From: Dec 2020 To: Feb 2020	Brinjal Month(s): 10 months From: June2020 To: March 2021	Corairnder Month(s): one month From: April 2021 To: April End 2021	
17	WIT-4	CoE- Jeedimetla	500	Strawberry Month(s): 3 months From: 10th Nov 2016 To:15 th Feb 2017	Muskmelon/ Cantaloupe Month(s): 3 months From: 15.3.2017 To:15.6.2017	Brinjal Month(s): 10 months From: 15.8.2017 To:15.6.2018	Strawberry Month(s): 3 months From: 15.8.2018 To:15.11.2018	Muskmelon/ Cantaloupe Month(s): 3 months From: 15.12.2018 To:15.3.2019	Brinjal Month(s): 10 months From: 15.6.2019 To:15.4.2020	Strawberry Month(s): 3 months From: 15.6.2020 To:15.9.2020	Muskmelon/ Cantaloupe Month(s): 3 months From: 15.10.2020 To:15.1.2021	Coriander Month(s): 3 months From: 15.2.2021 To:15.3.2021	Muskmelon/ Cantaloupe Month(s): 3 months From: 15.4.2021 To:15.7.2021	
18	WIT-5	CoE- Jeedimetla	500	Broccoli Month(s): 3 months From: Nov 2016 To:Jan2017	Musk melon Month(s): 3 months From: Jan 2017 To:April 2017	Cucumber Month(s): 3 month From:1st week of May2017 To:end of July 2017	Broccoli Month(s): 3 months From: Aug 2017 To:Oct 2017	Musk melon Month(s): 3 months From: Dec 2017 To:Feb 2018	Cucumber Month(s): 3 month From:1st week of March2018 To:end of May2018	Broccoli Month(s): 3 months From: July 2018 To:Sept 2017	Musk melon Month(s): 3 months From: Dec 2018 To:Feb 2019	Coriander Month(s): onemonth From: March 2019 To:March 2019	Cucumber Month(s): 3 month From:1st week of April 2019 To:end of June 2019	
19	WIT-6	CoE- Jeedimetla	500	Gypsophila/ Limonium Month(s): 3 Years From:May 2017 To : 2nd week of Dec 2019	Gypsophila/ Limonium Month(s): 3 Years From:2nd week June 2019 To : 2nd week of June 2022									Gypsophila/ Limonium - 2 Cycles





S No	Type of Structure	Location	Size (in SqM)	2017 to 2021									
				Crop Name(s)	Crop Name(s)	Crop Name(s)	Crop Name(s)	Crop Name(s)	Crop Name(s)	Crop Name(s)	Crop Name(s)	Crop Name(s)	Crop Name(s)
				Month(s):	Month(s):	Month(s):	Month(s):	Month(s):	Month(s):	Month(s):	Month(s):	Month(s):	Month(s):
				From: _____ To: _____	From: _____ To: _____	From: _____ To: _____	From: _____ To: _____	From: _____ To: _____	From: _____ To: _____	From: _____ To: _____	From: _____ To: _____	From: _____ To: _____	From: _____ To: _____
				Chrysanthemum Month(s):	Muskumeli	Chrysanthemum Month(s):	Cucumbers	Muskumeli	Chrysanthemum Month(s):	Coriander	Gypsophila		Chrysanthemum - 4 Cycles Muskumeli - 4
21	WIT-8	Public Gardens-Nampally	324	Gypsophila/ Limonium Month(s): 3 Years From: Dec 2016 To : Dec 2019	Gypsophila/ Limonium Month(s): 3 Years From: Feb 2019 To : Feb 2022								Gypsophila/ Limonium Perennial - 4 Cycles
WIT Total	Area in sq mt	4000											

S No	Type of Structure	Location	Size (in SqM)	2017 to 2021									
				Crop Name(s)	Crop Name(s)	Crop Name(s)	Crop Name(s)	Crop Name(s)	Crop Name(s)	Crop Name(s)	Crop Name(s)	Crop Name(s)	Crop Name(s)
				Month(s):	Month(s):	Month(s):	Month(s):	Month(s):	Month(s):	Month(s):	Month(s):	Month(s):	Month(s):
				From: _____ To: _____	From: _____ To: _____	From: _____ To: _____	From: _____ To: _____	From: _____ To: _____	From: _____ To: _____	From: _____ To: _____	From: _____ To: _____	From: _____ To: _____	From: _____ To: _____
22	Vegetable Shade Net-House	CoE-Jeedimetla	2000	Celery, Broccoli, Lettuce and Red Cabbage Month(s): 3 months From: 10 th Dec 2016 To : 15 th March 2017	Coriander Month(s): one month From: 1 .4 2017 To : 30 .4.2017	Leafy vegetables Month(s): one month From: 1 .5 2017 To : 30 .6.2017	Celery, Broccoli, Lettuce and Red Cabbage Month(s): 3 months From: 1.8.2017 To : 30.10.2017	Celery, Broccoli, Lettuce and Red Cabbage Month(s): 3 months From: 1.12.2017 To : 28.2.2018	Coriander Month(s): one month From: 1 .3 2018 To : 30 .3.2018	Leafy vegetables Month(s): one month From: 1 .5 2018 To : 30 .6.2018	Celery, Broccoli, Lettuce and Red Cabbage Month(s): 3 months From: 1.8.2018 To : 30.10.2018	Celery, Broccoli, Lettuce and Red Cabbage Month(s): 3 months From: 1.12.2018 To : 28.2.2019	Coriander Month(s): one month From: 1 .4 2019 To : 30 .4.2019
23	Plug Type Nursery	CoE-Jeedimetla	2000	42.56 lakh seedlings per year	42.56 lakh seedlings per year	42.56 lakh seedlings per year	42.56 lakh seedlings per year	42.56 lakh seedlings per year					



