



Pre-feasibility Study

SAFFRON CULTIVATION (PLANTING, MAINTENANCE, HARVESTING AND PROCESSING)

June 2019

“The figures and financial projections are approximate due to fluctuations in exchange rates, energy costs, and fuel prices etc. Users are advised to focus on understanding essential elements such as production processes and capacities, space, machinery, human resources, and raw material etc. requirements. Project investment, operating costs, and revenues can change daily. For accurate financial calculations, utilize financial calculators on SMEDA's website and consult financial experts to stay current with market conditions.”

Small and Medium Enterprises Development Authority
Ministry of Industries and Production
Government of Pakistan

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1 DISCLAIMER

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Document Control

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2 EXECUTIVE SUMMARY

SAFFRON cultivation and processing is proposed to be located at District Mastung and outskirts of Quetta.

Saffron cultivation is considered a profitable business all around the world because this spice is very expensive and can be sold at very high prices. The objective of the pre-feasibility is to improve livelihoods across Balochistan by introducing Saffron as a profitable crop in the province and by guiding the potential growers in matters like capacity of producing better quality saffron, improving their position in value chain and marketing their product.

Another reason for introducing Saffron as a crop in the province is that the climate of some parts of the province is very suitable for its cultivation. Also, the crop does hardly needs irrigation and the decreasing water table of Balochistan makes saffron all the more suitable for the potential growers.

Saffron cultivation and processing is a very labor intensive undertaking and labor being cheap here make it feasible for growers to cultivate and produce saffron and earn high profits.

Product(s) include Dried and Packaged Saffron, dried Saffron flowers and corms. The capacity of the farm to produce Saffron in the first year is 2.5 Kg per acre and at the four year at the maximum production it will produce 5 Kg per acre Total Cost Estimates is Rs. 10,339,530 with fixed investment Rs. 4,438,053 and working capital Rs.5, 901,477

Given the cost assumptions IRR and payback are 31%and 6 years respectively

The most critical considerations or factors for success of the project are:

- Harvesting method
- Spice separation
- Drying

3 INTRODUCTION TO SMEDA

The Small and Medium Enterprises Development Authority (SMEDA) was established in October 1998 with an objective to provide fresh impetus to the economy through development of Small and Medium Enterprises (SMEs).

With a mission "to assist in employment generation and value addition to the national income, through development of the SME sector, by helping increase the number, scale and competitiveness of SMEs", SMEDA has carried out 'sectoral research' to identify policy, access to finance, business development services, strategic initiatives and institutional collaboration and networking initiatives.

Preparation and dissemination of prefeasibility studies in key areas of investment has been a successful hallmark of SME facilitation by SMEDA.

Concurrent to the prefeasibility studies, a broad spectrum of business development services is also offered to the SMEs by SMEDA. These services include identification of experts and consultants and delivery of need based capacity building programs of different types in addition to business guidance through help desk services.

4 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, marketing, finance and business management.

The purpose of this document is to facilitate potential investors in **Saffron Cultivation** by providing them with a general understanding of the business with the intention of supporting potential investors in crucial investment decisions.

The need to come up with pre-feasibility reports for undocumented or minimally documented sectors attains greater imminence as the research that precedes such reports reveal certain thumb rules; best practices developed by existing enterprises by trial and error, and certain industrial norms that become a guiding source regarding various aspects of business set-up and its successful management.

Apart from carefully studying the whole document one must consider critical aspects provided later on, which form basis of any Investment Decision.

5 BRIEF DESCRIPTION OF PROJECT & PRODUCT

Following key parameters must be addressed as per pre-feasibility study under preparation

Technology: In Pakistan Saffron can be cultivated in Quetta and district Mastung, which have suitable climatic and ecological conditions for cultivation and production of Saffron. . Texture of the soil is more important than the climate. Saffron grows in loose soil which is enriched with organic compound. It DOES NOT GROW in heavy clay soil. Make sure you have a loamy soil to start with. Saffron can be grown in any climatic conditions that are warm and humid. Texture of the soil is more important than the climate. Saffron grows in loose soil which is enriched with organic compound and calcium. Saffron is believed to be a low nutrient requiring plant and so fertile soils with high nutrient contents is not ideal because this may result in excessive vegetative growth and little flower production. Saffron can be planted in three different methods:

- Ridge method planting method
- Flat bed planting method
- Traditional Planting Method
-

Plant density differs in the above mentioned types. The land should be prepared before planting saffron corms as follows:

- Deep ploughing of land (20 - 25 cm)
- Land levelling
- Removal of weeds and dead plant material, stones, etc. from the field.
- Making of suitable ridges or small plots

Soil preparation is practiced in autumn or winter, and application of 8-12 tons well decomposed animal manure per acre is recommended. A second shallow tillage is necessary in late March or early April.

