

Pre-Feasibility Study

GREENHOUSE FARM (Export of Fresh Cut Roses)



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May,2007

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Document No.	PREF-49
Revision	2
Prepared by	SMEDA Punjab
Approved by	Provisional Chief Punjab
Revision Date	May,2007
Issued by	Library Officer

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1 INTRODUCTION

1.1 Project Brief

The world trade of cut flowers runs into billions of dollars. Netherlands serves as the center of cut flower trade. Millions of flowers are traded through the auction houses in Netherlands. Major suppliers of fresh cut flowers to these auctions are Kenya, Columbia, Zimbabwe, Ecuador, Israel and India. Besides these four major suppliers, there are many other exporting countries as well.

Pakistan has no significant share in the international trade of fresh cut flowers. Although, Pakistan has one of the most fertile agriculture lands, where excellent quality flowers can be produced, it is only producing low quality cut flowers that are sold locally and a small number is exported to Middle East. A large number of fresh cut flowers are wasted due to mishandling and other related problems.

This pre-feasibility is being prepared by SMEDA and is intended to provide general information on the opportunity for an investor in the floricultural sector to establish a fresh cut rose flower farm equipped with a glasshouse. This would allow the project to export flowers to European markets, thereby, adding value and maximizing profits.

1.2 Opportunity Rationale

Production of high quality cut fresh flowers, especially roses, requires proper greenhouses where environment is controlled. This controlled environment gives the producer control over what kind of flowers he/she wants to produce and under what conditions. Another important aspect of using a greenhouse is that high quality flowers can be produced all year round, irrespective of the weather that exists outside.

As Pakistan is primarily an agri-based economy, there exists a huge potential of cut flowers cultivation for exports, especially when local growers have already accumulated many years of experience in cut flowers cultivation. The only requirement now is of putting up a proper glasshouse and we are ready to take our share of growing international cut flower trade.

Based on this scenario, it is high time to put up a glasshouse for growing and exporting fresh cut roses.

1.3 Basic Characteristics of a Greenhouse

The basic function of a glasshouse is to protect the plants from severe climatic conditions and provide favorable environment that is required for optimal production of the crop. But this alone does not sum up the characteristics and the benefits of a glasshouse. Following are a few of the benefits of a glasshouse:

- Production in a glasshouse increases yield by threefold when compared with conventional farming.
- Production in a glasshouse improves the quality of the produce by at least 50%.

- The output is disease free and conforms to the international hygiene standards.
- Production in a glasshouse reduces the harvesting period by half.
- Minimizing the command area optimizes land mass utilization.
- Any crop can be produced at anytime, irrespective of the conditions prevailing outside the glasshouse, by simulating/creating the required environmental conditions

1.4 Viable Economic Size

Taking into account the amount of investment required for putting up a proper glasshouse where all factors including, temperature, humidity, pest control, CO₂ levels in air, etc. are controlled, it is suggested that the farm should be started on one acre land. 18,000 rose plants will be planted in the farm that is to be covered by the glasshouse. Besides the one acre that would be used as the cultivation field, approximately another four kanal area would be used for constructing a packaging shed, a storeroom and an office.

2 CURRENT INDUSTRY STRUCTURE

Pattoki serves as the center for floricultural activity in Pakistan. Though Kasur and Sheikhpura districts have also developed some expertise in this field, yet Pattoki still serves as the hub market for all floricultural trade. Patta 'mandi' is the major forum for buying and selling of fresh cut flowers, especially roses. From Pattoki, flowers are distributed to all parts of the country including Karachi, Peshawar, Lahore, and Islamabad.

Overall, this sector is still in infancy, still going through birth pains. This is not a good sign considering the years this sector has been around. The major reason for this slow development process has been the lack of interest on part of progressive farmers to enter this field. The credit goes to small and poor farmers who have kept on going without much technical and/or financial support over the years. Whatever pre-harvest and post-harvest handling techniques are being used is the direct result of their personal ingenuity, however primitive they may be.

There are only few major players in this industry. Majority of the industry is unorganized. Therefore, there is great potential for anyone who put up a greenhouse for growing fresh cut roses. This is the only way to get into export market on sustainable basis.

Total exports fall around Rs 30 trillion all over the world and Holland shares 58 percent of the total exports, followed by Colombia 14 percent, Kenya five percent, Spain two percent, whereas Indian flower exports stand at Rs 4 billion. Pakistan's total flower export is Rs 35 million and it could earn billions of rupees through exports of flowers if the cultivation of flowers is promoted in the country.

