# Pre-Feasibility Study

# Cut Flower Farm

## (Gladiolus, Marigold, Statice and Chrysanthemum)


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## Introduction to SMEDA

The Small and Medium Enterprise Development Authority (SMEDA) was established with the objective to provide fresh impetus to the economy through the launch of an aggressive SME support program.[1]

Since its inception in October 1998, SMEDA had adopted a sectoral SME development approach. A few priority sectors were selected on the criterion of SME presence. In depth research was conducted and comprehensive development plans were formulated after identification of impediments and retardants. The all-encompassing sectoral development strategy involved recommending changes in the regulatory environment by taking into consideration other important aspects including financial aspects, niche marketing, technology upgradation and human resource development.

SMEDA has so far successfully formulated strategies for sectors including, fruits and vegetables, marble and granite, gems and jewelry, marine fisheries, leather and footwear, textiles, surgical instruments, urban transport and dairy. Whereas the task of SME development at a broader scale still requires more coverage and enhanced reach in terms of SMEDA's areas of operation.

Along with the sectoral focus a broad spectrum of business development services is also offered to the SMEs by SMEDA. These services include identification of viable business opportunities for potential SME investors. In order to facilitate these investors, SMEDA provides business guidance through its help desk services as well as development of project specific documents. These documents consist of information required to make well-researched investment decisions. Pre-feasibility studies and business plan development are some of the services provided to enhance the capacity of individual SMEs to exploit viable business opportunities in a better way. This document is in the continuation of this effort to enable potential investors to make well-informed investment decisions.

[1] **For more information on services offered by SMEDA, please visit our website: www.smeda.org.pk**

# 1 PURPOSE OF THE DOCUMENT

The objective of the pre-feasibility study is primarily to facilitate potential entrepreneurs in project identification for investment. The project pre-feasibility may form the basis of an important investment decision and in order to serve this objective, the document/study covers various aspects of project concept development, start-up, and production, finance and business management.

# 2 PROJECT PROFILE

The project is related to setting up Cut Flower Farm for production of Gladiolus, Mari Gold, Statice and Chrysanthemum variety. The document highlights all the marketing, management, and financial aspects required for the establishment and successful running of the project.

## 2.1 Project Brief

Floriculture is a discipline of horticulture related to the cultivation and management of ornamental and especially flowering plants. In floriculture farm different varieties of flowers are produced to be sold in the market as potted or cut flower, the following pre-feasibility deals only with the production of cut flower.

## 2.2 Opportunity Rationale

Demand for the cut flowers products has increased greatly in past two decades. The major cause in increase of demand of cut flower is increasing use of cut flower for weddings, birthday parties, office/home decoration and change in lifestyle of people. Consumers are increasingly demanding high-quality flowers. Similarly the demand for bouquets and new varieties and colors of cut flower is ever growing.

In addition to growing demand the favorable climate present in the country provides added benefits for investing in the floriculture sector. Floriculture crops give higher prices as compared to other agricultural crops and their product cycle is quite short. This result in a much higher net profit margin compared with other conventional crops.

## 2.3 Market Entry Timing

Demand of cut flower fluctuates during the year depending upon various social functions like marriage ceremonies and other social and religious ceremonies where large quantities of flowers are used. The supply of cut flower on the other hand fluctuates due to seasonal effects of weather on cultivation of flowers.

## 2.4 Proposed Business Legal Status

The business can be started as sole proprietorship or partnership basis. Furthermore, comparatively fewer complications are involved in forming, administering and running the sole proprietorship or partnership businesses

## 2.5 Proposed Product Mix

The proposed project is related to the farming of Gladiolus, Statice, Chrysanthemum and Marigold varieties and will generate revenues from sale of these varieties. Additional revenues will be generated from the sale of Gladiolus Corms which will start from third year.

**Table 1: Product Mix**

| Product | Average Plants per Acre | Price per Stick (Rs.) |
|---|---|---|
| Gladiolus, | 45,000 | 12 |
| Statice | 25,000 | 3 |
| Chrysanthemum | 20,000 | 3 |
| Mari Gold, | 10,000 | 60 (Per kg.) |

## 2.6 Production Capacity

Total farm area is assumed to be 4 Acres, cultivation of Gladiolus, Statice, Chrysanthemum and Marigold will be distributed on area of 1.2, 1.2, 0.8 and 0.8 Acres respectively.

## 2.7 Project Investment

The total project investment is Rs. 3.96 Million which includes Capital Cost of Rs. 3.58 Million and Working Capital of Rs. 0.38 Million. The project is assumed to be financed through 100% equity basis.

## 2.8 Recommended Project Parameters

**Table 2: Project Parameters**

| Max Capacity | Human Resource | Technology/Machinery | Location |
|---|---|---|---|
| 4 Acres | 4 Full time<br>4 Part time (6 Months) | Local Made | Quetta, Mastung, Kalat, Pishin, Killa Saifullah and Ziarat etc. |

| Financial Summary | | | | |
|---|---|---|---|---|
| **Total Cost** | **IRR** | **NPV** | **Pay Back Period** | **Cost Of Capital (WACC)** |
| Rs. 3.96 M | 28% | 3,136,557 | 4.28 Years | 16% |

## 2.9 Suitable Location

Flowers can be grown in any area that is good for agricultural production but relatively dry and colder climate offers better growth opportunities for cut flower growth. Quetta, Mastung, Kalat, Pishin, Killa Saifullah and Ziarat are some of the areas recommended for starting such a farm in Balochistan.

### Infrastructure Requirements

- Road
- Electricity
- Water

## 2.10 Key Success Factors

- Growing demand for cut flowers.
- Exclusive or novelty products.
- Stable to growing demand from the institutional market (offices, hotels and restaurants).
- Strongly increasing flower sales in major cities.
- Possibility of off-season supplies from Balochistan.

## 2.11 Strategic Recommendations

- Establishment of the farms in areas where basic infrastructure including water and electricity are available.
- The farming should be done on scientific grounds taking care of the input requirements and pest management techniques.
- Well-trained/experienced staff will add in the efficiency of the farm.
- Producer should be aware of ever-changing fashion in terms of flower colour and varieties.
- Special attention to healthy and certified seeds/ bulbs, land preparation, sowing pattern, water management, fertilizer application, and marketing is required.

# 3 CURRENT INDUSTRY STRUCTURE

## 3.1 International Floriculture Industry

The total Export value of cut flower for the year 2007 was US $ 6.9 Billion while total imports of cut flower was US $ 7.0 Billion in 2007.

Largest exporters of cut flowers are Netherlands, Colombia, Ecuador, Kenya, Italy and Belgium respectively. Netherlands is the leading exporter of cut flower having a market share of 3.9 Billion USD while Columbia is the Second largest exporter with a market share of 1.1 Billion USD respectively. Over all exports increased by almost 30 % from 4.9 Billion Dollars in 2003 to 6.9 Billion Dollars in 2007.

