

**Project report
on
Ornamental Nursery**



Submitted by :

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Executive Summary(nursery):

- Venture is going to be established in own land .
- Expenditure cost includes Green house, Cold storage, site development, procurement o mother plants.
- Technology adopted: cold storage, pot nursery, poly bag nurery.
- Selection of parent plants(bird of paradise, Anthurium , Carnation ,rose , Orchids ,cactus succulents ,Turf grasses ,tree crops, foliage crops)are going to established.,
- From the total cot o the project
- Bank loan =85%
- Own contribution =15%
- Market potential is high because availability of ornamental nursery in local area is less
- And there is great demand is high
- Fixed assets are green house ,mother plants nursery ,cold storage units, irrigation channels
- Production ornamental plants of through good agricultural practices

1.Highlights of the projects report:

S.No	Parameters	Values
1	Ornamental plants	
2	Unit size	1.5 ac
3	Cost of the project	782900
4	Bank loan	665465
5	Margin money	117435
6	Financial indicators	
	BCR	1.623
	NPW	564418
	IRR	31.65
	DSCR	1.45
7	Interest rate	12%
8	Repayment period	1+3 years

Chapter 1.B- About the Promoter:

Name of the entrepreneur : **Kumareh R**

Address & communication : **No.42, Pennai garden ,U.C Chavadi ,Cuddalore**

Sex : **Male**

Date of birth : **22/10/1996**

Education : **B.Sc. agriculture**

Cast : **MBC**

Training : **Ac&abc scheme in agcass erode**

Work experience : **6 Months**

Martial status : **Unmarried**

Mobile : **7708810012**

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Chapter 2 -Project Description

Ornamental Nursery

There has been increasing demand for horticultural crops more particularly fruit and ornamental ones in both urban and rural areas of India. With this, the demand for good quality planting materials has gone up and hence the nursery business has developed rapidly in the recent years in our country. Nursery product is no longer restricted to orchards or large parks and gardens. It has entered into high rise buildings, offices, factories, business houses, hospitals, hotels, backyards, roadsides in cities, roof tops, etc. for decoration purpose. Heavy demand is observed during festive seasons and seasons of fairs and melas. Ornamental nursery business has, therefore, come up in a large scale in areas near city and towns.

I. Establishment of nursery

Nursery is developed gradually. The mother plants planted for vegetative and seed propagation and seed propagated plants such as seasonal flower, seedlings are raised for sale simultaneously.

Selection of site : The site selected for raising a nursery is *bahour* near *Puducherry* which is preferably located near marketing centres for the convenience of transportation of the products with minimum or no damage. The site is convenient enough for transportation of input materials also. There is perennial source of water inside the nursery. For wind breaks, Tall plants like eucalyptus, aonla, seedling mango, etc. are yet to be planted to provide necessary shade and protection.

Product choice : The product chosen primarily depends on the market demand in nearby areas. Varieties of various ornamental plants like

1. Foliage plants
2. Flowering plants
3. Creepers
4. Cacti and Succulents
5. Palms and Cycads
6. Grasses

And plants suitable for parks, gardens and roadside plantations, offices, business houses, hospitals, residential buildings, etc. may be propagated in the nursery.

Some ornamental species are provided in annexure I.

Methods of propagation : Plants may be raised from seeds or by vegetative propagation. Some important aspects of propagation are summarised below :

1. Raising from seeds : Germination from seeds may not be 100% even if the seeds are sown in perfect conditions. The factors that control the germination are age, stage of maturity and viability of seeds, water, free supply of oxygen and the heat or temperature. Some seeds do not

germinate easily for variety of reasons such as the dormancy, rest period and presence of hard seed coat. Seeds with hard coats (e.g. palm, cannes, etc.) require some kind of external treatment for germination. Cracking of the coats by mechanical means, abrasion, soaking in water or acid and stratification are some methods commonly applied .Before sowing on a large scale, it is worthwhile to test the viability of the seeds.