- **Location:** The Saffron Cultivation Farms can be established in Mastung and outskirts of Quetta.
- **Product:** Dried and packaged Saffron will be the end product that will be marketed through different Platforms.
- **Target Market:** In addition to local markets in Karachi, Lahore and Islamabad an enormous export market for saffron exists in Spain, Greece, Italy and the UAE.
- **Employment Generation:** The proposed project will provide direct employment to 15 people. Financial analysis shows the unit shall be profitable from the very first year of operation

5.1 Production Process Flow



5.1.1 Corm Preparation before Planting

Corm Selection: Corm for planting should come from 2 to 4 year old saffron corm bank or saffron multiplication field. Corm should be healthy with no injuries. It should be big size with approximate weight of 8 g or more and a diameter of 3 cm. However, medium size corm with the weight 6 g and diameter of 2.5 cm could also be used in the absence of big size corm.

Corm storage:

Corm should be planted immediately after they are removed from the field. Corm storage before planting is not recommended because it may reduce the flowering potential of the plant. In cases however, that storing is essential, then corm should be stored in dry and cool room (3 to 5°C) with good ventilation for only a few days but not more than a month.

Corm packaging and transport:

Saffron corm packaging and transportation to new fields should be done very carefully. Plastic or carton boxes are suitable. A maximum load of 15 – 17 kg per box is optimal.

Planting of Saffron Corm

Regardless of what planting method is used, in Balochistan in general planting of saffron corm is done from late May through early October. However, recent research results that planting of saffron corm from April through June leads the best production.

5.1.2 Saffron Plantation:

Land Preparation

The land should be prepared before planting saffron corms as follows:

- Deep ploughing of land (20 - 25 cm)
- Land levelling
- Removal of weeds and dead plant material, stones, etc. from the field.
- Making of suitable ridges or small plots

Soil preparation is practiced in autumn or winter, and application of 8-12 tons well decomposed animal manure per acre is recommended. A second shallow tillage is necessary in late March or early April.

Site Requirements

There is no doubt that saffron is one of the crops adaptable to the climatic condition of Balochistan. For better growth and production, saffron requires the following specific condition:

Climate: Mild winters with heavy snowfall and hot summers are excellent; which means that the climate of some parts of Balochistan, such as Mastung, is suitable for saffron production.

Temperature: Saffron grows well under temperate and dry climates; its vegetative growth coincides with cold weather and freezing condition. Saffron tolerates maximum of +45°C and minimum of -18°C.

Moisture: Annual rainfall requirement for saffron is about 300 mm. Saffron maximum water requirement is in March and April of about 15 to 20 liters per m² per irrigation period.

Soil: Saffron can be grown in a wide range of soils, with moderate structure and good infiltration. But for better growth and production, soil should be sandy loam, rich in calcium and high content of organic matter. Saffron is believed to be a low nutrient requiring plant and so fertile soils with high nutrient contents is not ideal because this may result in excessive vegetative growth and little flower production. Optimal soil pH value required by saffron plant is 7-7.5. Soils with high moisture content and prone to water logging or flooding are not suitable for saffron production, as corm decomposition resulting from fungus infection may occur.

Planting Method and Plant Density

Different planting methods are used in different countries. Ridge planting method is applicable in Balochistan:

Ridge Planting Method

Ridge planting method has the following advantages: irrigation is easy, corm is prevented from being soaked in water – logged soils and therefore corm decomposition is prevented. Ridge cultivation provides better protection against high temperature as well as pest and diseases.

In ridge planting method, the following must be observed:

- Height of ridge should be about 30 cm.

- Distance between ridges can be 75 cm when prepared by machine/tractor or 50 cm between ridges when prepared manually.
- Planting rate should be a minimum of 1,000 kg corm per half acre to a maximum of 2,600 kg corm per half acre.
- Planting distance between corms is flexible.
- Planting depth should be 20-25 cm below the surface of the ridge.

5.1.3 Fertilizer Application:

Saffron requires limited amount of nutrients compare to other agricultural plants. It is estimated that for 1 kg of saffron dry matter only about 12 g Nitrogen, 3 g Potassium and 22 g Phosphorous are removed from the soil.

Application of too much fertilizer to the plant is not recommended because this will result in excessive vegetative growth that will negatively affect the corm quality and flower development. The only fertilizer application required is therefore the application of 8 to 12 tons per acre of well decomposed animal manure before ploughing and planting.

5.1.4 Irrigation:

Saffron is a suitable plant for semi-arid regions like Afghanistan where water limitation is a prevalent problem. Saffron corm normally undergo dormancy period for 5 months starting from early May up to late October where irrigation is not required. The dormancy period of saffron coincide with the period where water is limited. The irrigation requirements of saffron, if there is any, occurs at times when other crops have little or no need for irrigation, so saffron does not compete with other crops for irrigation water.

The growth of saffron starts immediately after first irrigation at the end of its dormancy period. Therefore, irrigation at the end of September is essential to induce early flowering.