**Table 3:** Exporters of Cut flowers and flower buds for bouquets, fresh or dried (0603) 2007[2]

**Thousand USD**

| Exporters | Exported value in 2003 | Exported value in 2004 | Exported value in 2005 | Exported value in 2006 | Exported value in 2007 |
|---|---|---|---|---|---|
| **'World** | **4,954,492** | **5,329,851** | **5,605,120** | **6,120,753** | **6,996,985** |
| 'Netherlands | 2,815,519 | 3,054,422 | 3,116,423 | 3,332,531 | 3,944,605 |
| 'Colombia | 682,283 | 703,441 | 906,320 | 967,037 | 1,114,884 |
| 'Ecuador | 295,223 | 342,230 | 370,251 | 435,834 | 403,028 |
| 'Kenya | 176,014 | 231,890 | 226,310 | 271,583 | 313,412 |
| 'Italy | 82,954 | 87,448 | 79,955 | 81,884 | 91,485 |
| 'Belgium | 58,649 | 69,631 | 66,331 | 75,129 | 87,305 |
| 'Israel | 131,220 | 145,346 | 69,685 | 69,089 | 83,055 |
| 'India | 24,535 | 20,961 | 31,610 | 90,350 | 80,504 |
| 'Thailand | 53,279 | 58,615 | 67,598 | 73,595 | 79,220 |
| 'United States of America | 52,036 | 39,418 | 41,643 | 45,837 | 73,095 |
| 'Ethiopia | 305 | 1,908 | 12,128 | 25,137 | 68,827 |
| 'Germany | 33,343 | 45,742 | 50,207 | 52,370 | 56,636 |
| 'Malaysia | 23,857 | 32,227 | 40,270 | 48,467 | 52,020 |
| 'Spain | 90,774 | 80,483 | 62,776 | 52,372 | 48,574 |
| 'Costa Rica | 28,885 | 30,040 | 34,776 | 39,420 | 46,484 |
| 'China | 10,108 | 16,579 | 20,520 | 32,955 | 35,701 |
| 'United Kingdom | 37,421 | 32,249 | 41,379 | 42,320 | 34,517 |
| 'Zimbabwe | | 16,870 | 33,658 | 30,344 | 33,398 |
| 'Republic of Korea | 29,444 | 36,291 | 32,717 | 26,488 | 31,922 |
| ..... | | | | | |
| 'Pakistan | 158 | 171 | 195 | 287 | 218 |

[2] ITC calculations based on COMTRADE statistics

World's largest importers of fresh flower include United Kingdom, Germany, United States of America, Netherlands, France, Russian Federation, Japan, and Italy.

UK is the world's largest importer with total imports of 1.1 Billion Dollars followed closely by Germany and USA with imports of 1.1 and 1.0 Billions Dollars Respectively.

World imports of Cut flowers increased by 30 % from 4.9 Billion Dollars in 2003 to 7.0 Billion Dollars in 2007.

**Table 4:** List of importers of Cut flowers and flower buds for bouquets, fresh or dried (0603)[3]

**Thousand USD**

| Importers | Imported value in 2003 | Imported value in 2004 | Imported value in 2005 | Imported value in 2006 | Imported value in 2007 |
|---|---|---|---|---|---|
| **'World** | **4,923,831** | **5,536,106** | **5,931,013** | **6,337,591** | **7,078,767** |
| 'United Kingdom | 910,105 | 978,245 | 957,373 | 1,004,890 | 1,114,697 |
| 'Germany | 850,520 | 975,911 | 1,086,933 | 1,089,482 | 1,102,244 |
| 'United States of America | 768,509 | 886,979 | 905,951 | 980,198 | 1,043,617 |
| 'Netherlands | 477,514 | 497,689 | 535,558 | 590,816 | 672,374 |
| 'France | 482,480 | 511,196 | 517,124 | 520,838 | 521,488 |
| 'Russian Federation | 59,273 | 117,336 | 169,811 | 258,006 | 485,764 |
| 'Japan | 171,258 | 218,089 | 229,713 | 241,217 | 258,764 |
| 'Italy | 184,121 | 194,338 | 212,005 | 220,775 | 224,782 |
| 'Switzerland | 157,564 | 166,537 | 161,810 | 165,875 | 177,646 |
| 'Belgium | 116,276 | 132,722 | 135,813 | 142,454 | 166,934 |
| 'Austria | 90,587 | 91,826 | 105,301 | 107,743 | 141,806 |
| 'Canada | 78,903 | 87,798 | 96,070 | 103,992 | 115,422 |
| 'Spain | 64,068 | 70,026 | 86,133 | 99,102 | 110,701 |
| 'Denmark | 80,370 | 94,664 | 100,823 | 97,359 | 107,245 |
| 'Sweden | 62,626 | 67,534 | 72,686 | 89,804 | 99,007 |
| 'Poland | 16,160 | 36,261 | 53,216 | 57,772 | 76,639 |
| 'Norway | 31,342 | 35,663 | 43,365 | 46,393 | 59,346 |
| 'Czech Republic | 30,981 | 35,479 | 40,855 | 42,123 | 54,931 |
| 'Ireland | 33,270 | 39,974 | 44,713 | 49,567 | 43,882 |
| 'Greece | 26,165 | 30,771 | 29,006 | 31,775 | 35,859 |
| ..... | | | | | |
| 'Pakistan | 22 | 25 | 141 | 62 | 190 |

[3] Sources : ITC calculations based on COMTRADE statistics

Of the total EU flowers and foliage imports in 2007, 25% was imported from outside the EU. However, this share is increasing at a high rate. The Netherlands was the leading importer of cut flowers and foliage produced in developing countries, accounting for approximately 56% of EU imports. A great part of Netherlands imports is re-exported to other countries, in particular to Germany.

In recent years developing countries have started to play a very important role in the international floricultural trade. Kenya, Colombia, Ecuador and Zimbabwe are among the top supplying countries. Kenya is the leading supplier among developing countries while in recent years Ethiopia has shown phenomenal growth in the floriculture exports. It is expected that Ethiopian exports will continue to grow strongly, as currently more companies are being set up and existing growers are expanding.

## 3.2 National Floriculture Industry

Pakistan is also engaged in the production of Cut flowers for past few decades; however it is an infant industry as far as its growth is concerned. Though Pakistan has one of the most fertile lands and climatic conditions for production of flowers are favorable but due to lack of resources and skilled persons the industry has not been developed at par with other sectors of the economy. Most of the flowers produced in Pakistan are sold locally and a small quantity is exported to Middle East. Similarly a large number of fresh cut flowers are wasted due lack of infrastructure, improper packing, mishandling and other related problems.