2. **Vegetative Propagation** : Safe methods of vegetative propagation such as cutting, layering, division, separation, budding and grafting are adopted for multiplication of ornamental plants.
 - **Cutting** : Plant parts that are normally used for this purpose are stems, roots, leaves and modified stems such as tubers, corms and rhizomes, runners and bulbs. This method is very popular, particularly because it is the cheapest and most convenient one.
 - **Layering** : The method of inducing roots in a stem which is still attached to the plant and then detaching it after the root is formed for transplanting is called a layering or layerage. Mostly creepers and trees are raised by this method. Some herbaceous plants such as carnation, chrysanthemum, etc. can be raised by layering.
3. **Division and Separation** : The plants which produce masses of stems at ground level, each having its own root system are lifted from ground and divided into individuals. This is called division. In separation, the rooted or unrooted parts usually detach themselves on maturity and start or develop as a new individual next season. Plants like chrysanthemum, tube rose, Russelia juncea and most of the herbaceous perennials are easily propagated by division. Bulb hyacinth and crocus are examples of plants that can be propagated by separation. Suckers, rhizomes, tubers, runners, stolons, bulbs, corms, bulbils, etc., are some other plant parts which are used for vegetative propagation.
4. **Grafting** : Grafting, except budding (which is also a form of grafting) is not widely used in ornamental horticulture except in a few cases. The types of grafting which are used in ornamental plants are limited to inarching, side grafting, splice grafting, saddle grafting, flat grafting and cleft grafting. Inarching is followed in the propagation of roses in some parts of the country. The method of side grafting is followed in case of roses, camellias, etc.
5. **Budding** : In ornamental horticulture, mostly 'T'-budding or 'Shield' budding is employed for propagation.
6. **Tissue culture** : The propagation of orchid through meristem culture was the first commercially successful venture in tissueculture. The principles of tissue culture can be successfully employed in respect of ornamental plants with soft tissues. Quite a large number of ornamental plants are reported to respond to propagation by tissue culture method. Few such plants are gladiolus, carnation, lily, rose, gerbera, anthurium, magnolia, fern, cacti, etc. Propagation of ornamental plants by this method is gaining popularity

Physical programme : For this model, the following physical programme is considered :

		Year I	Year II	III Onwards
1	Development of mother plants (500 Nos. of plants of different varieties)	1200 sqm	-	-
2	Raising pot plants (Nos.)	2000	3000	4000
3	Seedbed nursery :	15000	18000	21000
	Poly bag seedlings (Nos.)	15000	18000	21000
	Ball seedlings (Nos.)			

Structures required : A number of structures may be necessary for raising a nursery. To begin with, the following structures need to be constructed :

1. Workshed : The workshed of 6 m x 5 m with thatch roofs and locally available materials like bamboo, wood, etc. may be constructed. Total amount of Rs.10000/- . has been considered for this purpose.
2. Cold storage unit:It is necessary to store harvested flowers or a period of time ,hence a cold storage unit is required. The estimate cost o cold storage is 200000/-
3. Store-cum-office: A store-cum-office of 6.0m x 5.0 m constructed with locally available materials may serve the purpose. For this, a rate of Rs. 400/- per sq.m. has been considered adequate.
4. Fencing : A goat proof fencing only will be effective for a nursery. For this model of 1.5 acre area, an amount of Rs.90000.00 has been considered as the total cost for erecting a goat-proof fencing around the boundary.

Land preparation : The land development for nursery is very important. In nursery, the land may be divided into minimum four parts:

- Area for mother plant,
- Area for seed production,
- Area for raising flower seedlings and

- Area for storing of seedlings or vegetatively propagated perennial plants.

The land of a nursery is prepared by ploughing and cross ploughing. All kinds of waste materials are to be removed and the land must be levelled properly.