The succeeding growth period of saffron usually falls into the winter and spring period with sufficient rainfall. However, if rainfall is not sufficient after the flower harvesting and at the emergence of the leaves, a second irrigation should be applied.

Irrigation during summer has some positive effects on the saffron yield but it is not recommended because of the high risk of fungal infection to the corm due to water logging.

Saffron Corm Thinning: New saffron corms grow above the old corm each season and they normally protrude on soil surface by about 1-3 cm each year. The corm protruding on the surface is normally damaged by frost and thereby affecting the growth of plant. Therefore, periodically after 4 years up to 7 years, some corms need to be removed from the mother plant and these corms can be used as planting material in establishing another saffron field. Corms should be removed from the mother plant carefully by digging using shovel.

Weed control: Weed control is an important practice in saffron cultivation. Farmers have to weed regularly, as follows:

- after each irrigation
- after flowers have been harvested
- additional weeding may be needed for control of spring and summer weeds

Caution should be made during weeding, especially in ridge planting method, not to step on the ridge. The person doing the weeding should walk between ridges. Take all the weeds out of the field in a basket and feed them to animals or heap them for composting for use in the establishment of new saffron field.

Pests and Diseases Control: The taste and smell of saffron corm is attractive to many animals. The corm is palatable food for insects, worms, domestic and wild animals. It is therefore necessary that the farmers should regularly check the field for any damage.

Breaking of Soil Crust: In the second year after first irrigation, breaking of the soil crust is important practice to facilitate the emergence of flowers. Breaking of the crust in the soil surface up to depths of 5-10 cm is recommended.

5.1.5 Harvesting:

The flowering stage of saffron starts from October and continues for some 3 weeks. Each flower lives only for some 48 hours. This is the reason why saffron has such a high value. The vast amount of labor required for harvesting and on-farm processing in a relatively short period.

Saffron flowers should be picked early morning as soon as they open. The timing of the harvest and speedy processing is important, as the wilting of the flowers makes the post-harvest process difficult to impossible, and the quality suffers considerably. The optimal harvest time is therefore early in the morning before there is full sun. The flowers should be cut from the plant by the fingernails near to the ground. It should be put in a clean basket to avoid contamination of stigma. A good flower collector can collect as much as 3,000 flowers per hour.

Factors affecting quality and preciousness of saffron are:

- Harvesting method
- Spice separation
- Drying
-

Also care must be taken that:

- Picking flowers early morning before sunrise.
- Putting collected flowers in plastic baskets or other clean pots and transport them within shortest possible time to a separation or processing center.
- Dirty plastic bags or containers should not be used for collection of flowers.
- Try not to contact your hands with soil during picking of flowers.
- Picking of small blossom which are not open yet should be avoided.
- Flowers should be stored in a cold and closed area and during separation of stigma should not be exposed to sun light.
- Separation of stigma should start immediately after picking of flowers.

5.1.6 Transportation:

Method of transportation and storage of flowers is another stage that has significant effect on the quality of saffron before separation of stigma from flower. The following should be considered during transportation.

For transportation of collected flowers to processing center, bags of chemical fertilizer or dirty cloths should not be used. Clean plastic or wooden baskets which allow aeration is recommended.

Collection of flowers on any dusty surface is strictly ruinous.

In case of need to store flowers before processing for a few days the flowers can be stored under shade and layers of less than 10cm.

If there is big distance from field to processing center, flowers should be put in plastic or wooden baskets and transported in a closed cabinet of a vehicle to processing center.

Storage or place for keeping of flowers should be sterilized and closed for unconcerned people.

People who are working in the storages should consider all hygienic requirements.

People who are walking inside storage or processing center should change their clothes and shoes prior entering the center and handling flowers.

5.1.7 Processing:

Spice Separation Method:

There are three stigmas (strings) in the middle of the saffron flower with 2-3 cm long and red color called saffron. The deep red stigmas are attached to the flowers by pale filaments called styles. These, as well as the yellow stamens, are worthless as spice. To separate stigma from the flower, hold flower in one hand and take out the stigma with the fingers of the other hand and keep them in a safe place already arranged for.

- While the flowers are being collected, the stigmas are separated from the flowers. Careful separation of stigmas from flowers and styles is needed.
- Separate stigmas from flowers in a clean environment.

- Ensure that the place where stigmas are separated from flowers is as free from dust as possible.
- Ensure that the people who do this work keep their hands clean at all times, washing thoroughly with antibacterial soap or, if water is scarce, using antiseptic gel, or hand wash liquid or soap.
- When there is a need to store saffron flowers, the stored flowers' layer thickness should not be more than 10cm and storage temperature must be 0°C. In this condition, we can keep saffron flowers for 7 days.
- Separate the stigmas from the styles, unless buyers do not want this. There are some wholesalers and retailers who prefer the styles (2mm) to be included when they are not well mixed with the stigmas and are easy to separate. Because saffron is so expensive some suppliers are tempted to adulterate it with cheaper material and dye it all red to pass as pure. If buyers can see the styles they know this is unlikely to have happened. They can then separate the styles from the stigmas themselves and sell the saffron under their own labels knowing that it is pure saffron.