3 MARKETING

Many different types of people buy fresh cut roses for different purposes. Consumption patterns of buyers living in different parts of the world are varied. But these consumption patterns can be grouped based on common features.

The purpose of purchasing flowers is mostly to give them away as gift. About 40 to 50 percent are used for this purpose. 20 to 30 percent flowers are bought for special occasions and about 20 to 25 percent are used for decoration.

Roses are used to convey a message of love and are therefore, the most widely used flower in the world. It has sort of become a necessity for conveying the message of love on any occasion and in any situation.

The proposed project has two different markets for the two different categories of fresh cut roses. The first market is Europe and USA for 'A' category flower. Middle East and Far East constitutes market for 'B' category flower. About 10% production would constitute 'C' category flowers, which will be sold in local market at the nearest 'mundi'.

In the export markets, there are two channels through which the product is sold, either at an auction house or directly to a wholesaler. It is advisable to start the proposed project with selling directly to wholesalers, both in Europe and Middle East markets, and then move to auction house option with the passage of time when capacity is increased. Auction house facility is not currently available in Asia, but India is starting its own auction houses for flowers and would lead the way in Asia very soon.

Selling initially to wholesalers will help the proposed project to acquire the requirements and standards in Europe. With the passage of time when production is up to the required standards on regular basis, auction house option can be used.

There will be three different market segments to be targeted by this project. The bifurcation of target market is based on two factors i.e. quality demanded and quantity demanded.

The major demand for fresh cut roses is in Europe and USA. Therefore, the target market for 'A' quality produce is Europe and USA. Similarly for 'B' quality produce it is Far East and Middle East. And finally for 'C' quality produce, the target market is local market in Pakistan. The demand pattern also exists on the same lines.

Mode of sale for export consignments would be on 15 days L/C or 15 days D/A basis. This is the general norm, which is followed around the world. It is only during periods of high demand that more favorable payment terms can be negotiated.

As far as local sale is concerned, it would be both on cash as well as 15 days credit. The produce that would be sold in 'mundi' would be against cash. Direct sale to retailers and commercial exporters would entail 15 days credit at the maximum.

4 FARM INPUTS

4.1 Land Requirement

A one-acre plot would be required for growing flowers. This one-acre would be covered by glasshouse for production of fresh cut roses under a controlled environment. Besides this one-acre plot, another area (about four kanal) would be required for establishing a packaging room, a storeroom and an office block. Although land is available on lease, but considering the amount of investment required for setting up a glasshouse it is better to own your own land. Land prices vary between 500,000 rupees and 800,000 rupees per acre according to the location of the land. As this project is an export-oriented project, the farm should be located close to a city with an international airport. For this pre-feasibility study, we estimate the cost of 1 acre land to be 700,000 rupees.

Table 4-1 Land Cost

Description	Area	Total cost(in Rs)
Green house Farm	1 Acre	700,000
Packaging & storage shed	17,500 Sq ft.	281,220
Office block	1000 Sq ft	16,070
Total Cost		997,290

4.2 Building

Building is required for housing the office block, packaging area, and storeroom. The office block would consist of two rooms and a reception.

Table 4-2 Construction Cost

Description	Area	Const. cost (in Rs)	Total cost(in Rs)
Packaging and Storage Shed			
Building (sq.ft.)	17,500	350	6,125,000
Office Block			
Building (sq.ft.)	1,000	600	600,000
Total Infrastructure			6,725,000

4.3 Rose Plants

A total of 18,000 rose plants would be planted in one acre. This would include three different varieties. As red color rose has the highest demand around the world, 50% of the plants would Cardinal Rose. Pink Perfume and Perfect Moment would be the other two varieties with 25% plants each. Rose plants will be taken from local nurseries.

4.4 Greenhouse

This is the most important input of this project. There are two options in this respect. First is to install an imported pre-fabricated glasshouse. Although, this is the best option, but the cost involved is so high that it puts the project beyond the reach of most of the potentially interested investors in Pakistan. Therefore, a second option is presented in this report. This second option is to fabricate the glasshouse in Pakistan using as many local components as possible. Although, it would not be as accurate an apparatus as the imported one, yet it will conform to international quality standards and would give the required quality in production.

Major components of a glasshouse are:

- GI (Galvanized Iron) Pipes (grouting with PCC) - Load bearing columns
- Truss (mild steel)
- Re-enforcement Cage - 3mm Steel Strip
- Fiber Glass
- Cooling Pads
- Propellers/Extruders
- Water Storage Tank
- Water Circulation Pipes
- Water Pump
- Cooling Tower
- Ammonia Chilling units
- CO₂ generators

There are three basic types of a greenhouse. These are:

1) lean-to

2) detached

3) ridge and furrow (gutter connected)

In the report, it is recommended to use a glass house of length =54'-6" width=22' Height=15'. It is selected because of its easy mechanics to build and operate.