Due to the lack of awareness and knowledge on production side, flower cultivation is concentrated to only few varieties such as Roses, Mogra , Marigold, Chrysanthemum, Gladiolus, Carnation, Stacie (Gul-e-Sataish), Lilies, Tuberose, Jasmine (Motia) and Freesia (Gul-e-Farzana). Major flower uses in Pakistan is for marriage ceremony and decorative purposes, however there is also a limited market for personal use. Flowers are used in fresh as well dried forms. In fresh form they are mostly used in bouquets and in dried form they are the source of natural essence.

As compared to other provinces floriculture is relatively better developed in Punjab due to increasing competition in agriculture sector and the presence of major markets of Lahore, Rawalpindi, Faisalabad and Islamabad. However it is still far behind in competition at international level. Pattoki is the major center for floricultural production and marketing in Pakistan. In recent years flower production has also increased in Kasur and Sheikhupura districts. Other flower producing areas include Lahore, Chunian, Okara, Kallarkhar, Rawalpindi, Faisalabad, Narowal, Sahiwal, Gujranwala, Manshara and Abbotabad.

Major buyers of the cut flower are in the larger cities including Karachi, Peshawar, Lahore, and Islamabad. However marketing of cut flowers in these areas is still unorganized. In most cities flowers are brought to wholesales markets, which mostly operate in open yards. The markets are dominated by few flower merchants who buy

most of the produce and distribute them to local retail outlets. The retail florist shops are scattered at different locations normally operating on roadsides.

The production and consumption of cut flowers has increased over the past decade and this increase is expected to continue. Demand for cut flowers is growing tremendously as more and more people are becoming aware of the beauty of flowers as decorative items. Weddings, birthday parties, seminars, and other such social gathering events are incomplete without floral decorations.

There is a great scope in value addition of flowers as well specially for essential oil production of rose, tube rose, jasmine etc. similarly there is a good demand for use of these flowers specially rose in traditional medicine.

## 3.3 Floriculture in Balochistan

Floriculture is gaining popularity in Balochistan as Balochistan's climatic condition and fertile land provides ideal conditions for the development of Floriculture.

Floriculture is an upcoming opportunity in Balochistan and this must be availed for uplifting the economy of the province. It can play a major role in the economy of Balochistan and can become an important sector same as that of Horticulture, Livestock & Fisheries.

Favorable growing areas in Balochistan include Quetta, Kalat, Ziarat, Khanozai valleys and any other temperate areas.

One of the major competitive advantages of Balochistan is the tenure of the production period. In Balochistan, flower plants can be in production for 8 months while in other provinces of Pakistan, such period is for 4 months only. This will help to supply fresh flowers to other parts of the country and even for export continuously if the sector is put on scientific lines and farmers, academia, and other support industry interface is developed.

Lack of knowledge about floriculture on modern floricultural techniques both pre harvest and post harvest, difficulty in obtaining the latest varieties of plants, lack of marketing knowledge and lack of government support for floriculture is hindering the growth of this sector in Balochistan.

Though the total production in Balochistan is not encouraging but the growth in this sector is immense and need to capitalize the sector by providing the basic facilities for the sustainable growth of the sector i.e. technical assistance. The marketing channel for cut flowers in Balochistan is very informal. The estimated total production of the floriculture products is 174 Tons per annum which includes Gladiolus, Carnation, Marigold, Roses, Tube roses, static etc.

# 4 MARKET ANALYSIS

Since the floriculture sector in Pakistan is not highly developed there are great variations in the production and consumption cycle of cut flowers. The production cycle is especially dependent upon the natural environment and weather play a major role in the total production. Similarly the consumption cycle is determined by the marriages, religious (URS) and political occasions. Due to these reasons it is difficult to forecast the actual requirements for cut flower. Similarly due to the perishable nature of the product appropriate infrastructure and transportation also plays important role in the marketing of cut flower.

## 4.1 Marketing Channels

In every major city of the country there are numerous retail outlets selling all kinds of flowers to consumers. These outlets could be anything from a roadside shop to a proper retail outlet shop in some high-end urban locality. These shops are either fed directly from farms or through a middleman or distributor.

Besides retail outlets the major buyers are corporate and institutional customers. These include hotels, offices and most importantly party decorators and marriage halls. All these institutional as well as corporate customers are fed by wholesale dealers and distributors. They buy in bulk quantities.

The marketing channels of cut flower follow a wide range of different routes before reaching the consumer. In general, however, cut flowers and foliage from producers follow one of the following distribution channels from farming to retail.

### *4.1.1 Producers*

In the absence of farmers markets producers can not sell the flowers directly to the end consumers. Producers usually sell their produce in auctions through wholesalers and commission agents. Most of the producers are located far away from the Major cities where major consumers are located.

### *4.1.2 Wholesalers and Commission Agents*

Wholesalers are vital links in the chain from growers to consumers. Since it is not possible for the retailers to buy in bulk, it is left to the wholesalers who purchase large amounts of flowers and break this bulk into smaller amounts. These smaller amounts are then sold to retailers or larger clients.

Most of the wholesalers buy their product directly for larger producers or at flower auctions which are held in the major cities.

These auctions handle majority of the produce in Pakistan. Most of the smaller retailers do not purchase large quantities of a single variety, but rather purchase small quantities of

many different varieties. Therefore, the wholesalers purchase most of the flowers at the auction.

Major markets of flowers where regular auctions take place include Patoki, Karachi, and Lahore. The prices normally vary according to region due to the fluctuations in supply and demand. Individual growers and traders from across the country bring their produce to the auction market. The auction normally takes places in the form of bundles which may contain different number of flowers depending upon the variety.

One of the major issues related to the growth of this sector is the monopoly of middle men. Since it is not possible for small farmers to participate in each auction he is bound to sell his product to the middle men.

### *4.1.3 Retail Shops*

Retail shops are mostly present at different locations in Major Cities. The flowers at these shops are sold as sticks, bouquets or in the form of petals etc. Sometimes flower are also sold by at prominent road crossings in the major cities. Some of the retail shops also contain refrigerators for the storage of flowers.

### *4.1.4 Consumers*

Different people buy flowers for different purposes, major users purchase flowers for weddings and religious occasions. They are used as gift on special occasion or to show emotions e.g. gift at birthday or anniversary, to congratulate someone on promotion, for an apology and young people purchase them as a sign of affection.

In addition, growing number of people especially in the bigger cities are using flowers for personal use to decorate their home or office and create a pleasant environment. Similarly larger hotels, restaurants and growing number of business also buy flowers to decorate their lobbies and offices.

### *4.1.5 Transportation and Packaging*

Given the perishable nature of flowers there are a number of constraints in transportation of the products to other cities. Flowers are harvested right before their full bloom and normally it is done early in the morning, Local producers at Quetta cut Glad at noon and put it in water for later transportation. They are then packed in bunches in cartons. Since the quantity is not very large mostly these flowers are sent to other cities through buses.