Allocation of space :

For this model, a nursery covering a total area of 0.5 acre is considered. The space allocation for different purposes is as under :-

Space for	Sq.m.
Mother Plants	1200
Pot Nursery	1000
Polybag Nursery	1500
Ball Nursery including beds	1500
Working shed	30
Cold storage	40
Store cum office	30
Total	5300
15% additional for passage, drainage, etc.	720
Grand Total	6020
	Approx. = 1.5 acre

II. Management of Nursery

Seedbed and nursery beds : For raising flower seedlings, some permanent or temporary structures for seed bed may be prepared. These beds will be minimum 0.5 to 0.75 m high from ground level. The beds may be 0.75m to 1.00m in breadth and length may be as per the availability of land. The nursery beds will be prepared for storing of perennial plants or the plants that should be kept for sale.

Collection and planting of mother plants : The plantation of mother plants is an important work for developing a nursery. The mother plants must be true to the type and true to the variety. The plants should be properly labelled. Collection of exotic type of mother plants is a continuous process. The mother plants may be maintained properly for their vigorous growth; otherwise number of propagated plants will get reduced.

Storage of dried, cleaned soil and compost manure : For raising flower seedlings during rainy or early winter season, the soil and compost would be stored during hot or summer months. In rainy season, collection of dried soil and manure is very difficult. Without these, the seedlings cannot be raised during rainy season.

Production of flower seeds : Production of flower seeds is highly specialized job. The seeds should be produced carefully. If the quality of seed is good, the percentage of seed germination, seedlings vigour, vegetative and reproductive growth of the crops will be good. After harvesting of quality seeds, germination percentage of seeds and seedling vigour should be checked before marketing of seeds.

Storage of propagated plants in nursery beds : The propagated plants are planted in nursery beds for better growth or hardening the plants. In general, this type of nursery bed is prepared under partial shade.

Manuring : Manuring is to be done very carefully. Vigorous growth of plant is always attractive to the buyer. Again, heavy manuring is not beneficial for storage of plants.

Watering : Like manuring, watering is also important. Watering will be done according to need of the plant. Implementation of Drip system along with mist chamber fully automatic make sure to plant get adequate water suppl. The total estimated cost is 60000/-.

Drainage : For sufficient vegetative and reproductive growth of plants, good drainage system must be developed in between the beds and around the nursery. It is extremely important to ensure that water logging does not occur in and around the pots and beds. Estimated space :720sq.m

Plant protection : Keen observation on attack of different pests and diseases is required. If the mother plants are infected, the propagated plants will be infected also. Necessary control measures should be taken immediately on observation.

Harvesting :

The seeds, bulbs, etc. need to be harvested in the proper stage. Only completely ripe seeds are ready for harvesting. Seed capsules should be covered with muslin cloth or by the paper bag before ripening in cases of light seeds (like calendula, balsam, etc.) which may blow off due to wind or those species the fruits of which may burst while ripening. This will prevent loss of seeds.

Corms and bulbs are generally harvested when the leaves start yellowing or when they dry up. These are dug out carefully without imparting any injury.

Before harvest, nursery stock should be mature. The tissues are hardened against water loss and shrinkage. It is a common practice to defoliate shrubs and trees some days before they are to be dug out. This can be done by chemical defoliant, by withholding water or by hand. Live plants intended for transport are sent with a ball of earth around their roots.

CHAPTER 3- MARKET POTENTIAL

Marketing :

Marketing of plants and planting materials is the most crucial and important part of the nursery business. The project targeted based on the demand of the local market i.e puducherry and Chennai.

Packing and handling :

Seeds are cleaned and stored in close bottles or tins. Before packing, they are dried first in shade for 2-3 days and finally in the sun for a couple of days. In husked seeds, the husks are removed before packing.

For long distance destinations, the ball of earth should be soaked in water and covered with a thick layer of wet moss. Only plants having a well-developed root system should be selected for such destinations.

Bulbs, tubers and corms withstand rigours of handling. They are packed in bamboo-matted boxes in between layers of straw. Rhizomes of water-lily and lotus are wrapped in moist sphagnum moss and polythene to keep them moist during transit and then packed in baskets or cardboard cartons.

Storage :

Seeds are stored in a cool, dry place or kept in desiccator. Living plants should be kept in shade. Bulbs, corms and tubers are stored in single layer over dry sand, flat wooden trays or racks in a well-aerated store room with low temperature and low humidity. Before storing, they may be treated with fungicides and insecticides such as 0.1% benlate or 0.1-0.2%, captan 5% , DDT , BHC, etc.