Table 4-3 Size Of Glass House Length =54'-6" Width =22' height=15'¹

Description	Qty	Rate	Total cost
P/F of glass house Base channel consisting of M S base channel size 75×32×5mm,	160RFT	168	26,880
P/F glass house main structure consisting of M S hollow section size 50×50×2mm	2561RFT	166	425,126
P/f of M.S hallow section 19×19×1.5mm for top roof cooling,	110 RFT	37	4,070
P/F of 9×9mm, solid bar welded with horizontal and vertical members, and with hallow section for roof	4800 RFT	33	158,400
P/F truss for structure, consisting of M.S hollow section size 38×38×1.5mm	480RFT	71	34,080

¹ Salim Enterprise, P 284 D Type Iron Market ,Faisalabad, Tel : 041-2640142 , FAX : 041-2663774

P/F support for truss, consisting of M.S hollow section size 32×32×1.5mm	810 RFT	55	44,550
P/F imported glass 8mm thick for top with all fitting silicon sealing and U rubber	1300 SFT	142	184,600
P/F imported glass 5mm thick for side walls, front and back with all fitting silicon sealing and rubber gola	1000 SFT	177	177,000
P/F of exhaust Fan (Pak) 600mm dia 8 fans on one side.2 fans on front 2 fans on back side, steel body with louver system	12 No	4100	49,200
P/F of ventilators system on both sides of glass house size600×600mm operated manually and chain gray and gear system with GI wire mesh imported with frame. Ventilator adjusted out ward with common operation eight ventilators on each side .	16 No	4800	76,800
P/F of green net imported size green net 50'×18' with pulley chain system in side the glass house. Double side M.S hollow shaft for green net rolling. G .I wire No.10 for holding of green net. G.I sling wire 3mm for rolling of green net with adjustable G.I hock, I/c cost of two coat of red oxide primer and two coat of enamel painting, carriage,	1 No	35000	35,000
P/F double side sliding door 78"×54" Material frame hollow section 60×30×1.5mm, with lock system, railing, bearing with solid bar 9×9mm with imported glass 5mm with rubber fitting with silicon..	2 No	7800	15,600
P/F cooling pad imported (Italy or Sweden)size cooling pads, size 54'×3'-3"×4"i/c carriage of metrical cost of labor complete in all respect as directed by engineer in charge.	176 SFT	473	83,248
P/F of G.I structure for holding of cooling pads, size 54'-6"×4'×6", G.I sheet imported 1mm prime quality i/c carriage of metrical cost of labor complete in all respect as directed by engineer in charge	1No	28500	28,500
P/F of double side drainage tray for shower system for roof cooling, G.I sheet 1mm imported. Size tray 54'-6"×4½'×4" with stay for tray holding M.S flat iron size38×6mm. With G.I nuts bolts	110 RFT	160	17,600
P/F G.I drainage pipe for roof cooling system size pipe 2" water size, with elbow, socket, union, tee, barrel nipple and clamp	1 No	10200	10,200
P/F of top showering tray with cover for water shower system for cooling of top of glass house size 54'-6"×8-½'×4" G.I sheet 1mm	55 RFT	290	15,950
P/F of G.I pipefitting for roof showering size G.I pipe 1" water size, with G.I supply line size pipe 1-¼" with elbow, socket, union, tee, barrel nipple and clamp	1No	8900	8,900
P/F of water pump with motor 3HP, III phase, 2800Rpm for top showering heavy duty imported pump plane system with pipe with check valve with M.S frame	1No	29000	29,000
P/F of water tank cover. Material M.S angle iron size 1 ½"×1 ½"×3/16" Tank cover size 6'-3"×6'-3" with M.S sheet 1.5mm with float gauge of measurement of water level	1No	5500	5,500
P/F water pipe for showering cooling G.I pipe size 1", G.I pipe supply line size pipe 1 ¼"water size, with elbow, socket, union, tee, barrel nipple and clamp	1 No	7800	7,800