The packaging of flowers has to satisfy a number of conditions, mainly in the field of handling, and the protection of the quality and presentation. Different packaging materials are used, depending on the type of produce and the function of protection.

Cut flowers are often packed in a plastic or paper cover to protect them. Sometimes they are put in some kind of protective material like shredded newspaper. The kind of

packaging used is highly dependent on the variety and the size of the product, the required temperature and the transport conditions.

## 4.2 Marketing Constraints

There are a number of issues faced by the floriculture industry in Balochistan, first of all major markets of the flowers are in the other provinces where lack of transportation and communication hinder their growth. Similarly there is no formal pricing system used which results in great fluctuations in prices of the product.

## 4.3 Price structure

The price structure normally depends upon the quantity and variety of the flower. Price is normally determined by the Wholesaler and Retailers. Owing to the nature of supply and demand, short-term price fluctuations occur frequently at the auctions.

Some of the factors influencing producer prices are:

- Shape
- Colour of flower
- Fragrance
- Variety
- Size and Stage of opening of buds
- Colour and quantity of leaf
- Packaging
- Overall appearances
- Vase life

# 5 BASIC REQUIREMENTS/ TECHNICAL ANALYSIS

## 5.1 Varieties of Flowers to be Produced

In this report feasibility of following four flowers will be considered for production.

- Gladiolus
- Mari Gold
- Statice
- Chrysanthemum

### *5.1.1 Gladiolus*

The gladiolus, popularly known as “Sword Lily” is an easy-to-grow flower, especially valued for use in floral arrangements. Gladioli produce tall spikes of large blossoms, in a rainbow of colors including white, pink, red, purple, yellow, orange, salmon, and even green gladioli are available, along with many bi-colors. It is found in South Africa and Mediterranean regions.

***Season of Growth***

"Glads" grow from corms (bulb-like structures) that are not winter-hardy. They must either be dug in September or stored until planting time the following April, May, or replaced annually. Some gladiolus experts recommend treating them as annuals because you are more likely to get large, healthy blooms each year that way, and you don't have to fuss with storing them.

***Special requirement***

- Plant Gladiolus as early in the spring as the soil is fit to work.
- Nitrogen has significant effect on the flower health in different cultivars.
- The blooming season can be stretched by making succession plantings, by planting bulbs of several sizes, and by using varieties which take different lengths of time to mature.

***Varieties***

Gladiolus is found in a variety of types that include both the species and hybrid glads. The different types of species represent the geographic and ecological range of the many species in this genus. The different combination of species used to create the different hybrids has led to the establishment of several different types of hybrids as well.

### *5.1.2 Mari Gold*

Marigolds are hardy, annual plants and are great plants for cheering up any garden. Broadly, there are two genuses which are referred to by the common name, Marigolds viz., Tagetes and Celandula. Tagetes includes African Marigolds and French Marigolds. Celandula includes Pot Marigolds. Merigold originated in Africa and have been cultivated in subcontinent for quite some time.

***Season of growth***

The marigold is hardy and easy to grow. They can be grown in wider climatic conditions. It is mainly propagated by seeds. It is a very tolerant plant, growing in any soil that is not waterlogged, but prefers directly by sowing seeds from March and April. Plant to Plant distance should be from 15" to 18" so that branches may have room to spread.

The pointed-oval leaves are slightly hairy. The flowers, either single or double, are brilliant yellow or bright orange with long flowering season.

Marigolds require approximately 60 to 75 days flowering after seeding; therefore seeding indoors should be done in late Feb. The plants should be ready for planting outdoors late March and early April.

***Special requirement***

- Do not fertilize marigolds for 7 to 10 days after transplanting
- Thereafter use fertilizer about equal in nitrogen and potassium content.
- Growers should test medium pH and soluble salts on regular basis.
- Provide water on weekly basis.

- Plant distance should be selected so that equal amount of sunlight is available for every plant

***Varieties***

Marigolds come in different colors, yellow and orange being the most common. Most of the marigolds have some odor and has great value in cosmetic treatment. There are many varieties of Marigolds available today. Some of the major Marigold varieties are listed below:

- African or American Marigolds:
- French Marigolds
- Signet Marigolds
- Mule Marigolds

### *5.1.3 Statice*

Statice or Sea-lavender is any of 120 species of flowers in the genus Limonium. The genus was formerly often known by the synonym Statice. Statice Flowers come in white, lavender, and pink colors. The tiny funnel-shaped Statice flowers have a delicate, airy, hazy appearance, almost like smoke.

***Season of Growth***

Statice is easy to grow and salt tolerant. Statice Seeds can be initiated indoors 6-8 weeks before planting or sown directly outdoors. Seeds are planted in nurseries in Feb while they are shifted outdoors in March and April.

***Special Requirement***

- ✓ Statice is fairly drought tolerant.
- ✓ Statice Seed can be planted directly in the ground after frost has passed.
- ✓ Once established, plants can be propagated in spring.
- ✓ Statice is easily grown in full sun and in well drained average to sandy soil.
- ✓ Statice is a low maintenance plant.
- ✓ The plant benefits from a light fertilizer in early spring.
- ✓ Potential pests or diseases are rare.

***Varieties***

Some species of Statice have an offensive odor. English Statice comes in 1- to 2-inch clusters of Calyxes, each about 1 inch across. Stems are 1 to 1 feet long. The German Statices' small gray bracts arch backward, while the English Statice feature calyxes that are yellow, white, purple, lavender or pink with tiny white or yellow flowers inside. Latifolia Calyxes are white with blue-violet flowers. Statice Flowers can be spray dried with a fixative.

### *5.1.4 Chrysanthemum*

Chrysanthemum was named from two Greek prefixes, 'Chrys', which means golden (the color of the original flowers), and 'anthemon', meaning flower. Chrysanthemums are one of the most popular flowers in the world, next only to the Rose.

***Season of Growth***

Chrysanthemums are easy to be grown and are propagated by division of roots, cuttings and seeds. Chrysanthemums are not specific to any season. Chrysanthemum plants can be grown in any kind of soil, but they require a sunny weather for best performance. Chrysanthemums have a long flowering period. Chrysanthemum seeds are sown in those areas which experience low rainfall during the rainy season. Usually, the Chrysanthemum seedlings are transplanted after about a month of sowing. But sometimes seeds can also be sown directly and seedlings thinned out after germination. Chrysanthemum plants flower in about three months of sowing.

***Special requirements***

- ✓ Chrysanthemum plants can be grown in any kind of soil, but they require a sunny weather for best performance.
- ✓ Chrysanthemum seedlings are transplanted after about a month of sowing. But sometimes seeds can also be sown directly.
- ✓ After the transplants, the Chrysanthemum beds should be weeded and watered regularly.
- ✓ In some cases staking of Chrysanthemum plants is necessary.
- ✓ A careful check should be made of diseases and insect

pests and prompt control measures adopted to control them.