Annexure-6:
Year Wise and Crop Wise Area (in Sq M)

Sl.No	Name of Crop	2017	2018	2019	2020	2021	Total
1	Gerbera (Perennial)	10928	12944	12944	12944	12944	62704
2	Capsicum (Seasonal)	2016					2016
3	Dutch Rose Perennial	2016	2016	2016	2016	2016	10080
4	Carnation Perennial	1008	1008	1008	1008	1008	5040
5	Orchid (Perennial)	3024	3024	3024	3024	3024	15120
6	Lillium (Seasonal)	1000	1000	1000	1000	1000	5000
7	Coriander (Seasonal)	3000	3500	3000	3000	3500	16000
8	Cucumber (Seasonal)	4692	2500	2500	2500	2500	14692
9	Muskmelon (Seasonal)	2676	2676	2000	2000	2000	11352
10	Brinjal (Seasonal)	1000	1000	1000	1000		4000
11	English Vegetables (Seasonal)	6500	6500	6500	6500	6500	32500
12	Strawberry (Seasonal)	500	500	500	500	500	2500
13	Broccoli (Seasonal)	1000	1000	1000	1000	1000	5000
14	Gypsophila/Limonium (Seasonal)	824	824	1500	1500	1500	6148
15	Chrysanthemum ((Seasonal))	1352	676				2028
16	Leafy Vegetables (Seasonal)	2000	2000	2000	2000	2000	10000
17	Grand Total	43536	41168	39992	39992	39492	204180
18	Crop Area in Acres	10.9	10.3	10.0	10.0	9.9	51.0



Visit of Commissioner of Horticulture, TS to CoE



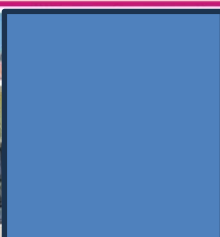
Annexure-7:
Crop Wise Cost of Cultivation of Important Crops
Table:- 8.1-Cost of Cultivation of Gerbera(No of plants per Acre are 24000)

S.No	Cost of Cultivation of Gerbera per 1 Acre	Year Wise Production Area (SqM) / Production Cost (Rs)					
		11936	11936	11936	11936	11936	
	Table A: Land Preparation Cost		2017	2018	2019	2020	2021
	Particulars	Amount					
1	Red soil, pasteurized compost and Neem cake	1338500	3994084			3994084	
2	chemical fertilizer and micro nutrients	20000	59680			59680	
3	Fumigation / bed preparation cost	120000	358080			358080	
	Total (A)	1478500	4411844	0	0	4411844	0
	Table B: Year wise breakup of recurring cost						
SNo	Item / year	Year (1-3)					
1	Planting material cost	603870	1801948			1801948	
2	Fertigation cost (Table B-I)	128750	384190	384190	384190	384190	384190
3	Spraying cost (Table B-II)	57680	172117	172117	172117	172117	172117
4	Packaging cost (Table B - III)	162000	483408	483408	483408	483408	483408
5	Grading expenses (lump sum) & Miscellaneous	100000	298400	298400	298400	298400	298400
6	Transportation cost (Table - IV)	100000	298400	298400	298400	298400	298400
7	Irrigation cost	40000	119360	119360	119360	119360	119360
8	Electricity cost	50000	149200	149200	149200	149200	149200
9	Labour cost (Table - V)	360000	1074240	1074240	1074240	1074240	1074240
10	Insurance @ 5% on depreciated value of polyhouse & micro irrigation system	7013	20927	20927	20927	20927	20927
	Total (B)	1609313	4802190	3000242	3000242	4802190	3000242
	Grand Total (A+B)	2614756	9214034	3000242	3000242	9214034	3000242

1.The Life of Gerbera is 30 months and hence planting material cost is considered for 1st, 3rd Year only.



Gerbera in COE, Jeedimetla



Assumptions used in estimating recurring costs are given below.