P/F of water pump with motor 3HP, III phase, 2800Rpm for top showering .heavy duty imported pump glane system with pipe with check valve with M.S frame	1No	29000	29,000
P/F of Mist system inside the glasshouse. G.I main supply line size 1 ¼”water size. Mist system attach with the pump of roof cooling. Six lines of G.I pipe size ½” water size for 78mist nozzle with elbow, socket, union, tee, barrel nipple and clamp	1No	45000	45,000
P/f of one side glasshouse cabin, size 8’-6”×8’-10”×4’-6”×7’cabin material M.S hollow section 50×50×2mm	180RFT	160	28,800
P/F of double door for cabin size 6’-6”×5’-6”, material hollow section 60×30×1.5mm with door closer.	1No	6800	6,800
P/F of 9×9 mm solid bar for glasshouse fittings, welded with hollow section of cabin and cabin door	422RFT	33	13,926
P/F of imported glass 8mm thick for cabin, with all fitting, silicon sealing and U rubber	40 SFT	142	5,680
P/F of imported glass 5mm thick for side walls of cabin and cabin door with all fitting silicon sealing and U rubber	110SFT	77	8,470
P/F of exhaust fan (plastic body) size 250mm for inside cabin	1No	2900	2,900
P/F of G.I wire mesh with frame in front of cabin for exhaust of air, size 18”×12”	2No	260	520
P/F of Electric panel 36”×28”×8” with automatic temperature controller and manual control system with thermocouple, with ampere meter, volt meter, indication lights with all circuit breakers tarasaki imported, with contactor, with electric cable imported 7/36 three core, with PVC pipe fitting, including cable from panel to pumps 2Nos.	1No	45000	45,000
P/F tube lights in side the glass house with PVC pipe with wiring with switch,	17No	800	13,600
P/F of RAILING (Line) structure for moving trolley, length44’, width1070mm, height760mm, double side M.S channel size 75×32×5mm, double side M.S solid bar size 12×12mm with machining (Bara), welded attached with channel	88RFT	740	65,120
P/F of FRAME for holding moving tray, size frame 1130×955×555mm, material M.S hollow section 60×30×1.5mm prime quality, with 4Nos. M.S stopper size 60×80×3mm with G.I nuts & bolts with double side stopper, bolt size 25×10mm	26No	1455	37,830
P/F moving WHEEL for trolley (4wheels in one set) M.S roller size 100×35×47×32mmwith slot size 13×6×6mm, with double side M.S plate size 100×80×50mm, with Excel carbon steel size 70×20mm with bearing 6204 with lock, with double side spacer OD=26mm ID=20mm, Length=20mm	26SET	1750	45,500
P/F TABLE TRAY, overall size, length=2130mm Width=955mm, depth=130mm, G.I gutter shield Imported 1.2mm prime quality 1.2mm thick (18SWG) with 5 holes for drainage.	26 No	3000	78,000
Tubewell (2HP, 3.5 dia)	1	100,000	100,000
Total			1,964,150

4.5 Spray Machines

Spray machine is required for the spraying of pesticides on rose plants inside the glasshouse. One such machine is sufficient for a one-acre farm. Good quality spray machine costs around 30,000 rupees.

4.6 Farm Fixtures and Tools

Basic tools would include equipment for pruning, cutting, cleaning, and thorn removing. Besides these, certain other tools and fixtures would be required like plastic water tubs for washing the flowers, fans for drying them, tables for spreading the flowers for drying, and some testing and measuring instruments. All these fixtures and tools would be purchased locally and their total cost should not exceed 150,000 rupees.

4.7 Pesticide, Weedicide, & Anti-termite Sprays

Three different kinds of sprays are required to keep plants inside the glasshouse healthy and in prime condition. Pesticide sprays are important to save the flower plants from any attack from pests. Different kinds of pesticides are sprayed for different pests. On an average, one spray costs 750 rupees and four sprays are required every month. Total cost of pesticide sprays is 3,000 rupees per month.

Weedicide spray is important to stop the growth of unwanted shrubs and plants. These unwanted shrubs and plants hamper the normal growth of rose plants by unduly consuming the energy of the soil. On average, one spray of weedicides costs 660 rupees/spray and at least two sprays are required every month.

Third important spray is the anti-termite spray. This is required to keep the plants free from termite attacks as termite attack can kill a plant in a few weeks time.

Table 4-4 Pesticide, Weedicide, & Anti-termite Sprays

Glass house	No. of bags	Unit cost	Total cost
Pesticide rqmt per week	1	750	750
Weedicide rqmt per spray	20	660	13,200
Termite spray rqmt per spray	10	550	5,500
Termite spray per year			11,000
Total			36,000

4.8 Fertilizers

Fertilizers are important to keep the soil nourishment up to the required level. Proper nourishment ensures healthy and strong plants. Four kinds of fertilizers are used in this project. Flower plants require DAP, potash, and ammonium nitrate fertilizers for proper yield. Sometimes one or two bags of urea are also required. 4 bags of DAP are required every quarter at Rs 1000/bag. 3 bags of potash are required every quarter at Rs 700/bag, and 4 bags of ammonium nitrate are required

every quarter at Rs 350/bag. But for this feasibility we are using the combination of NPK² which cost 500/bag and 2 bags per month per acre are required.