***Varieties***

Chrysanthemum flowers bloom in various forms, and can be daisy-like, decorative, pompons or buttons. Chrysanthemum blooms come in a huge variety of shapes and sizes. Chrysanthemums come in wide range of colors. In addition to the traditional yellow, other popular colors are white, purple, and red. They are very popular in floral bouquets and flower arrangements.

- Corn Marigold or Corndaisy
- Tricolor Daisy
- Crown Daisy
- Shasta Daisy
- Alecost
- Yellow Daisy
- Fever Few
- Florist´s Chrysanthemum
- Pyrethum Daisy
- Marguerite

## 5.2 Land / Field Preparation:

The first step for the production of cut flower farm is preparation of Land / Field. First of all the field has to be leveled. Small channels will also be required for water supply. The best way for field will be to divide the field in parallel cut flower fields having water canals on one side and driveway on the other. So the water canal will water the fields on its both side and it will be the case with driveways.

Wind can also cause damage to the flowers to protect the site from wind breaking trees or shrubs should be grown around the farm. Artificial windbreaks can also be used if there is a danger of competition between trees and flowers for available moisture and nutrients. Building and other infrastructure is also required for the production of cut flowers which are described in detail in a separate heading.

Bed preparation depends upon the variety of the flowers. If plants are relatively tall with dense foliage, the bed should be narrower because insufficient sunlight will penetrate the center of the flowerbed, resulting in poor plant growth. Workers can easily reach 2 feet into a flowerbed to make a proper cut and remove the flower without damaging the crop. So the flowerbeds will not be wider then 4 feet.

## 5.3 Planting

Planting time vary with the variety of the cut flower. Planting time of different varieties of cut flowers for selected locations in Balochistan is provided in the following table.

**Table 5**: Plantation and Harvest Calendar

| Months | Gladioli | Marigold (Ganda) | Statice | Chrysanthemum (Gul-e- Daudi) |
|---|---|---|---|---|
| Jan | | | | |
| Feb | | Seed in Nursery | Seed in Nursery | |
| Mar | Corms | Seed in beds after 15th March | Seed | Seed / Cutting Nursery |
| April | Corms | Seedling shifting | Seed/ Seedling shifting | Seed/ Cutting Nursery |
| May | Corms | | | Transfer to Beds |
| June | Harvest + 3 Months | Harvest + 2 ½ Months | Harvest + 2 ½ Months | |
| July | Harvest | Harvest | Harvest | |
| Aug | Harvest | Harvest | Harvest | |
| Sep | | | | |
| Oct | | | | Harvest + 6 Months |
| Nov | | | | |
| Dec | | | | |

It is recommended that plantation should be done in batches with some time interval which will ensure availability of products throughout the growing season.

Planting density changes with the plant types and varieties. The plant to plant and row to row distance for the recommended varieties is provided in the Table 6 : Row and Plant Distance.

**Table 6 : Row and Plant Distance**

| | Gladioli | Marigold (Ganda) | Statice | Chrysanthemum (Gul-e- Daudi) |
|---|---|---|---|---|
| **Plant Distance** | 6" to 9" | 15" to 18" | 12" to 15" | 12" to 18" |
| **Row Distance** | 12" to 18" | 18" to 24" | 15" to 18" | 16" to 24" |
| **Plants / Acre** | 40,000 – 50,000 | 10,000-15,000 | 20,000-28,000 | 20,000-28,000 |

**Table 7: Other Requirements**

| | Gladioli | Marigold (Ganda) | Statice | Chrysanthemum (Gul-e- Daudi) |
|---|---|---|---|---|
| **Water** | Weekly | Weekly | Weekly | Weekly |
| **Requirements** | Sunlight for better production | Sunlight for better production | Sunlight for better production | Sunlight for better production |
| Price / Seed | Rs. 5-7 | Rs. 3 | Rs. 3 | Rs. 1.5 |
| Fertilizer / Pesticide | Rs. 5000/acre | | | |
| Foliar Spray | Rs. 1000/acre | | | |

## 5.4 Watering

Most of the cut flower requires water on weekly basis. Water should be provided by analyzing the condition of the soil by looking at dampness. For best results micro irrigation system can be used which causes minimum damage to the shoot and flower.

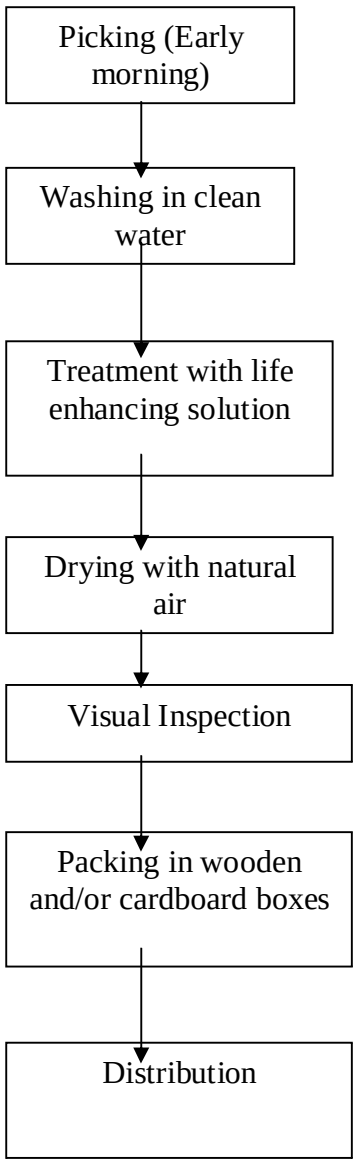
Given the importance of water for cut flower production it is recommended that the farm should have its own water source e.g a well or a tube well.

## 5.5 Harvesting

Since cut flowers have a very perishable nature, therefore, they are normally harvested a few days before full bloom to increase their shelf life. Harvesting the flowers early in the morning also helps in keeping the freshness and hence increases shelf life. Knives and shears should be kept sharp to ensure that stems are cut evenly and not crushed as crushed stems restrict the ability of flowers to take up water, thereby reducing their vase life. That's why workers should take care so that their output is of high quality. Harvesting calendar is provided in the Plantation and Harvest Calendar:

### *5.5.1 Flow Process for Picking:*

The Flower picking process will be as under;




## 5.6 Machinery and Equipment Requirement

The equipment required for the project is as follows:

**Table 8: Machinery and Equipment Requirement**

| Items | Total Cost Rs. |
|---|---|
| Shovels, pickaxes, Cutters , Cart etc | 50,000 |
| Tube wells | 1,200,000 |

### *5.6.1 Wind Breaks:*

Trees can be grown at the edges of the fields to serve as wind breakers. Depending upon the locality mud walls, other shrubs can also serve the same purpose.