5.1.8 Drying saffron

To keep saffron preserved for a longer period of time, it should be dried. The process of drying has great effect on the quality and the value of the final product. There are different ways to dry saffron.

Electric oven for drying

Drying saffron in electric ovens can be done. The temperature of these ovens can be regulated from 50 to 60 degrees. These ovens are equipped with special trays

on which silken nets are placed. In this system the saffron is kept in layers of 1-2 cm thickness for a period of 30-40 minutes while the saffron dries in the oven.

Another method of drying is when the stigma and style are being separated from the flower, it is spread in rows either on cloth or a piece of paper and is dried in the shade. This system is not free from defects. It takes a longer time to dry, which increases the probability of growth of microorganisms and also pollution.

Packaging of Saffron:

Ideally, saffron should be packed in air-tight and light protected containers like tins, cans and dark glass. However, some buyers prefer saffron to be packed in a clear glass so that they can make the quality assessment easily without necessarily removing the saffron from the container. If saffron is packed in a clear glass, it must be stored in a dark place until it is sold in order to prevent deterioration and loss of quality.

Most plastic bags and solid plastic containers are not recommended for packing saffron. Although it can also be sealed, the aroma of saffron can still escape and the quality of spice becomes lower.

After certification of saffron quality by a credible laboratory, saffron should be packed in a suitable can and stored in a dry, cool and dark place till it is sold or used. Saffron quality can be kept up to 2 years if proper storage conditions are met.

Generally containers to keep saffron in bulk should have the following specifications:

- Not be poisonous for food material
- Attractive to consumer
- Resistant to light, moisture, oil and gas
- Low cost
- Resistant to physical pressure or shock
- Wastage should have least damage to environment.

Cans for Packing of Saffron for Consumers:

These include the following:

- Glass cans
- Metal cans
- Plastic cans
- Simple or complex plastic films

Saffron comes under dry food products, therefore; producers should try to keep it away from moisture, temperature, air (oxygen), light and pollutions.

5.1.9 Marketing:

Saffron Markets, Marketing Strategies and Pricing:

To increase saffron sales, the following markets and marketing strategies need to be considered:

- Local market needs to be addressed through a Home Business Marketing strategy, which creating linkages with society and businesses through seminars, exhibitions, symposiums as well as the creation of saffron sales representatives Other activities:
- Networking and organizing of local market through coordination with industrial, food and home consumers
- Creativity on packaging according to consumers interests
- Raising awareness of families about significance of saffron and methods of using saffron -at home
- International Market

Local market (Home business marketing) promotion:

In local market following strategies be followed:

- Public relations.
- Market research (feasibility study)
- Positioning (Competitive local market)

- Brand name / trade mark
- Improve distribution system in national markets

5.2 Installed and Operational Capacities

The proposed 'Saffron Farm' would be located in 5 acre of agriculture land. Approximately 58080 plants will be sowed per acre. The average dried saffron produced per acre during year one is assumed as 2.5 kgs whereas maximum Saffron produced in the subsequent years (Maximum production starts at year 4) is estimated as 5 kgs per acre. Therefore, total Production produced from the proposed farm in year one is 13 kgs and subsequently around 25 kgs in the later years.

5.3 CRITICAL FACTORS

The most critical considerations or factors for success of the project are:

Harvesting method

Spice separation

Drying

These all effect production greatly which is why care must be taken on these accounts:

Saffron Corm Thinning: New saffron corms grow above the old corm each season and they normally protrude on soil surface by about 1-3 cm each year. The corm protruding on the surface is normally damaged by frost and thereby affecting the growth of plant. Therefore, periodically after 4 years up to 7 years, some corms need to be removed from the mother plant and these corms can be used as planting material in establishing another saffron field. Corms should be removed from the mother plant carefully by digging using shovel.

Weed control: Weed control is an important practice in saffron cultivation. Farmers have to weed regularly, as follows:

- after each irrigation
- after flowers have been harvested
- additional weeding may be needed for control of spring and summer weeds

Caution should be made during weeding, especially in ridge planting method, not to step on the ridge. The person doing the weeding should walk between ridges. Take all the weeds out of the field in a basket and feed them to animals or heap them for composting for use in the establishment of new saffron field.

Breaking of Soil Crust: In the second year after first irrigation, breaking of the soil crust is important practice to facilitate the emergence of flowers. Breaking of the crust in the soil surface up to depths of 5-10 cm is recommended.