Table - I		
Fertilizer cost		
S.No	Particular	Amount / Quantity
1	Fertilizers dose (Kg/day)	5
2	Avg. Rate of fertilizer. Rs/Kg	100
3	Fertigation days	250
4	Fertigation cost	125000
5	Contingency @ 3% of Fertigation cost	3750
	Total Fertigation cost (Rs.)	128750
Table - II		
Spraying cost		
S.No	Particular	Amount / Quantity
1	Spraying cost / day	800
2	Spraying days	70
3	Spraying cost	56000
4	Contingency @ 3% of Spraying cost	1680
	Total Spraying cost (Rs.)	57680
Table - III		
Packing cost		
S.No	Particular	Amount / Quantity
1	No of crates	2700
2	Price per crate	60
	Total cost for crates	162000
Table - IV		
Transportation cost		
S.No	Particular	Amount / Quantity
1	Transportation charges per Kg	
2	Total yield in Kg	
	Total transportation cost	100000
Table - V		
Labour cost		
S.No	Particular	Amount / Quantity
1	Total Man-days	1200
2	Average salary/day/head	300
	Total wages	360000



8.2: Cost of Cultivation of Dendrobium (No of Plants per Acre are 45000)

		Production Area (SqM) / Production Cost (Rs)						
			3024	3024	3024	3024	3024	3024
Table A	Land Preparation Cost		2016	2017	2018	2019	2020	2021
S.No	Particulars	Amount						
1	Benches cost	600000	453600	453600				
2	chemical fertilizer and micro nutrients	20000	15120	15120				
3	media (charcoal 70mt/ac) and labour cost / bed preparation cost	460000	347760	347760				
	Total (A)	1080000	816480	816480	0	0	0	0
Table B	Year wise breakup of recurring cost							
S.No	Item / year	From yr 1 - 5						
1	Planting material cost (45000*60)	2700000	2041200	2041200				
2	Fertigation cost (Table B-I)	128750	97335	97335	97335	97335	97335	97335
3	Spraying cost (Table B-II)	57680	43606	43606	43606	43606	43606	43606
4	Packaging cost (Table B - III)	89950	68002	68002	68002	68002	68002	68002
5	Grading expenses (lumpsum) / supervision cost & Miscellaneous	120000	90720	90720	90720	90720	90720	90720
6	Transportation cost (Table - IV)	100000	75600	75600	75600	75600	75600	75600
7	Irrigation cost	40000	30240	30240	30240	30240	30240	30240
8	Electricity cost	50000	37800	37800	37800	37800	37800	37800
9	Labour cost (Table - V)	360000	272160	272160	272160	272160	272160	272160
10	Insurance @ 5% on depreciated value of polyhouse & micro irrigation system	7013	5302	5302	5302	5302	5302	5302
	Total (B)	3653393	2761965	2761965	720765	720765	720765	720765
	Grand Total (A+B)	4606786	3578445	3578445	720765	720765	720765	720765



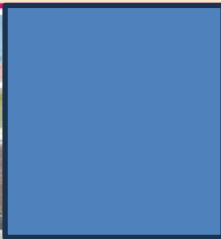
Assumptions used in estimating recurring costs are given below.

Table - I		
Fertilizer cost		
S.No	Particular	Amount / Quantity
1	Fertilizers dose (Kg/day)	5
2	Avg. Rate of fertilizer. Rs/Kg	100
3	Fertigation days	250
4	Fertigation cost	125000
5	Contingency @ 3% of Fertigation cost	3750
	Total Fertigation cost (Rs.)	128750
Table - II		
Spraying cost		
S.No	Particular	Amount / Quantity
1	Spraying cost / day	800
2	Spraying days	70
3	Spraying cost	56000
4	Contingency @ 3% of Spraying cost	1680
	Total Spraying cost (Rs.)	57680
Table - III		
Packing cost		
S.No	Particular	Amount / Quantity
1	No of crates	2700
2	Price per crate	60
	Total cost for crates	162000
Table - IV		
Transportation cost		
S.No	Particular	Amount / Quantity
1	Transportation charges per Kg	
2	Total yield in Kg	
	Total transportation cost	100000
Table - V		
Labour cost		
S.No	Particular	Amount / Quantity
1	Total Man-days	1200
2	Average salary/day/head	300
	Total wages	360000

2.The Life of Dendrobium (or Orchids) is 5 years and hence planting material cost is considered for 1st year only.