### *5.6.2 Tube wells:*

It is recommended that the farm should have its own tube well. The cost of tube well is around 1.2 Million.

### *5.6.3 Office Equipment and Furniture*

**Table 9: Office Equipment and Furniture**

| | Furniture / Office equipment | Total Cost (Rs.) |
|---|---|---|
| 1 | Furniture | 25,000 |
| 2 | Office Equipment | 32,500 |
| | **Total** | **57,500** |

## 6 HUMAN RESOURCE REQUIREMENT

Semi skilled workers are needed to look after the plants, watering, fertilizer application, insecticide use planting and harvesting at the farm. The personal needed for the farm is as under:

**Table 10: Human Resource Requirement**

| Description | No. | Monthly Salary Per Person (Rs.) | Total Yearly Salary (Rs.) |
|---|---|---|---|
| Supervisor | 1 | 10,000 | 120,000 |
| Farm Worker (Mali) Full Time | 4 | 5,000 | 240,000 |
| Farm Worker (Part Time for 6 Months) | 4 | 5,000 | 120,000 |
| **Total Salary** | | | **480,000** |

# 7 LAND AND BUILDING REQUIREMENT

Total required land for this project is four acre, most of which be used for farming. The building will comprise of office, store, packing room etc. Since office is also located at farm it is recommended that low cost construction materials are used. The area required in square feet is as under: -

**Table 11: Land and Building Requirement**

| Description | Quantity / Area | Total Cost (Rs.) |
|---|---|---|
| Office | 224 | 134,400 |
| Packaging Shed | 224 | 33,600 |
| Store | 256 | 89,600 |
| Servant Room | 224 | 78,400 |
| Nursery | 1200 | 84,000 |
| **Total** | | **420,000** |

## 7.1 Recommended Mode

The project can be started on purchased or leased land depending upon the price of the land. Since price of agricultural land especially in rural districts of Balochistan is not very high the land is assumed to be purchased for this purpose.

# 8 PROJECT ECONOMICS

| | | Equity | | Project |
|---|---|---|---|---|
| **Internal Rate of Return (IRR)** | | **28%** | | **28%** |
| **Modified Internal Rate of Return (MIRR)*** | | **20%** | | **20%** |
| **Payback Period (yrs)** | | **4.28** | | **4.28** |
| **Net Present Value (NPV)** | **@ 16%** | **3,136,557** | **@ 16%** | **3,136,557** |

# 9 FINANCIAL ANALYSIS

## 9.1 Project Cost

| Capital Investment | Rs. in actuals |
|---|---|
| Land | 800,000 |
| Building/Infrastructure | 420,000 |
| Tubewell, Farm equipment | 1,250,000 |
| Glad Bulbs | 202,500 |
| Office vehicles | 840,000 |
| Office equipment | 57,500 |
| Pre-operating costs | 10,000 |
| Training costs | - |
| **Total Capital Costs** | **3,580,000** |

| Working Capital | Rs. in actuals |
|---|---|
| Equipment spare part inventory | 3,184 |
| Raw material inventory | 151,237 |
| Upfront land lease rental | - |
| Upfront insurance payment | 25,200 |
| Cash | 200,000 |
| **Total Working Capital** | **379,621** |

| **Total Investment** | **3,959,621** |
|---|---|

| Initial Financing | Rs. in actuals |
|---|---|
| Debt | - |
| Equity | 3,959,621 |
| Lease | - |
| Export re-finance facility | - |

## 9.2 Projected Income Statement

**Statement Summaries** **SMEDA**

**Income Statement**

Rs. in actuals

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 | Year 7 | Year 8 | Year 9 | Year 10 |
|---|---|---|---|---|---|---|---|---|---|---|
| Revenue | 1,374,480 | 1,568,740 | 1,783,461 | 2,020,557 | 2,282,106 | 2,441,854 | 2,612,784 | 2,795,678 | 2,991,376 | 3,200,772 |
| Cost of goods sold | 620,416 | 707,287 | 803,187 | 908,953 | 1,025,491 | 1,096,099 | 1,171,590 | 1,252,305 | 1,338,604 | 1,430,876 |
| Gross Profit | 754,064 | 861,453 | 980,274 | 1,111,604 | 1,256,615 | 1,345,755 | 1,441,193 | 1,543,374 | 1,652,772 | 1,769,896 |
| *General administration & selling expenses* | | | | | | | | | | |
| Administration expense | 121,200 | 129,684 | 138,762 | 148,475 | 158,868 | 169,989 | 181,889 | 194,621 | 208,244 | 222,821 |
| Rental expense | - | - | - | - | - | - | - | - | - | - |
| Utilities expense | 6,000 | 6,300 | 6,615 | 6,946 | 7,293 | 7,658 | 8,041 | 8,443 | 8,865 | 9,308 |
| Travelling & Comm. expense (phone, fax, etc.) | 6,000 | 6,420 | 6,869 | 7,350 | 7,865 | 8,415 | 9,004 | 9,635 | 10,309 | 11,031 |
| Office expenses (stationary, etc.) | 12,000 | 12,840 | 13,739 | 14,701 | 15,730 | 16,831 | 18,009 | 19,269 | 20,618 | 22,062 |
| Promotional expense | - | - | - | - | - | - | - | - | - | - |
| Professional fees (consultant etc.) | 19,243 | 21,962 | 24,968 | 28,288 | 31,949 | 34,186 | 36,579 | 39,139 | 41,879 | 44,811 |
| Depreciation expense | 277,000 | 277,000 | 277,000 | 277,000 | 310,076 | 310,076 | 422,644 | 422,644 | 466,000 | 466,000 |
| Amortization expense | 2,000 | 2,000 | 2,000 | 2,000 | 2,000 | - | - | - | - | - |
| Miscellaneous expense | 6,872 | 7,844 | 8,917 | 10,103 | 11,411 | 12,209 | 13,064 | 13,978 | 14,957 | 16,004 |
| Subtotal | 601,515 | 621,550 | 643,288 | 666,858 | 725,472 | 748,686 | 901,932 | 926,355 | 996,248 | 1,025,047 |
| Operating Income | 152,549 | 239,903 | 336,986 | 444,746 | 531,143 | 597,069 | 539,261 | 617,019 | 656,524 | 744,849 |
| Other income | 27,256 | 59,646 | 742,996 | 874,762 | 1,027,503 | 1,183,604 | 1,358,858 | 1,569,493 | 1,804,884 | 2,104,693 |
| Gain / (loss) on sale of assets | - | - | - | - | - | 336,000 | - | - | - | - |
| Earnings Before Interest & Taxes | 179,805 | 299,549 | 1,079,982 | 1,319,508 | 1,558,645 | 2,116,673 | 1,898,119 | 2,186,512 | 2,461,408 | 2,849,543 |
| Interest expense | - | - | - | - | - | - | - | - | - | - |
| Earnings Before Tax | 179,805 | 299,549 | 1,079,982 | 1,319,508 | 1,558,645 | 2,116,673 | 1,898,119 | 2,186,512 | 2,461,408 | 2,849,543 |
| Tax | - | - | - | - | - | - | - | - | - | - |
| **NET PROFIT/(LOSS) AFTER TAX** | 179,805 | 299,549 | 1,079,982 | 1,319,508 | 1,558,645 | 2,116,673 | 1,898,119 | 2,186,512 | 2,461,408 | 2,849,543 |
| Balance brought forward | | 179,805 | 479,354 | 1,559,336 | 2,878,844 | 4,437,489 | 6,554,163 | 8,452,282 | 10,638,793 | 13,100,201 |
| Total profit available for appropriation | 179,805 | 479,354 | 1,559,336 | 2,878,844 | 4,437,489 | 6,554,163 | 8,452,282 | 10,638,793 | 13,100,201 | 15,949,744 |
| Balance carried forward | 179,805 | 479,354 | 1,559,336 | 2,878,844 | 4,437,489 | 6,554,163 | 8,452,282 | 10,638,793 | 13,100,201 | 15,949,744 |