6 GEOGRAPHICAL POTENTIAL FOR INVESTMENT

The Saffron Cultivation Farms can be established in Mastung and outskirts of Quetta. Also it can be grown in a small area of Soon valley in Punjab, which have suitable climatic and ecological conditions for cultivation and production of Saffron.

7 POTENTIAL TARGET CUSTOMERS / MARKETS

In addition to local markets in Karachi, Lahore and Islamabad an enormous export market for saffron exists in Spain, Greece, Italy and the UAE.

8 PROJECT COST SUMMARY

8.1 Project Economics

All the figures in this financial model have been calculated for estimated sales of Rs.132,053,350 million in the year one. The capacity utilization during year one is worked out at 65% with 5 % increase in subsequent years up to the maximum capacity utilization of 95%.

The average dried saffron produced per acre during year one is assumed as 2.5 kgs whereas maximum Saffron produced in the subsequent years (Maximum production starts at year 4) is estimated as 5 kgs per acre. Therefore, total Production produced from the proposed farm in year one is 13 kgs and subsequently around 25 kgs in the later years.

The following table shows internal rate of return, payback period and net present value of the proposed venture.

Table 1: Project Economics

Description	Details
Internal Rate of Return (IRR)	30%
Payback Period (yrs.)	6.20
Net Present Value (Rs.)	Rs.59,485,113

8.2 Project Financing

Following table provides details of the equity required and variables related to bank loan;

Table 2: Project Financing

Description	Details
Total Equity (40%)	Rs.4,538,143
Bank Loan (60%)	Rs.6,807,214
Markup to the Borrower (%age / annum)	14%
Tenure of the Loan (Years)	5 Yrs

8.3 Project Cost

Following fixed and working capital requirements have been identified for operations of the proposed business.

Table 3: Project Cost

Capital Investment	Rs. in actuals
Building/Infrastructure	3,058,800
Machinery & equipment	1,000,000
Furniture & fixtures	99,580
Office equipment	1,500
Pre-operating costs	1,284,000
Total Capital Costs	5,443,880
Working Capital	Rs. in actuals
Equipment spare part inventory	75,373
Raw material inventory	5,276,104
Upfront insurance payment	50,000
Cash	500,000
Total Working Capital	5,901,477
Total Investment	11,345,357

8.4 Space Requirement

The proposed Saffron farm will be spread on five (05) acres of agricultural land. It is recommended to acquire the land on lease basis. The average lease cost in Mastung 8000 o

10,000 per acres. For the purpose of this pre-feasibility, average land lease cost is estimated at Rs. 8000 per acre. The infrastructural requirements of the project mainly comprises of the construction of Management Building, storage, and washroom. The cost of construction for the proposed infrastructure requirement is provided in the table below:

Table 4: Space Requirement

Description	Estimated Area (Sq.Ft)	Unit Cost (Rs.)	Total Cost (Rs.)
Management Office	588	1500	882000
Store Room	600	1500	900000
Wash Room	64	1200	76800
Total			1858800

8.5 Machinery & Equipment Requirement

Plant, machinery and equipment for the proposed project are stated below

Table 5: Machinery & Equipment

Description	Quantity	Unit Cost (Rs.)	Total Cost (Rs.)
Tube Well	1	900,000	900,000
Generator	1	300,000	300,000
Total			1200000

8.6 Furniture & Fixtures Requirement

Details of the furniture and fixture required for the project are given below;

Table 6: Furniture & Fixture

Description	Quantity	Unit Cost (Rs.)	Total Cost (Rs.)
Carpeting	588 Sq.Ft	35	20580
Total			20580

8.7 Office Equipment Requirement

Following office equipment will be required for Saffron Cultivation farm.

Table 7: Office Equipment

Description	Quantity	Unit Cost (Rs.)	Total Cost (Rs.)
Telephone Sets	1	1500	1500
Total			1500

8.8 Human Resource Requirement

In order to run operations of Saffron Cultivation farm smoothly, details of human resources required along with number of employees and monthly salary are recommended as under;

Table 8: Human Resource Requirement

Description	No. of Employees	Monthly Salary per person (Rs.)
Farm Manager	1	30000
Labours	11	21000
Total		51000

8.9 Revenue Generation

Based on the capacity utilization of 65%, sales revenue during the first year of operations is estimated as under;

Table 9: Revenue Generation – Year 1

Description	No. of Kg Produced	Sale Price / unit (Rs.)	Sales Revenue (Rs.)
Dried Saffron	180895	730	132,053,350
Total			132,053,350

9 CONTACT DETAILS

In order to facilitate potential investors, contact details of private sector Service Providers relevant to the proposed project be given.