Table 4-5 Fertilizers Required

Material	Cost/Acre(Bag)	Acres/Bags	Amount
NPK	500	24	60,000

4.9 Human Resource Requirements

Project manager will be responsible for all the activities of the farm, whereas, the field manager will be responsible for the management of the glasshouse only.

Table 4-6 Human Resource

Employees	No	Per month salary	Total salary
Project Manager	1	20,000	240,000
Supervisor	1	10,000	120,000
Skilled field workers	2	4,500	108,000
Export officer	1	18,000	216,000
Helpers (packaging)	2	4,600	108,000
Driver	1	5,000	60,000
Electrician	1	8,000	96,000

4.10 Vehicles

An air-conditioned Toyota Hiace van would be required for transportation of packed flowers from the farm to the airport. Besides this, the van will also be used for other chores. A new Toyota Hiace would cost approximately 1.24 million rupees, including registration and insurance. One, second-hand small tractor will also be bought for the project. It would cost approximately 300,000 rupees.

5 OUTPUT

The production of rose flowers has seasonal variation. The purpose of putting up a greenhouse, with controlled environment, is to obtain constant production over the period of 12 months. This is important because otherwise with seasonal production it is not possible to access European markets, the prime target market of this project.

The total number of plants in this project is 25,000. These 25,000 plants are of three different varieties. Each variety has different output. On average, yield of one plant is approximately 20 flowers for the first year and 40 flowers from second year and onwards. Therefore, total number of rose stems available for sale is 360,000 for the first year. Out of these, approximately 50% would be 'A' quality stems that will be

² NPK is a combination of Nitrogen, Potassium and phosphors

exported to Europe. 40% of the output will be 'B' quality that will be exported to Middle East or Far East markets. Remaining output would be sold in local market. Capacity utilization is assumed to be 60% for the first year and 100% from second year onwards.

In European market, two different prices prevail. One is if you sell at the auction house and the other is if you sell directly to any wholesaler. Selling directly to wholesalers fetches better price. This is so because at the auction house, the quantity sold is very large and the buyers have to pay commission to the auction house. Selling directly to the wholesaler helps him save all that cost and some of the benefit is passed to the supplier. This project envisages selling directly to the wholesaler. In the Middle Eastern market, auction house option is not available and therefore wholesalers are the only buyers.

On average the European buyers give approximately 15-18 Rs per stem. In Middle Eastern market, average export price is around 10 rupees. While in Pakistan, a major seasonal variation has been noticed in flower prices. Approximately 4% would be deducted from the export price of 'A' quality and 'B' quality flower stems. This deducted amount would be the freight cost.

6 REGULATIONS

There are no specific government regulations that affect this project negatively. Rather the government is encouraging export oriented projects and is trying to facilitate this process as much as possible. As this proposed project would be the first of its kind in Pakistan, it will lead the way in getting even more favorable government regulations, specifically related to this type of business.

7 KEY SUCCESS FACTORS

There are a few factors, which would make this project a successful business venture. They are:

- Growing demand of fresh cut roses in international market.
- First proper greenhouse equipped fresh cut rose farm in Pakistan.
- Ample experience of cut flower cultivation in Pakistan.
- The countries presently supplying cut flowers to international markets are moving to high tech industry, which is leaving a gap in supply demand situation.
- Easy access to European and Middle Eastern markets due to regular air flights to these destinations from Pakistan.

8 THREATS

As it is for any project, this project would also face certain threats. A serious threat is the destruction of cultivated flowers due to a number of reasons like pest attack, unforeseen change in temperature, and any mechanical or structural problem in the greenhouse.

Another threat is fall in international demand and consequent fall in price. Although this is a distant threat yet, it cannot be ignored.