EXTENSION ACTIVITIES

- Surveying the Planting Site
- Selecting Plants
- Holding Plants Until They Are Planted
- Planting in Individual Holes
- Planting in Beds
- Planting Annuals and Herbaceous Perennials
- Staking and Guying Trees
- Trunk Wrapping
- Care of Newly Planted Ornamentals
- Steps for Planting Success
- Opportunities' of employment in field area
- Increase in GDP of area

CHAPTER 4 - SWOT Analysis:

Strengths:

- Domestic market for cut flowers, especially for different varieties and colours of orchid anthurum is growing. Currently floral decoration is the growing social trend. Many are ready to invest on exterior decorations and interior decorations using fresh cut flowers.
- The Governments have identified floriculture as a sunrise sector and are providing strong support through various policies and schemes.
- Provides employment for a large Indian population including women, living in rural territories.

Opportunities:

- There is tremendous demand for flowers due to the growing popularity of western life style.
- Access to metropolises like , Chennai, Mumbai and Delhi etc. and other big cities enhances the possibilities for tapping market of these states.
- Growing consumer base with higher income is expected to add demand in new market.
- The demand for flower decorations is increasing rapidly due to lavish arrangement during social, political, entertainment & sport event.
- Availability of new and unique varieties.

Weakness

- High capital investment.
- Demand fluctuate according to different seasons.
- Unavailability of skilled manpower.
- Incidence of pest and diseases many a times becomes unmanageable.
- Poor marketing linkage and poor market infrastructure.
- Non-availability of adequate quality planting material.
- Poor post-harvest management infrastructure. Due to the perishable nature of the products it's important to have enough transportation and good logistics facilities.

- Negligence to research relating to technical factors.

Threats

- Uncertainty in weather conditions and frequent occurrence of natural calamities like cyclone and drought.
- Uncertainty about market stability.
- Exploitation by middlemen in the market chain.
- High incidence of pest and diseases.

CHAPTER 5- ECONOMICS OF THE PROJECT

Margin money :

However, in the present model, 15% of the unit cost (i.e. Rs.117435) has been considered as margin money.

Bank loan :

Balance 85% of the cost of development may be offered as bank loan, which amounts to Rs.665465

Interest rate for ultimate borrower :

Banks are free to decide the rate of interest within the overall RBI guidelines. However, for working out the financial viability and bankability of the project, we have assumed the rate of interest as 12%

Results of financial analysis :

Details of the analysis are presented in Annexure-IV.

BCR : 1.62 : 1

NPW at 15% DF : 564418

IRR : 31.5

Repayment Schedule :

Repayment of bank loan and payment of interest may be completed within 4 years with no grace period. Details are presented in Annexure-V.

Assumption :

The labour wage rate assumed for this model scheme is Rs.200.00 per manday.

Conclusion :

The business of raising an ornamental nursery is technically feasible and economically viable.

It requires sizeable investment and good business management for better return. Financial institutions may very well support this business.

ANNEXURE - I

SOME POPULAR ORNAMENTAL PLANT SPECIES

FOLIAGE : Thuja, Crotons, Alocasia, Anthuriums, Coleus, Colocasia, Monstera, Philodendron, Dracaena, *Ficus pumila*, *Pleomele reflexe variegata*, *Ficus radicans variegata*, *Ficus pumila*, *Asparagus plumosus*, *A. sprengeri*, *Scindapsus aureus*, Begonia 'Rex', *Caladium* in different colours, *Aglaonema commutatum*, *Aralia elegantissima*, *Dieffenbachia exotica*, *D.picta*, *Philodendron bipinnatifidum*, etc. *Polyalthia longifolia*, etc.

FLOWERING : Roses (Hybrid teas, floribundas, Polyanthus, Miniature roses, etc.) Aster, jasmine, chrysanthemum, tuberose, gerbera, marigold, carnation, crossandra, Baleria, *Begonia glaucophylla*, *Passiflora caerulea*, African violet, *Begonia manicata*, Calceolaria, geranium, *Azalea indica*, etc.