9.1 Saffron Corm Suppliers

Name of Supplier	Address	E-mail	Website
SKY SEEDS	Sky Seeds 89 Vegetable Market, Alama Iqbal Town Lahore, Pakistan	info@skyseeds.com	www.skyseeds.com

9.2 Technical Experts / Consultants

Name of Expert/Organization	Address	Phone
Muhammad Asif	Agriculture Directorate Quetta	(081) 2870752

10 USEFUL WEB LINKS

Small & Medium Enterprises Development Authority (SMEDA)	www.smeda.org.pk
Government of Pakistan	www.pakistan.gov.pk
Ministry of Industries & Production	www.moip.gov.pk
Ministry of Education, Training & Standards in Higher Education	http://moptt.gov.pk
Government of Punjab	www.punjab.gov.pk
Government of Sindh	www.sindh.gov.pk
Government of Khyber Pakhtunkhwa	www.khyberpakhtunkhwa.gov.pk
Government of Balochistan	www.balochistan.gov.pk
Government of Gilgit Baltistan	www.gilgitbaltistan.gov.pk
Government of Azad Jamu Kashmir	www.ajk.gov.pk
Trade Development Authority of Pakistan (TDAP)	www.tdap.gov.pk
Security Commission of Pakistan (SECP)	www.secp.gov.pk
Federation of Pakistan Chambers of Commerce and Industry (FPCCI)	www.fpcci.com.pk
State Bank of Pakistan (SBP)	www.sbp.org.pk
Punjab Small Industries Corporation	www.psic.gop.pk
Sindh Small Industries Corporation	www.ssic.gos.pk
Pakistan Horticulture Development and Export Company (PHDEC)	www.phdec.org.pk
Punjab Vocational Training Council (PVTC)	www.pvtc.gop.pk
Technical Education and Vocational Training Authority (TEVTA)	www.tevta.org
Pakistan Readymade Garment Technical Training Institute	www.prgmea.org/prgtti/
Livestock & Dairy Development Department, Government of Punjab.	www.livestockpunjab.gov.pk
Punjab Industrial Estates (PIE)	www.pie.com.pk
Faisalabad Industrial Estate Development and Management Company (FIEDMC)	www.fiedmc.com.pk

11 ANNEXURES

11.1 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	132,053,350	162,748,025	191,848,344	225,141,245	263,174,244	306,562,431	355,996,512	392,456,814	431,702,495	474,872,745
Cost of goods sold	128,435,450	151,094,213	170,014,816	190,449,745	212,503,129	236,285,727	261,915,328	275,615,514	289,396,290	303,866,104
Gross Profit	3,617,900	11,653,813	21,833,527	34,691,501	50,671,116	70,276,703	94,081,184	116,841,300	142,306,205	171,006,641
<i>General administration & selling expenses</i>										
Administration expense	1,322,520	1,451,282	1,592,581	1,747,637	1,917,790	2,104,508	2,309,406	2,534,253	2,780,992	3,051,753
Rental expense	-	-	-	-	-	-	-	-	-	-
Utilities expense	-	-	-	-	-	-	-	-	-	-
Travelling & Comm. expense (phone, fax, etc.)	25,680	28,180	30,924	33,935	37,239	40,864	44,843	49,209	54,000	59,257
Office vehicles running expense	-	-	-	-	-	-	-	-	-	-
Office expenses (stationary, etc.)	12,840	14,090	15,462	16,967	18,619	20,432	22,421	24,604	27,000	29,629
Promotional expense	1,320,534	1,627,480	1,918,483	2,251,412	2,631,742	3,065,624	3,559,965	3,924,568	4,317,025	4,748,727
Insurance expense	50,000	45,000	40,000	35,000	30,000	25,000	20,000	15,000	10,000	5,000
Professional fees (legal, audit, etc.)	660,267	813,740	959,242	1,125,706	1,315,871	1,532,812	1,779,983	1,962,284	2,158,512	2,374,364
Depreciation expense	263,048	263,048	263,048	263,048	263,048	263,048	263,048	263,048	263,048	263,048
Amortization expense	55,635	55,635	55,635	55,635	55,635	-	-	-	-	-
Property tax expense	-	-	-	-	-	-	-	-	-	-
Miscellaneous expense	3,961,601	4,882,441	5,755,450	6,754,237	7,895,227	9,196,873	10,679,895	11,773,704	12,951,075	14,246,182
Subtotal	7,672,123	9,180,896	10,630,825	12,283,578	14,165,171	16,249,162	18,679,562	20,546,671	22,561,652	24,777,961
Operating Income	(4,054,223)	2,472,916	11,202,702	22,407,923	36,505,944	54,027,541	75,401,622	96,294,629	119,744,554	146,228,680
Other income	25,000	-	-	-	661,351	2,796,696	6,488,530	11,679,410	18,531,512	28,332,817
Gain / (loss) on sale of assets	-	-	-	-	-	-	-	-	-	-
Earnings Before Interest & Taxes	(4,029,223)	2,472,916	11,202,702	22,407,923	37,167,295	56,824,237	81,890,152	107,974,039	138,276,066	174,561,497
Interest expense	2,003,656	3,210,886	2,921,918	1,687,469	471,954	-	-	-	-	-
Earnings Before Tax	(6,032,879)	(737,970)	8,280,784	20,720,454	36,695,342	56,824,237	81,890,152	107,974,039	138,276,066	174,561,497
Tax	-	-	619,073	8,495,386	15,045,090	23,297,937	33,574,962	44,269,356	56,693,187	71,570,214
NET PROFIT/(LOSS) AFTER TAX	(6,032,879)	(737,970)	7,661,711	12,225,068	21,650,251	33,526,300	48,315,190	63,704,683	81,582,879	102,991,283
Balance brought forward		(6,032,879)	(6,770,849)	890,861	13,115,929	34,766,181	68,292,481	116,607,670	180,312,353	261,895,232
Total profit available for appropriation	(6,032,879)	(6,770,849)	890,861	13,115,929	34,766,181	68,292,481	116,607,670	180,312,353	261,895,232	364,886,515
Dividend	-	-	-	-	-	-	-	-	-	-
Balance carried forward	(6,032,879)	(6,770,849)	890,861	13,115,929	34,766,181	68,292,481	116,607,670	180,312,353	261,895,232	364,886,515