Orchids in Farmers Poly House in Hathnoora (V) Medak (D)



8.3: Cost of Cultivation of Dutch Roses : (No of plants 36000 per Acre)

		Production Area (SqM) / Production Cost (Rs)						
			2016	2016	2016	2016	2016	2016
Table A	Land Preparation Cost		2016	2017	2018	2019	2020	2021
S.No	Particulars	Amount						
1	Red soil, pasteurized compost and Neem cake and paddy husk	1340500	675612	675612				
2	chemical fertilizer and micro nutrients	10000	5040	5040				
3	fumigation / bed preparation cost	60000	30240	30240				
	Total	1410500	710892	710892	0	0	0	0
Table B	Year wise breakup of recurring cost							
S.No	Item / year	From year 1 to 10						
1	Planting material cost (36000 x 10)	360000	181440	181440				
2	Fertigation cost (Table B-I)	50000	25200	25200	25200	25200	25200	25200
3	Spraying cost (Table B-II)	26667	13440	13440	13440	13440	13440	13440
4	Packaging cost (Table B - III)	10000	5040	5040	5040	5040	5040	5040
5	Grading expenses (lumpsum) & Miscellaneous	30000	15120	15120	15120	15120	15120	15120
6	Transportation cost (Table - IV)	10000	5040	5040	5040	5040	5040	5040
7	Irrigation cost & miscellaneous	40000	20160	20160	20160	20160	20160	20160
8	Electricity cost	12000	6048	6048	6048	6048	6048	6048
9	Labour cost (Table - V)	198000	99792	99792	99792	99792	99792	99792
10	Insurance @ 5% on depreciated value of polyhouse & micro irrigation system	7013	3535	3535	3535	3535	3535	3535
	Total (B)	743680	374815	374815	193375	193375	193375	193375
	Grand Total (A+B)	1127359	1085707	1085707	193375	193375	193375	193375

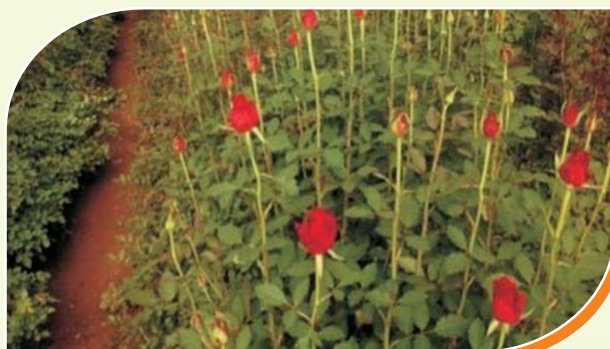
3.The Life of Dutch Rose is 10 years and hence planting material cost is considered for 1st Year only.



Assumptions used in estimating recurring costs are given below.

Table - I		
Fertilizer cost		
S.No	Particular	Amount / Quantity
1	Fertilizers dose (Kg/day)	5
2	Avg. Rate of fertilizer (Rs/Kg)	150
3	Fertigation days	50
4	Fertigation cost	37500
5	Contingency @ 3% of Fertigation cost	12500
	Total Fertigation cost (Rs.)	50000
Table - II		
Spraying cost		
S.No	Particular	Amount / Quantity
1	Spraying cost / day	400
2	Spraying days	50
3	Spraying cost	20000
4	Contingency @ 3% of Spraying cost	6667
	Total Spraying cost (Rs.)	26667
Table - III		
Packing cost		
S.No	Particular	Amount / Quantity
1	No of crates	
2	Price per crate	
	Total cost for crates	10000
Table - IV		
Transportation cost		
S.No	Particular	Amount / Quantity
1	Transportation charges per Kg	
2	Total yield in Kg	
	Total transportation cost	10000
Table - V		
Labour cost		
S.No	Particular	Amount / Quantity
1	Total Man-days	660
2	Average salary per day per head	300
	Total wages	198000

2.The Life of Dendrobium (or Orchids) is 5 years and hence planting material cost is considered for 1st year only.



Dutch Roses in Poly House



8.4: Cost of Cultivation of Carnation: (No of plants 84000 per Acre)

		Production Area (SqM) / Production Cost (Rs)						
			1008	1008	1008	1008	1008	1008
Table A	Land Preparation Cost		2016	2017	2018	2019	2020	2021
S.No	Particulars	Amount						
1	Red soil, pasteurized compost and neem cake and paddy husk	1330500	335286	335286		335286		
2	chemical fertilizer and micro nutrients	5000	1260	1260		1260		
3	Fumigation / bed preparation cost	60000	15120	15120		15120		
	Total	1395500	351666	351666	0	351666	0	0
Table B	Year wise breakup of recurring cost							
S.No	Item / year	From year 1 to 3						
1	Planting material cost (84000 x 11) & cost of trellising	999000	251748	251748			251748	
2	Fertigation cost (Table B-I)	50000	12600	12600	12600	12600	12600	12600
3	Spraying cost (Table B-II)	26667	6720	6720	6720	6720	6720	6720
4	Packaging cost (Table B - III)	10000	2520	2520	2520	2520	2520	2520
5	Grading expenses (lumpsum) & Miscellaneous	30000	7560	7560	7560	7560	7560	7560
6	Transportation cost (Table - IV)	10000	2520	2520	2520	2520	2520	2520
7	Irrigation cost & miscellaneous	30000	7560	7560	7560	7560	7560	7560
8	Electricity cost	12000	3024	3024	3024	3024	3024	3024
9	Labour cost (Table - V)	222000	55944	55944	55944	55944	55944	55944
10	Insurance @ 5% on depreciated value of polyhouse & micro irrigation system	7013	1767	1767	1767	1767	1767	1767
	Total (B)	1396680	351963	351963	100215	351963	100215	100215
	Grand Total (A+B)	1794359	703629	703629	100215	703629	100215	100215

Note: The Life of Carnation plant is 30 months and hence planting material cost is considered for 1st and 3rd years only.