9 FINANCIAL ANALYSIS

9.1 Project Economies

9.1.1 Project cost

Table 9-1 Project capital cost

Capital Investment	Rs. In Actuals
Land	997,290
Building/Infrastructure	6,725,000
Land tillage	180,000
Furniture & fixtures	136,500
Machinery & Equipment ³	2,128,150
Office vehicles	1,560,450
Office equipment	46,000
Pre-operating costs	249,000
Total Capital Costs	12,022,390
Total Working Capital	347,079
Total Investment	12,369,469

9.1.2 Financing plan

Table 9-2 Initial financing

Description		RS
Debt	40%	4,947,788
Equity	60%	7,421,681

9.1.3 Project Returns

Table 9-3 Project returns

IRR	42%
NPV	9,617,344
Payback (Yr.)	3.22

³ This also includes the cost of generator and conveyor belt used in packaging

10 FINANCIAL STATEMENTS

10.1 Income statement

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Revenue	3,058,848	9,033,161	10,011,753	10,512,341	11,037,958	11,589,855	12,169,348	12,777,816	13,416,706	14,087,542
<i>Cost of sales</i>										
Cost of goods sold 1 (pesticides)	36,000	37,080	38,192	39,338	40,518	41,734	42,986	44,275	45,604	46,972
Cost of goods sold 2 (vadicides)	37,400	38,522	39,678	40,868	42,094	43,357	44,658	45,997	47,377	48,799
Cost of goods sold 3 (fertilizer)	12,000	12,360	12,731	13,113	13,506	13,911	14,329	14,758	15,201	15,657
Cost of goods sold 4 (packaging)	30,643	87,046	93,719	95,594	97,506	99,456	101,445	103,474	105,543	107,654
Operation costs 1 (direct labor)	450,300	459,306	468,492	477,862	487,419	497,168	507,111	517,253	527,598	538,150
Operating cost 2 (machinary maintainance)	4,518	4,563	4,654	4,747	4,842	4,939	5,038	5,138	5,241	5,346
Cost of goods sold 5 (plants from nursery)	270,000	-	-	-	-	272,700	-	-	-	-
Operating cost 6 (electricity)	1,800,000	1,890,000	1,984,500	2,083,725	2,187,911	2,297,307	2,412,172	2,532,781	2,659,420	2,792,391
Total cost of sales	2,640,861	2,528,877	2,641,966	2,755,247	2,873,797	3,270,571	3,127,738	3,263,677	3,405,985	3,554,969
Gross Profit	417,987	6,504,284	7,369,787	7,757,094	8,164,161	8,319,284	9,041,611	9,514,138	10,010,722	10,532,573
<i>General administration & selling expenses</i>										
Travelling expense	15,294	45,166	50,059	52,562	55,190	57,949	60,847	63,889	67,084	70,438
Communications expense (phone, fax, mail, internet, etc.)	15,294	45,166	50,059	52,562	55,190	57,949	60,847	63,889	67,084	70,438
Office vehicles running expense	15,605	17,165	20,770	27,644	40,474	65,184	115,477	225,032	450,065	900,130
Office expenses (stationary, entertainment, janitorial services, etc.)	20,000	22,000	24,200	26,620	29,282	32,210	35,431	38,974	42,872	47,159
Promotional expense	30,588	90,332	100,118	105,123	110,380	115,899	121,693	127,778	134,167	140,875
Professional fees (legal, audit, consultants, etc.)	30,588	90,332	100,118	105,123	110,380	115,899	121,693	127,778	134,167	140,875
Depreciation expense	903,360	912,360	723,360	723,360	723,360	723,360	723,360	723,360	723,360	723,360
Amortization of pre-operating costs	4,900	4,900	4,900	4,900	4,900	4,900	4,900	4,900	4,900	4,900
Amortization of legal, licensing, and training costs	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000
Subtotal	1,055,630	1,247,420	1,093,582	1,117,895	1,149,155	1,193,350	1,264,249	1,395,601	1,643,698	2,118,175
Operating Income	(637,643)	5,256,864	6,276,204	6,639,199	7,015,006	7,125,935	7,777,362	8,118,537	8,367,024	8,414,398
Earnings Before Interest & Taxes	(637,643)	5,256,864	6,276,204	6,639,199	7,015,006	7,125,935	7,777,362	8,118,537	8,367,024	8,414,398
Interest on short term debt	31,939	31,939	-	-	-	-	-	-	-	-
Interest expense on long term debt (Debt facility : Bank 1)	631,011	418,636	173,641	2,558	-	-	-	-	-	-
Subtotal	662,950	450,575	173,641	2,558	-	-	-	-	-	-
Earnings Before Tax	(1,300,593)	4,806,289	6,102,564	6,636,642	7,015,006	7,125,935	7,777,362	8,118,537	8,367,024	8,414,398
Tax	-	701,139	1,220,513	1,327,328	1,403,001	1,425,187	1,555,472	1,623,707	1,673,405	1,682,880
NET PROFIT/(LOSS) AFTER TAX	(1,300,593)	4,105,150	4,882,051	5,309,313	5,612,005	5,700,748	6,221,889	6,494,830	6,693,619	6,731,519