11.2 Balance Sheet

Statement Summaries											SMEDA
Balance Sheet											
	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
	Rs. in actuals										
Assets											
<i>Current assets</i>											
Cash & Bank	500,000	-	-	-	-	13,227,019	42,706,905	87,063,686	146,524,523	224,105,721	342,550,619
Accounts receivable	-	10,853,700	12,115,125	14,572,454	17,136,558	20,067,760	23,413,836	27,228,450	30,758,356	33,869,561	37,256,517
Finished goods inventory	-	5,584,150	6,314,385	7,103,683	7,956,125	8,876,052	9,868,081	10,937,124	11,483,980	12,058,179	12,661,088
Equipment spare part inventory	75,373	93,104	110,001	129,383	151,584	176,976	205,981	227,593	250,921	276,641	-
Raw material inventory	5,276,104	6,517,268	7,700,055	9,056,841	10,610,870	12,388,321	14,418,669	15,931,520	17,564,500	19,364,862	-
Pre-paid annual land lease	-	-	-	-	-	-	-	-	-	-	-
Pre-paid building rent	-	-	-	-	-	-	-	-	-	-	-
Pre-paid lease interest	-	-	-	-	-	-	-	-	-	-	-
Pre-paid insurance	50,000	45,000	40,000	35,000	30,000	25,000	20,000	15,000	10,000	5,000	-
Total Current Assets	5,901,477	23,093,222	26,279,566	30,897,361	35,885,137	54,761,127	90,633,471	141,403,372	206,592,281	289,679,963	392,468,224
<i>Fixed assets</i>											
Land	-	-	-	-	-	-	-	-	-	-	-
Building/Infrastructure	3,058,800	2,905,860	2,752,920	2,599,980	2,447,040	2,294,100	2,141,160	1,988,220	1,835,280	1,682,340	1,529,400
Machinery & equipment	1,000,000	900,000	800,000	700,000	600,000	500,000	400,000	300,000	200,000	100,000	-
Furniture & fixtures	99,580	89,622	79,664	69,706	59,748	49,790	39,832	29,874	19,916	9,958	-
Office vehicles	-	-	-	-	-	-	-	-	-	-	-
Office equipment	1,500	1,350	1,200	1,050	900	750	600	450	300	150	-
Total Fixed Assets	4,159,880	3,896,832	3,633,784	3,370,736	3,107,688	2,844,640	2,581,592	2,318,544	2,055,496	1,792,448	1,529,400
<i>Intangible assets</i>											
Pre-operation costs	278,173	222,538	166,904	111,269	55,635	-	-	-	-	-	-
Legal, licensing, & training costs	-	-	-	-	-	-	-	-	-	-	-
Total Intangible Assets	278,173	222,538	166,904	111,269	55,635	-	-	-	-	-	-
TOTAL ASSETS	10,339,530	27,212,592	30,080,253	34,379,366	39,048,460	57,605,767	93,215,063	143,721,916	208,647,777	291,472,411	393,997,624
Liabilities & Shareholders' Equity											
<i>Current liabilities</i>											
Accounts payable	-	11,099,657	13,060,625	14,728,853	16,537,989	18,498,775	20,622,771	22,855,433	24,117,611	25,400,366	24,975,296
Export re-finance facility	-	-	-	-	-	-	-	-	-	-	-
Short term debt	-	15,750,013	17,853,917	13,141,626	4,373,344	-	-	-	-	-	-
Other liabilities	-	-	-	-	-	-	-	-	-	-	-
Total Current Liabilities	-	26,849,670	30,914,542	27,870,479	20,911,333	18,498,775	20,622,771	22,855,433	24,117,611	25,400,366	24,975,296
<i>Other liabilities</i>											
Lease payable	-	-	-	-	-	-	-	-	-	-	-
Deferred tax	-	-	-	205,000	205,000	205,000	164,000	123,000	82,000	41,000	-
Long term debt	6,203,718	2,259,989	1,800,749	1,277,214	680,385	-	-	-	-	-	-
Total Long Term Liabilities	6,203,718	2,259,989	1,800,749	1,482,214	885,385	205,000	164,000	123,000	82,000	41,000	-
<i>Shareholders' equity</i>											
Paid-up capital	4,135,812	4,135,812	4,135,812	4,135,812	4,135,812	4,135,812	4,135,812	4,135,812	4,135,812	4,135,812	4,135,812
Retained earnings	-	(6,032,879)	(6,770,849)	890,861	13,115,929	34,766,181	68,292,481	116,607,670	180,312,353	261,895,232	364,886,515
Total Equity	4,135,812	(1,897,067)	(2,635,037)	5,026,673	17,251,741	38,901,993	72,428,293	120,743,482	184,448,165	266,031,044	369,022,327
TOTAL CAPITAL AND LIABILITY	10,339,530	27,212,592	30,080,253	34,379,366	39,048,460	57,605,767	93,215,063	143,721,916	208,647,777	291,472,411	393,997,624
<i>Note: Total assets value will differ from project cost due to first installment of leases paid at the start of year 0.</i>											