Assumptions used in estimating recurring costs are given below.

Table - I		
Fertilizer cost		
S.No	Particular	Amount / Quantity
1	Fertilizers dose (kg/day)	5
2	Avg. Rate of fertilizer. Rs/kg	150
3	Fertigation days	50
4	Fertigation cost	37500
5	Contingency @ 3% of Fertigation cost	12500
	Total Fertigation cost (Rs.)	50000
Table - II		
Spraying cost		
S.No	Particular	Amount / Quantity
1	Spraying cost / day	400
2	Spraying days	50
3	Spraying cost	20000
4	Contingency @ 3% of Spraying cost	6667
	Total Spraying cost (Rs.)	26667
Table - III		
Packing cost		
S.No	Particular	Amount / Quantity
1	No of crates	
2	Price per crate	
	Total cost for crates	10000
Table - IV		
Transportation cost		
S.No	Particular	Amount / Quantity
1	Transportation charges per kg	
2	Total yield in kg	
	Total transportation cost	10000
Table - V		
Labour cost		
S.No	Particular	Amount / Quantity
1	Total Man-days	740
2	Avg salary/day/head	300
	Total wages	222000



Carnation in COE, Jeedimetla



8:5 Cost of Cultivation of Capsicum (No of plants 12000 per acre)

		Production Area (SqM) / Production Cost (Rs)						
			-	2016	-	-	-	-
Table A	Land Preparation Cost		2016	2017	2018	2019	2020	2021
S.No	Particulars	Amount						
1	Red soil, pasteurized compost and neem cake and paddy husk	1350500	0					
2	chemical fertilizer and micro nutrients	30000	0					
3	fumigation / bed preparation cost	80000	0					
	Total (A)	1460500	0	0	0	0	0	0
Table B	Year wise breakup of recurring cost							
S.No	Item / year	From year 1 to 7						
1	Planting material cost & trellising cost	100000	0	50400	0	0	0	0
2	Fertigation cost (Table B-I)	41200	0	20765	0	0	0	0
3	Spraying cost (Table B-II)	42667	0	21504	0	0	0	0
4	Packaging cost (Table B - III)	60000	0	30240	0	0	0	0
5	Grading expenses (lumpsum) & Miscellaneous	100000	0	50400	0	0	0	0
6	Transportation cost (Table - IV)	60000	0	30240	0	0	0	0
7	Irrigation cost	40000	0	20160	0	0	0	0
8	Electricity cost	50000	0	25200	0	0	0	0
9	Labour cost (Table - V)	180000	0	90720	0	0	0	0
10	Insurance @ 5% on depreciated value of polyhouse & micro irrigation system	7013	0	3535	0	0	0	0
	Total (B)	680880	0	343163	0	0	0	0
	Grand Total (A+B)	1261759	0	343163	0	0	0	0



Assumptions used in estimating recurring costs are given below.

Table - I		
Fertilizer cost		
S.No	Particular	Amount / Quantity
1	Fertilizers dose (kg/day)	5
2	Avg. Rate of fertiliser. Rs/kg	200
3	Fertigation days	40
4	Fertigation cost	40000
5	Contingency @ 3% of Fertigation cost	1200
	Total Fertigation cost (Rs.)	41200
Table - II		
Spraying cost		
S.No	Particular	Amount / Quantity
1	Spraying cost / day	800
2	Spraying days	40
3	Spraying cost	32000
4	Contingency @ 3% of Spraying cost	10667
	Total Spraying cost (Rs.)	42667
Table - III		
Packing cost		
S.No	Particular	Amount / Quantity
1	No of crates	
2	Price per crate	
	Total cost for crates	60000
Table - IV		
Transportation cost		
S.No	Particular	Amount / Quantity
1	Transportation charges per kg	
2	Total yield in kg	
	Total transportation cost	60000
Table - V		
Labour cost		
S.No	Particular	Amount / Quantity
1	Total Man-days	600
2	Avg salary/day/head	300
	Total wages	180000



Capsicum in COE, Jeedimetla



8.6: Cost of Cultivation of Cucumber (No of plants 12000 per acre)