10.2 Projected Cash Flow Statement

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
<i>Operating activities</i>											
Net profit	-	(1,300,593)	4,105,150	4,882,051	5,309,313	5,612,005	5,700,748	6,221,889	6,494,830	6,693,619	6,731,519
Add: depreciation expense	-	903,360	912,360	723,360	723,360	723,360	723,360	723,360	723,360	723,360	723,360
amortization expense	-	24,900	24,900	24,900	24,900	24,900	24,900	24,900	24,900	24,900	24,900
Deferred income tax	-	-	701,139	604,142	438,551	433,917	366,865	362,230	357,596	352,962	348,327
Accounts receivable	-	(125,706)	(122,760)	(142,868)	(30,394)	(21,086)	(22,141)	(23,248)	(24,410)	(25,631)	(26,912)
Finished good inventory	-	-	-	-	-	-	-	-	-	-	-
Equipment inventory	(376)	(23)	(28)	(30)	(33)	(35)	(37)	(40)	(43)	(46)	691
Raw material inventory	(96,703)	(52,054)	(11,049)	(7,257)	(7,591)	(7,940)	(8,306)	(8,688)	(9,089)	(9,508)	218,186
Pre-paid building rent	-	-	-	-	-	-	-	-	-	-	-
Pre-paid lease interest	-	-	-	-	-	-	-	-	-	-	-
Advance insurance premium	-	-	-	-	-	-	-	-	-	-	-
Accounts payable	-	-	-	-	-	-	-	-	-	-	-
Other liabilities	-	-	-	-	-	-	-	-	-	-	-
Cash provided by operations	(97,079)	(550,116)	5,609,712	6,084,297	6,458,107	6,765,120	6,785,388	7,300,403	7,567,144	7,759,656	8,020,071
<i>Financing activities</i>											
Change in long term debt	4,947,788	(1,352,608)	(1,660,724)	(1,905,719)	(28,736)	-	-	-	-	-	-
Change in short term debt	-	427,731	(427,731)	-	-	-	-	-	-	-	-
Issuance of shares	7,421,681	113,400	-	-	-	-	-	-	-	-	-
Purchase of (treasury) shares	-	-	-	-	-	-	-	-	-	-	-
Cash provided by / (used for) financing activities	12,369,469	(811,477)	(2,088,455)	(1,905,719)	(28,736)	-	-	-	-	-	-
<i>Investing activities</i>											
Capital expenditure	(12,022,390)	(189,000)	-	-	-	-	-	-	-	-	-
Acquisitions	-	-	-	-	-	-	-	-	-	-	-
Cash (used for) / provided by investing activities	(12,022,390)	(189,000)	-	-	-	-	-	-	-	-	-
NET CASH	250,000	(1,550,593)	3,521,257	4,178,578	6,429,371	6,765,120	6,785,388	7,300,403	7,567,144	7,759,656	8,020,071
Cash balance brought forward		250,000	-	3,521,257	7,699,835	14,129,205	20,894,326	27,679,714	34,980,117	42,547,261	50,306,917
Cash available for appropriation	250,000	(1,300,593)	3,521,257	7,699,835	14,129,205	20,894,326	27,679,714	34,980,117	42,547,261	50,306,917	58,326,988
Dividend	-	(1,300,593)	-	-	-	-	-	-	-	-	-
Cash carried forward	250,000	-	3,521,257	7,699,835	14,129,205	20,894,326	27,679,714	34,980,117	42,547,261	50,306,917	58,326,988