BULBS : Cooperanthes, Alpinia, Gladiolus, Dahlia, Caladium, Crocus, Hyacinths, Daffodils, Tulips, Amaryllis, Canna, Bird of Paradise, Datura, *Vinca rosea*, *Lilium sp*, etc.

FERNS : Adiantums, *Asplenium nidus*, *Nephrolepis exaltata*, Platyceriums, *Pteris cretica*, Bird's nest, etc.

PALMS AND CYCADS : *Chamaerops humilis*, *Howea belmoreana*, *Phoenix roebelenii*, *Rhapis excelsa*, *Cycus revoluta* (not palm but similar looking), Areca Palm, etc.

CLIMBERS : Bougainvillea, *Hiptage benghalensis*, *Adenocalymma alliaceum*, *Aristolochia sp.*, *Jasminum sp.*, etc.

CACTI AND SUCCULENTS : *Aloe variegatta*, *Aeonium haworthii*, *Agave americana marginata*, *Colyledon undulata*, *Euphorbia splendens*, *Sedum sp.*, *Epiphyllum sp.*, *Rhipsalis*, *Zygocactus*, *Opuntia microdasys*, *O. tunicata*, etc.

TREES : *Bottle brush*, *Bauhinia sp.*, *Erythrina indica*, *Ixora parviflora*, *Jacaranda*, *Michelia champaca*, *Poinciana regia*, *Cassia sp.*, *Arancaria cookii*, *Brassaia actinophylla*, *Ampherstia nobilis*, etc.

GRASSES : *Agrostis elegans*, *A. nebulosa*, *A. pulchella*, *Apluda aristata*, etc.

ANNUALS : *Antirrhinum*, *China aster*, *Ageratum*, *Arctotis*, *Carnation*, *Calendula*, *Pansy*, *Petunia*, *Phlox*, *Sweet pea*, *Cosmos*, *Zinnia*, *Coreopris*, *Galliardia*, *dianthus*, *Chrysanthemum*, *Calendula*, etc.

II. Equipments ,Implements & Furniture :

Sl.No.	Items	Yr.I	II	III
1	Sprayers (2 nos.)	12000		2000
2	Spades, forks, knives, Khurpis, secateurs etc.	4000		1000
3	Water pipes, water canes, buckets, etc.	4000		1000
4	Furniture	10000		
	Total	30000		4000

III. Wages for skilled labourer for budding, grafting, etc. @ Rs.200/- per man day

	Year I	Year II	Year III
Rs/month	72000	72000	72000

IV. Goat proof fencing:Rs.90000.00

ANNEXURE- II

Summary : **Summary of the cost estimate is presented below :**

s.no	Particulars	unit	unit rate	Cost
1	Land	1.5 acres	350000	Own
2	watering unit			30000
3	fensing	1.5	60000	90000
4	Tools and implements			20000
5	Motor			18000
6	farmbuilding & store room			40000
7	working shed	30	250	7500
8	Furnitures			10000
9	cold storage	1	200000	200000
10	pot nursery	1000	40	40000
11	polybag nursery	1500	15	22500
12	ball nursery	1500	10	15000
13	mother plants	1200	40	48000
			Total cost	541000
WORKING CAPITAL				
s.no	Particular	unit	unit rate	Cost
1	Labour	2	200	120000
2	Transports			20000
3	purchase materials	5	5000	25000
4	Inputs			25000
5	Electricity	1 months	1200	14400
6	Advertisement			30000
7	Seed	5	1500	7500
			Total working cost	241900

ANNEXURE –III

Yield Estimates :

Items	Yr.I	II	III	IV onwards
Pot plants [Nos.] (Net sale 80%)	Nil	1600	2400	3200
Bouquets [Nos.]	Nil	150	300	450
Seedlings - [Nos.] : (Net sale 80%)				
a) Polybag seedlings.	12000	14400	16800	18500
b) Ball seedlings	12000	14400	16800	18500
Seeds (kg)	-	2	3	4

Sale prices estimated [Average] :

Pot Plant:200/- each,

Bouquet:150/-each,

seedlings: a)poly bag:8/-each b)ball -4/-each, seeds:5/-10g packet

Maintenance cost (average) : Rs.1,04,000/- p.a. from year IV onwards.