		Production Area (SqM) / Production Cost (Rs)						
			0	5192	2500	2500	2500	2500
Table A	Land Preparation Cost		2016	2017	2018	2019	2020	2021
S.No	Particulars	Amount						
1	Red soil, pasteurized compost and neem cake and paddy husk	1338500	0					
2	chemical fertilizer and micro nutrients	30000	0					
3	fumigation / bed preparation cost	80000	0					
	Total	1448500	0	0	0	0	0	0
Table B	Year wise breakup of recurring cost							
S.No	Item / year	From year 1 to 7						
1	Planting material cost & trellising cost	70000	0	90860	43750	43750	43750	43750
2	Fertigation cost (Table B-I)	85333	0	110763	53333	53333	53333	53333
3	Spraying cost (Table B-II)	42667	0	55381	26667	26667	26667	26667
4	Packaging cost (Table B - III)	40000	0	51920	25000	25000	25000	25000
5	Grading expenses (lumpsum)& Miscellaneous	100000	0	129800	62500	62500	62500	62500
6	Transportation cost (Table - IV)	60000	0	77880	37500	37500	37500	37500
7	Irrigation cost & miscellaneous	40000	0	51920	25000	25000	25000	25000
8	Electricity cost	50000	0	64900	31250	31250	31250	31250
9	Labour cost (Table - V)	270000	0	350460	168750	168750	168750	168750
10	Insurance @ 5% on depreciated value of polyhouse & micro irrigation system	7013	0	9103	4383	4383	4383	4383
	Total (B)	765013	0	992987	478133	478133	478133	478133
	Grand Total (A+B)	1460026	0	992987	478133	478133	478133	478133

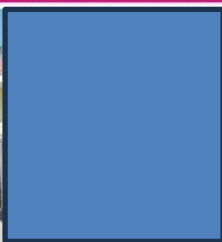


Assumptions used in estimating recurring costs are given below.

Table - I		
Fertilizer cost		
S.No	Particular	Amount / Quantity
1	Fertilizers dose (kg/day)	8
2	Avg. Rate of fert. Rs/kg	200
3	Fertigation days	40
4	Fertigation cost	64000
5	Contingency @ 3% of Fertigation cost	21333
	Total Fertigation cost (Rs.)	85333
Table - II		
Spraying cost		
S.No	Particular	Amount / Quantity
1	Spraying cost / day	800
2	Spraying days	40
3	Spraying cost	32000
4	Contingency @ 3% of Spraying cost	10667
	Total Spraying cost (Rs.)	42667
Table - III		
Packing cost		
S.No	Particular	Amount / Quantity
1	No of crates	
2	Price per crate	
	Total cost for crates	40000
Table - IV		
Transportation cost		
S.No	Particular	Amount / Quantity
1	Transportation charges per kg	
2	Total yield in kg	
	Total transportation cost	60000
Table - V		
Labour cost		
S.No	Particular	Amount / Quantity
1	Total Man-days	900
2	Avg salary/day/head	300
	Total wages	270000



Cucumber in COE, Jeedimetla



8.7: Cost of Cultivation of Musk melon (No of plants 12000 per acre)

		Production Area (SqM) / Production Cost (Rs)						
			1000	2676	2676	2000	2000	2000
Table A	Land Preparation Cost		2016	2017	2018	2019	2020	2021
S.No	Particulars	Amount						
1	Red soil, pasteurized compost and neem cake and paddy husk	1338500	334625	95456.5	895456.5	669250	669250	669250
2	chemical fertilizer and micro nutrients	30000	7500	20070	20070	15000	15000	15000
3	fumigation / bed preparation cost	80000	20000	53520	53520	40000	40000	40000
	Total	1448500	362125	969046.5	969046.5	724250	724250	724250
Table B	Year wise breakup of recurring cost							
S.No	Item / year	From year 1 to 7						
1	Planting material cost & trellising cost	70000	17500	46830	46830	35000	35000	35000
2	Fertigation cost (Table B-I)	85333	21333	57088	57088	42667	42667	42667
3	Spraying cost (Table B-II)	42667	10667	28544	28544	21333	21333	21333
4	Packaging cost (Table B - III)	40000	10000	26760	26760	20000	20000	20000
5	Grading expenses (lumpsum)& Miscellaneous	100000	25000	66900	66900	50000	50000	50000
6	Transportation cost (Table - IV)	60000	15000	40140	40140	30000	30000	30000
7	Irrigation cost & miscellaneous	40000	10000	26760	26760	20000	20000	20000
8	Electricity cost	50000	12500	33450	33450	25000	25000	25000
9	Labour cost (Table - V)	270000	67500	180630	180630	135000	135000	135000
10	Insurance @ 5% on depreciated value of polyhouse & micro irrigation system	7013	1753	4692	4692	3507	3507	3507
	Total (B)	765013	191253	511794	511794	382507	382507	382507
	Grand Total (A+B)	1460026	553378	1480840	1480840	1106757	1106757	1106757



Assumptions used in estimating recurring costs are given below.