## 9.3 Projected Balance Sheet

**Statement Summaries** **SMEDA**

**Balance Sheet**

Rs. in actuals

| | Year 0 | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 | Year 7 | Year 8 | Year 9 | Year 10 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Assets** | | | | | | | | | | | |
| *Current assets* | | | | | | | | | | | |
| Cash & Bank | 200,000 | 578,752 | 1,125,425 | 2,438,863 | 3,653,666 | 5,479,841 | 6,698,054 | 8,972,328 | 11,095,403 | 13,963,547 | 17,805,749 |
| Accounts receivable | - | 112,971 | 120,954 | 137,762 | 156,329 | 176,822 | 194,135 | 207,725 | 222,266 | 237,824 | 254,472 |
| Raw material inventory | 151,237 | 181,242 | 216,352 | 257,370 | 305,219 | 342,914 | 385,264 | 432,844 | 486,300 | 546,358 | - |
| Pre-paid building rent | - | - | - | - | - | - | - | - | - | - | - |
| Total Current Assets | 379,621 | 899,389 | 1,487,277 | 2,856,755 | 4,136,294 | 6,018,746 | 7,328,546 | 9,658,835 | 11,844,829 | 14,783,595 | 18,060,221 |
| *Fixed assets* | | | | | | | | | | | |
| Land | 800,000 | 800,000 | 800,000 | 800,000 | 800,000 | 800,000 | 800,000 | 800,000 | 800,000 | 800,000 | 800,000 |
| Building/Infrastructure | 420,000 | 378,000 | 336,000 | 294,000 | 252,000 | 210,000 | 168,000 | 126,000 | 84,000 | 42,000 | - |
| Machinery & equipment | 1,250,000 | 1,125,000 | 1,000,000 | 875,000 | 750,000 | 625,000 | 500,000 | 375,000 | 250,000 | 125,000 | - |
| I Glad Bulbs | 202,500 | 182,250 | 162,000 | 141,750 | 452,262 | 398,935 | 345,609 | 292,283 | 672,518 | 575,836 | 479,153 |
| Office equipment | 57,500 | 51,750 | 46,000 | 40,250 | 34,500 | 28,750 | 23,000 | 17,250 | 11,500 | 5,750 | - |
| Total Fixed Assets | 3,570,000 | 3,293,000 | 3,016,000 | 2,739,000 | 2,792,762 | 2,482,685 | 3,298,290 | 2,875,645 | 2,886,562 | 2,420,562 | 1,954,562 |
| *Intangible assets* | | | | | | | | | | | |
| Pre-operation costs | 10,000 | 8,000 | 6,000 | 4,000 | 2,000 | - | - | - | - | - | - |
| Total Intangible Assets | 10,000 | 8,000 | 6,000 | 4,000 | 2,000 | - | - | - | - | - | - |
| **TOTAL ASSETS** | 3,959,621 | 4,200,389 | 4,509,277 | 5,599,755 | 6,931,055 | 8,501,432 | 10,626,836 | 12,534,481 | 14,731,391 | 17,204,157 | 20,014,783 |
| **Liabilities & Shareholders' Equity** | | | | | | | | | | | |
| *Current liabilities* | | | | | | | | | | | |
| Accounts payable | - | 60,963 | 70,302 | 80,798 | 92,590 | 104,321 | 113,052 | 122,578 | 132,977 | 144,335 | 105,418 |
| Short term debt | - | - | - | - | - | - | - | - | - | - | - |
| Total Current Liabilities | - | 60,963 | 70,302 | 80,798 | 92,590 | 104,321 | 113,052 | 122,578 | 132,977 | 144,335 | 105,418 |
| *Other liabilities* | | | | | | | | | | | |
| Deferred tax | - | - | - | - | - | - | - | - | - | - | - |
| Total Long Term Liabilities | - | - | - | - | - | - | - | - | - | - | - |
| *Shareholders' equity* | | | | | | | | | | | |
| Paid-up capital | 3,959,621 | 3,959,621 | 3,959,621 | 3,959,621 | 3,959,621 | 3,959,621 | 3,959,621 | 3,959,621 | 3,959,621 | 3,959,621 | 3,959,621 |
| Retained earnings | - | 179,805 | 479,354 | 1,559,336 | 2,878,844 | 4,437,489 | 6,554,163 | 8,452,282 | 10,638,793 | 13,100,201 | 15,949,744 |
| Total Equity | 3,959,621 | 4,139,426 | 4,438,975 | 5,518,957 | 6,838,465 | 8,397,110 | 10,513,784 | 12,411,903 | 14,598,414 | 17,059,822 | 19,909,365 |
| **TOTAL CAPITAL AND LIABILITII** | 3,959,621 | 4,200,389 | 4,509,277 | 5,599,755 | 6,931,055 | 8,501,432 | 10,626,836 | 12,534,481 | 14,731,391 | 17,204,157 | 20,014,783 |

*Note: Total assets value will differ from project cost due to first installment of leases paid at the start of year 0*