10.3 Projected Balance Sheet

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Assets											
<i>Current assets</i>											
Cash & Bank	250,000	-	3,521,257	7,699,835	14,129,205	20,894,326	27,679,714	34,980,117	42,547,261	50,306,917	58,326,988
Accounts receivable	-	125,706	248,466	391,334	421,728	442,814	464,955	488,203	512,613	538,244	565,156
Equipment spare part inventory	376	399	428	458	490	525	563	603	645	691	-
Raw material inventory	96,703	148,757	159,806	167,063	174,654	182,594	190,900	199,589	208,678	218,186	-
Total Current Assets	347,079	274,862	3,929,956	8,258,689	14,726,078	21,520,260	28,336,132	35,668,511	43,269,197	51,064,038	58,892,144
<i>Fixed assets</i>											
Land	997,290	997,290	997,290	997,290	997,290	997,290	997,290	997,290	997,290	997,290	997,290
Building/Infrastructure	6,725,000	6,388,750	6,052,500	5,716,250	5,380,000	5,043,750	4,707,500	4,371,250	4,035,000	3,698,750	3,362,500
Saplings & Land Tillage	180,000	189,000	-	-	-	-	-	-	-	-	-
Machinery & Equipment	2,128,150	1,915,335	1,702,520	1,489,705	1,276,890	1,064,075	851,260	638,445	425,630	212,815	-
Furniture & fixtures	136,500	122,850	109,200	95,550	81,900	68,250	54,600	40,950	27,300	13,650	-
Office vehicles	1,560,450	1,404,405	1,248,360	1,092,315	936,270	780,225	624,180	468,135	312,090	156,045	-
Office equipment	46,000	41,400	36,800	32,200	27,600	23,000	18,400	13,800	9,200	4,600	-
Total Fixed Assets	11,773,390	11,059,030	10,146,670	9,423,310	8,699,950	7,976,590	7,253,230	6,529,870	5,806,510	5,083,150	4,359,790
<i>Intangible assets</i>											
Pre-operation costs	49,000	44,100	39,200	34,300	29,400	24,500	19,600	14,700	9,800	4,900	-
Legal, licensing, & training costs	200,000	180,000	160,000	140,000	120,000	100,000	80,000	60,000	40,000	20,000	-
Total Intangible Assets	249,000	224,100	199,200	174,300	149,400	124,500	99,600	74,700	49,800	24,900	-
TOTAL ASSETS	12,369,469	11,557,992	14,275,826	17,856,299	23,575,428	29,621,350	35,688,962	42,273,081	49,125,507	56,172,088	63,251,934
Liabilities & Shareholders' Equity											
<i>Current liabilities</i>											
Short term debt	-	427,731	-	-	-	-	-	-	-	-	-
Total Current Liabilities	-	427,731	-	-	-	-	-	-	-	-	-
<i>Other liabilities</i>											
Deferred tax	-	-	701,139	1,305,281	1,743,832	2,177,749	2,544,614	2,906,844	3,264,440	3,617,401	3,965,729
Long term debt	4,947,788	3,595,179	1,934,455	28,736	-	-	-	-	-	-	-
Total Long Term Liabilities	4,947,788	3,595,179	2,635,594	1,334,017	1,743,832	2,177,749	2,544,614	2,906,844	3,264,440	3,617,401	3,965,729
<i>Shareholders' equity</i>											
Paid-up capital	7,421,681	7,535,081	7,535,081	7,535,081	7,535,081	7,535,081	7,535,081	7,535,081	7,535,081	7,535,081	7,535,081
Retained earnings	-	-	4,105,150	8,987,201	14,296,514	19,908,519	25,609,267	31,831,156	38,325,986	45,019,605	51,751,124
Total Equity	7,421,681	7,535,081	11,640,231	16,522,282	21,831,596	27,443,601	33,144,348	39,366,238	45,861,067	52,554,687	59,286,205
TOTAL CAPITAL AND LIABILITIES	12,369,469	11,557,992	14,275,826	17,856,299	23,575,428	29,621,350	35,688,962	42,273,081	49,125,507	56,172,088	63,251,934

11 Key Assumptions

Table 11-1 Production Assumptions

Description	Total Plants	Prod./Plant	Amount / Other
Production capacity (1 st Year)	18,000	20 ⁴	360,000
Sale price growth rate (Flowers & Petals)		5%	
Production capacity utilization		80%	
Production capacity utilization growth rate		10%	
Maximum capacity utilization		95%	
Mortality rate			5%
Production (A grade)			50%
Production (B grade)			30%
Production (C grade)			20%

Table 11-2 Sale Price Assumption

Description	Price in Rs/Flower
Sale price for export (A grade)	15.36
Sale price for export (B grade)	10.00
Sale Price for local mkt (C grade)	2.50

Table 11-3 Economy Related Assumption

Description	%	
Cost of goods sold growth rate	3.0%	
Operating costs 1 (machinery maintenance)	2%	Machine maintenance per unit of production
Operating costs 2 (per plant cost)	15	Direct electricity cost per unit of production
Operating costs growth rate	2.0%	
Traveling expense	0.5%	% of administration expense
Communication expense	0.5%	% of administration expense
Office vehicles running expense	1.0%	% of vehicles cost
Promotional expense	1.0%	% of revenue
Professional fees (legal, audit, consultants, etc.)	1.0%	% of revenue

⁴ 40 from next year