Table - I		
Fertilizer cost		
S.No	Particular	Amount / Quantity
1	Fertilizers dose (kg/day)	8
2	Avg. Rate of fert. Rs/kg	200
3	Fertigation days	40
4	Fertigation cost	64000
5	Contingency @ 3% of Fertigation cost	21333
	Total Fertigation cost (Rs.)	85333
Table - II		
Spraying cost		
S.No	Particular	Amount / Quantity
1	Spraying cost / day	800
2	Spraying days	40
3	Spraying cost	32000
4	Contingency @ 3% of Spraying cost	10667
	Total Spraying cost (Rs.)	42667
Table - III		
Packing cost		
S.No	Particular	Amount / Quantity
1	No of crates	
2	Price per crate	
	Total cost for crates	40000
Table - IV		
Transportation cost		
S.No	Particular	Amount / Quantity
1	Transportation charges per kg	
2	Total yield in kg	
	Total transportation cost	60000
Table - V		
Labour cost		
S.No	Particular	Amount / Quantity
1	Total Man-days	900
2	Avg salary/day/head	300
	Total wages	270000



Tomato in Poly House





Road side Green Belt Plantation at CoE, Jeedimetla



Landscape Work & Solar Street Lighting inside CoE, Jeedimetla



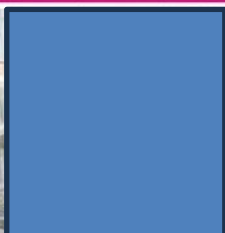
Success Story - Capsicum - Poly House Cultivation



1	FARMER NAME	B. Srinivas
2	VILLAGE	Ibrahimabad(V)
3	MANDAL	Narsapur (M)
4	DISTRICT	Medak Dist.
5	CONTACT	9849247033
6	AREA	1 acre
7	CROP	Capsicum
8	VARIETY	Indra
9	COST OF CULTIVATION	Rs. 3.00 Lakhs
10	YIELD OBTAINED PER ACRE	40 Tonnes
11	MARKET PRICE (per MTs)	Rs. 20000/-
12	GROSS RETURNS	Rs. 8.00 Lakhs
13	NET RETURNS	Rs. 5.00 Lakhs
14	ADDITIONAL INCOME DUE TO POLY HOUSES	Rs. 4.00 Lakhs

Success Story - Gerbera – Poly House Cultivation

1	FARMER NAME	B.Chandrasekhar
2	FATHER'S NAME	Narayana
3	VILLAGE	Nazdik singaram
4	MANDAL	Yacharam
5	DISTRICT	Ranga Reddy
6	PHONE NO.	9010700067
7	AREA	1.00 acre
8	CROP	Gerbera
9	COST OF EACH FLOWER	Rs. 3/-
10	YIELD	1, 20,000 flowers per month.
11	GROSS INCOME PER MONTH	Rs.3,60,000/-
12	EXPENDITURE INCLUDING MAINTENANCE	Rs.1,20,000/- per month
13	NET INCOME	Rs. 2,40,000/-



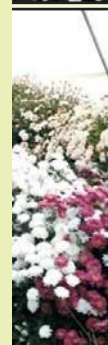
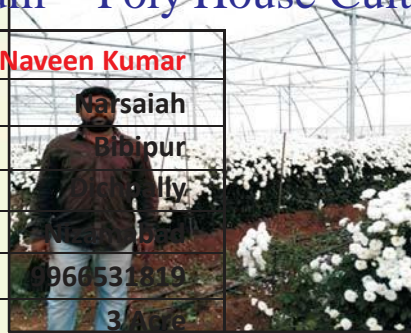
Success Story - Dendrobium – Poly House Cultivation



1	FARMER NAME	Samir Bhagat
2	FATHER'S NAME	Bhagat
3	VILLAGE	Devulapally
4	MANDAL	Hathnoor
5	DISTRICT	Sanga Reddy
6	PHONE NO.	9849007211
7	AREA	3 Acre
8	CROP	Dendrobium
9	TECHNOLOGY	Benches with GI frame and shade net, with beds made of cocobricks and charcoal
10	COST OF EACH FLOWER	Rs. 10/-
11	NO. OF FLOWERS PER ACRE PER YEAR	1.60 Lakhs
12	TOTAL GROSS INCOME	48 Lakhs
13	EXPENDITURE	12 Lakhs (fertilizers, pesticides, electricity and labour charges)
14	NET INCOME (Estimated)	36 Lakhs per year from second year

Success Story - Chrysanthemum – Poly House Cultivation

1	FARMER NAME	M. Naveen Kumar
2	FATHER'S NAME	M. Saiah
3	VILLAGE	Bhobpur
4	MANDAL	Bhobpur
5	DISTRICT	Bhobpur
6	PHONE NO.	9966531819
7	AREA	3 Acre
8	CROP	Chrysanthemum
9	VARIETY	Carona (Yellow) Pitoria (White) Retana (Red) Persia (Blue)
10	COST OF EACH FLOWER	Rs. 8/- per stem
11	NO. OF FLOWERS PER ACRE PER YEAR	2,00,000 plants per acre
12	TOTAL GROSS INCOME	16 Lakhs
13	EXPENDITURE	8 Lakhs (fertilizers, pesticides and labour charges)
14	NET INCOME	8 Lakhs for 3 months (3 crops per year)