## 9.4 Projected Cash Flow Statement

**Statement Summaries** **SMEDA**

**Cash Flow Statement**

Rs. in actuals

| | Year 0 | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 | Year 7 | Year 8 | Year 9 | Year 10 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| *Operating activities* | | | | | | | | | | | |
| Net profit | - | 179,805 | 299,549 | 1,079,982 | 1,319,508 | 1,558,645 | 2,116,673 | 1,898,119 | 2,186,512 | 2,461,408 | 2,849,543 |
| Add: depreciation expense | - | 277,000 | 277,000 | 277,000 | 277,000 | 310,076 | 310,076 | 422,644 | 422,644 | 466,000 | 466,000 |
| amortization expense | - | 2,000 | 2,000 | 2,000 | 2,000 | 2,000 | - | - | - | - | - |
| Deferred income tax | - | - | - | - | - | - | - | - | - | - | - |
| Accounts receivable | - | (112,971) | (7,983) | (16,807) | (18,568) | (20,492) | (17,314) | (13,589) | (14,541) | (15,559) | (16,648) |
| Raw material inventory | (151,237) | (30,005) | (35,110) | (41,018) | (47,849) | (37,695) | (42,350) | (47,580) | (53,456) | (60,058) | 546,358 |
| Pre-paid building rent | - | - | - | - | - | - | - | - | - | - | - |
| Accounts payable | - | 60,963 | 9,339 | 10,496 | 11,792 | 11,731 | 8,731 | 9,526 | 10,399 | 11,358 | (38,917) |
| Other liabilities | - | - | - | - | - | - | - | - | - | - | - |
| Cash provided by operations | (179,621) | 378,752 | 546,673 | 1,313,439 | 1,545,564 | 1,826,175 | 2,343,893 | 2,274,274 | 2,556,636 | 2,868,145 | 3,842,202 |
| *Financing activities* | | | | | | | | | | | |
| Change in long term debt | - | - | - | - | - | - | - | - | - | - | - |
| Change in short term debt | - | - | - | - | - | - | - | - | - | - | - |
| Issuance of shares | 3,959,621 | - | - | - | - | - | - | - | - | - | - |
| Cash provided by / (used for) financing a | 3,959,621 | - | - | - | - | - | - | - | - | - | - |
| *Investing activities* | | | | | | | | | | | |
| Capital expenditure | (3,580,000) | - | - | - | (330,762) | - | (1,125,680) | - | (433,561) | - | - |
| Cash (used for) / provided by investing a | (3,580,000) | - | - | - | (330,762) | - | (1,125,680) | - | (433,561) | - | - |
| NET CASH | 200,000 | 378,752 | 546,673 | 1,313,439 | 1,214,802 | 1,826,175 | 1,218,213 | 2,274,274 | 2,123,075 | 2,868,145 | 3,842,202 |
| Cash balance brought forward | | 200,000 | 578,752 | 1,125,425 | 2,438,863 | 3,653,666 | 5,479,841 | 6,698,054 | 8,972,328 | 11,095,403 | 13,963,547 |
| Cash available for appropriation | 200,000 | 578,752 | 1,125,425 | 2,438,863 | 3,653,666 | 5,479,841 | 6,698,054 | 8,972,328 | 11,095,403 | 13,963,547 | 17,805,749 |
| Cash carried forward | 200,000 | 578,752 | 1,125,425 | 2,438,863 | 3,653,666 | 5,479,841 | 6,698,054 | 8,972,328 | 11,095,403 | 13,963,547 | 17,805,749 |

# 10 KEY ASSUMPTIONS

## 10.1 Production Related Assumptions

- Production loss are 8 %
- Glad bulb is used more then one year while all other varieties will require fresh seeds every year.
- Initial production capacity of farm is 75 % which will increase @ 5% annually to 95 % at maximum.

**Production at 100 % Capacity**

| | Glad | Statice | Chrysanthemum | Mary Gold |
|---|---|---|---|---|
| **Bundles / Acre** | 1,875 | 16,667 | 13,333 | 5,000 Kg/ Acre |
| **Total Acres** | 1.20 | 1.20 | 0.80 | 0.80 |
| **Actual Production** | 2,250 | 20,000 | 10,667 | 4,000 Kg. |
| **Loss (8%)** | 180 | 1,600 | 853 | 320 Kg. |
| **Net Bundles Production** | **2,070** | **18,400** | **9,813** | **3,680 Kg.** |

## 10.2 Costs Assumptions

Cost of goods sold is determined for different cut flower varieties by adding their seed/ bulb cost with labour, pesticides, fertilizer etc.

| | Gladioli | Marigold (Ganda) | Statice | Chrysanthemum (Gul-e- Daudi) |
|---|---|---|---|---|
| Price | Rs. 288 / Bundle | Rs. 60 / Kg. | Rs 36 / Bundle | Rs. 36 / Bundle |
| Price of Seed | Rs. 5 | Rs.3 | Rs. 3 | Rs. 1.5 |
| Fertilizer / Pesticide | Rs. 5000/acre | | | |
| Foliar Spray | Rs. 1000/acre | | | |

### *10.2.1 Administration and Labor Costs:*

- Labor cost is calculated assuming two persons will be required for maintenance of one acre. One person will be employed for 12 months while second person will be employed for 6 months during peak season.

| Description | No. | Monthly Salary Per Person | Total Yearly Salary Rs. |
|---|---|---|---|
| Supervisor | 1 | 10,000 | 120,000 |
| Farm Worker (Mali) Full Time | 4 | 5,000 | 240,000 |
| Farm Worker (Part Time for 6 Months) | 4 | 5,000 | 120,000 |

### 10.3 Revenue Assumptions

Sales price ranges from Rs. 30 to Rs. 350 per bundle according to different varieties of cut flowers. Weighted average price for this project has been calculated as Rs. 54 per unit. The sales price growth rate is assumed to increase at 7% per annum. The increase in cost of goods sold is assumed to be 7% as it is anticipated that some of the bulbs will be available for re-use within two years. Project starting capacity is assumed that 75% of total available capacity and the growth in capacity utilization will be 5% per annum.

**Revenue at 100 % Capacity**

| | Glad | Statice | Chrysanthemum | Mary Gold |
|---|---|---|---|---|
| Net Bundles Production | 2,070 | 18,400 | 9,813 | 3,680 Kg. |
| Price / Bundle Rs. | 288 | 36 | 36 | 60 / Kg. |
| Total Revenue Rs. | 596,160 | 662,400 | 353,280 | 220,800 |

### 10.4 Financing Assumptions

| | |
|---|---|
| Debt | 0 % |
| Equity | 100 % |
| Required rate of return on equity | 16 % |
| WACC | 16 % |

### 10.5 Depreciation Rates

| | |
|---|---|
| Office Equipment | 10 % |
| Machinery and Equipment | 10 % |

### 10.6 Cash Flow Assumptions

| | |
|---|---|
| Accounts Receivables Cycle (In Days) | 30 |
| Accounts Payable Cycle (In Days) | 30 |
| Cash on Hand Rs. | 200,000 |

## 10.7 Economy Related Assumptions

| | |
|---|---|
| Inflation rate | 7 % |
| Electricity growth rate | 7 % |
| Water price growth rate | 7 % |
| Wage growth rate | 7 % |