Year-wise Income :

(Figs. in Rs.)

Items	Yr. I	II	III	IV onwards
Pot Plants	-	320000	480000	640000
Bouquets	-	22500	45000	67500
Seedlings				
a) Polybag	96000	115200	134400	148000
b) Ball	48000	57600	67200	74000
Seeds	-	1000	1500	2000
Total	144000	516300	728100	931500

TOTAL COST'S

S.No	Particulars	expeniture	Beneficiary' contribution	loan amount
1	Total fixed cost	541000	81150	459850
2	total working cost	241900	36285	205615
	total cost	782900	117435	665465

ANNEXURE-IV

FINANCIAL ANALYSIS OF ORNAMENTAL NURSERY SCHEME

S/No	Income & expenditure	Year I	Year II	Year III	Year IV	
1	Capital	541000				
2	Total income	144000	516300	728100	931500	
3	depreciation in build @ 10%	33750	30375	27337.5	24603.75	
4	Depreciation in machinary @ 15%	10200	8670	7369.5	6264.075	
5	Recurring cost	241900	278185	362850	278185	
6	total cot	285850	317230	397557	309052.8	
7	Net income	-141850	199070	330543	622447.2	1010210
8	Total net income	1010210				
9	Discount factor 15%	0.87	0.75	0.65	0.52	
10	discount cost NPV@15%	248689.5	237922.5	258412.1	160707.5	905731.5
11	Discount benefitNPV15%	125280	387225	473265	484380	1470150
12	total discount benefit	1470150				
13	total discount cost	905731.5				
	NPW15%	564418.5				
	BCR15%	1.623163				
14	discount factor	0.714286	0.510204	0.364431	0.260308	
15	total discount cost10%	204178.6	161852	144882.3	80448.99	591361.9
16	total discount benefit40%	102857.1	263418.4	265342.6	242477.1	874095.2
	NPW 40%	282733.3				
	BCR 40%	1.478105				
	IRR	31.65636				

ANNEXURE-V

REPAYMENT

	INTEREST	12%					
YEAR	LOAN AMOUNT	INTEREST	PRICIPAL	TOTAL REPAY	INCOME	NET SURPLS	DSCR
1	665465						
2	665465	79855.8	221821.7	301677.5	199070	-102607	0.659877
3	443643.3333	53237.2	221821.7	275058.9	330543	55484.13	1.201717
4	221821.6667	26618.6	221821.7	248440.3	622447.2	374006.9	2.50542
							1.455671

REPAYMENT =LOAN AMOUNT – SUBSIDY

	INTEREST	12%					
YEAR	LOAN AMOUNT	INTEREST	PRICIPAL	TOTAL REPAY	INCOME	NET SURPLS	DSCR
1	383621						
2	383621	46034.52	127873.7	173908.2	199070	25161.81	1.144684
3	255747.3333	30689.68	127873.7	158563.3	330543	171979.7	2.084612
4	127873.6667	15344.84	127873.7	143218.5	622447.2	479228.7	4.346136
							2.525144

REPAYMENT =WITH SUBSIDY WITH OUT SUBIDY INTEREST

	INTEREST	12%					
YEAR	LOAN AMOUNT	INTEREST	PRICIPAL	TOTAL REPAY	INCOME	NET SURPLS	DSCR
1	665465						
2	665465	46034.52	221821.7	267856.2	199070	-68786.2	0.743197
3	443643.3333	30689.68	221821.7	252511.3	330543	78031.65	1.309022
4	221821.6667	15344.84	221821.7	237166.5	622447.2	385280.7	2.624516
							1.558912

Flower plants:



Anthurium



Bird of Paradise



Carnation



orchids



Rose

Foliage plants:



Cactus:



Old man



Mexican cactus



Cycus



Royal Palm