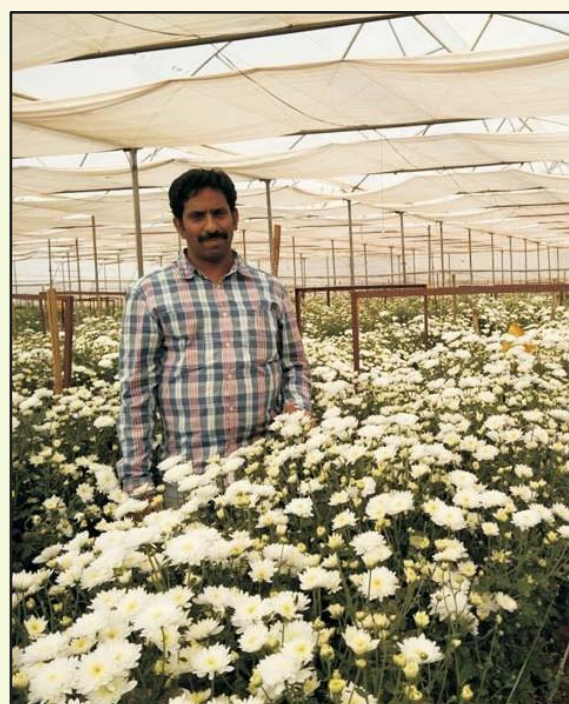
Success Story - Carnation- Poly House Cultivation



1	FARMER NAME	Smt. Durga kumari
2	W/O	Ramakrishna
3	VILLAGE	Dundigal
4	MANDAL	Qutbullapur
5	PHONE NO	9849909909
6	DISTRICT	Ranga Reddy
7	AREA	9300 sqmt
8	CROP	Carnation
9	YEAR OF SANCTION	2014-15
10	COST OF EACH BUNCH	Rs. 140/-
11	NO. OF FLOWERS PER DAY	12000 (600 bunches)
12	TOTAL BUNCHES IN A YEAR	90,000
13	GROSS INCOME	90000 x 140 = 1.26 cr
14	EXPENDITURE	48 lakhs
15	NET INCOME PER 9000 sq.mt	78 Lakhs per year

Success Story - Chrysanthemum– Poly House Cultivation

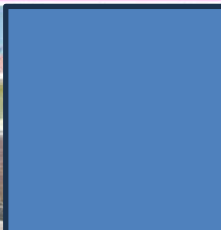
1	FARMER NAME	Dasari Srinivas Reddy
2	FATHER NAME	D. Madhusudhan Reddy
3	VILLEGE	Solipeta
4	MANDAL	Bommala Ramaram
5	DISTRICT	YADADRI
6	ADOPTED METHOD	POLY HOUSE with Drip irrigation
7	AREA IN Ha.	0.4 Ha
8	CONTACT NO.	9705105200
9	CROP	Chrysanthemum / 90 days
10	VARITIES	White, Pink, Yellow, Purple
11	Cost of Cultivation per Acre per acre)	(160000 plants Rs. 8,00,000/-
12	Yield obtained per Acre [Bunch (10 stocks)]	17000 Bunches
13	Average Market Price [Bunch (10 stocks)]	Rs. 60/- per Bunch
14	Gross Returns per Acre	Rs. 10,20,000/-
15	Net Returns per Acre for 1st crop	Rs. 2,20,000/-
16	Net Returns for total 3 seasons in a year	Rs. 6,60,000/-



Success Story - Capsicum– Poly House Cultivation



1	FARMER NAME	N. Panduranga Reddy
2	VILLAGE	Talakondapally (V)
3	MANDAL	Talakondapally (M)
4	DISTRICT	Mahabubnagar Dist.
5	CONTACT	9948523431
6	AREA	3000 Sq.mts
7	CROP	Capsicum
8	VARIETY	Bachata (Yellow), Inspiration (Red)
9	COST OF CULTIVATION	Rs.3.00 Lakhs
10	YIELD OBTAINED PER ACRE	40 Tonnes
11	MARKET PRICE (per MTs)	Rs. 20000/-
12	GROSS RETURNS	Rs. 8.00 Lakhs
13	NET RETURNS	Rs. 5.00 Lakhs



Document Prepared by Technical Team

1. Sri B.Babu, DHSO-Rangareddy – Chairman
2. Sri K.Venugopal, DHSO-Medchal – Member Convenor.
3. Sri G.RajKumar, ADH, CoE – Member
4. Smt. P.Lahari, ADH, MIDH – Member
5. Smt. K.Latha, ADH, Polyhouse – Member
6. Sri P.Yadagiri, ADH, NZB – Member
7. Smt. K. Sridevi, HO, RR – Consolidating Officer
8. NABCONS, Hyd.

Co-opted Members:

9. Sri B. Vijay Prasad, DDH, GG
10. Sri M. Chandrasekhar, HO, HTI