11.3 Cash Flow Statement

(0) 0 (0) 0 (0) 0 (0) 0 (0) 0 (0)											
Statement Summaries											
Cash Flow Statement											
SMEDA											
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
<i>Operating activities</i>											
Net profit	-	(6,032,879)	(737,970)	7,661,711	12,225,068	21,650,251	33,526,300	48,315,190	63,704,683	81,582,879	102,991,283
Add: depreciation expense	-	263,048	263,048	263,048	263,048	263,048	263,048	263,048	263,048	263,048	263,048
amortization expense	-	55,635	55,635	55,635	55,635	55,635	-	-	-	-	-
Deferred income tax	-	-	-	205,000	-	-	(41,000)	(41,000)	(41,000)	(41,000)	(41,000)
Accounts receivable	-	(10,853,700)	(1,261,425)	(2,457,329)	(2,564,105)	(2,931,201)	(3,346,076)	(3,814,614)	(3,529,906)	(3,111,205)	(3,386,956)
Finished good inventory	-	(5,584,150)	(730,235)	(789,298)	(852,442)	(919,927)	(992,029)	(1,069,042)	(546,856)	(574,199)	(602,909)
Equipment inventory	(75,373)	(17,731)	(16,897)	(19,383)	(22,200)	(25,392)	(29,005)	(21,612)	(23,328)	(25,719)	276,641
Raw material inventory	(5,276,104)	(1,241,164)	(1,182,787)	(1,356,786)	(1,554,029)	(1,777,451)	(2,030,348)	(1,512,851)	(1,632,981)	(1,800,361)	19,364,862
Pre-paid building rent	-	-	-	-	-	-	-	-	-	-	-
Pre-paid lease interest	-	-	-	-	-	-	-	-	-	-	-
Advance insurance premium	(50,000)	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000
Accounts payable	-	11,099,657	1,960,968	1,668,228	1,809,136	1,960,786	2,123,996	2,232,663	1,262,178	1,282,755	(425,070)
Other liabilities	-	-	-	-	-	-	-	-	-	-	-
Cash provided by operations	(5,401,477)	(12,306,284)	(1,644,663)	5,235,826	9,365,111	18,280,748	29,479,886	44,356,781	59,460,837	77,581,198	118,444,898
<i>Financing activities</i>											
Change in long term debt	6,203,718	(3,943,729)	(459,241)	(523,534)	(596,829)	(680,385)	-	-	-	-	-
Change in short term debt	-	15,750,013	2,103,904	(4,712,291)	(8,768,282)	(4,373,344)	-	-	-	-	-
Change in export re-finance facility	-	-	-	-	-	-	-	-	-	-	-
Add: land lease expense	-	-	-	-	-	-	-	-	-	-	-
Land lease payment	-	-	-	-	-	-	-	-	-	-	-
Change in lease financing	-	-	-	-	-	-	-	-	-	-	-
Issuance of shares	4,135,812	-	-	-	-	-	-	-	-	-	-
Purchase of (treasury) shares	-	-	-	-	-	-	-	-	-	-	-
Cash provided by / (used for) financ	10,339,530	11,806,284	1,644,663	(5,235,826)	(9,365,111)	(5,053,729)	-	-	-	-	-
<i>Investing activities</i>											
Capital expenditure	(4,438,053)	-	-	-	-	-	-	-	-	-	-
Acquisitions	-	-	-	-	-	-	-	-	-	-	-
Cash (used for) / provided by invest	(4,438,053)	-	-	-	-	-	-	-	-	-	-
NET CASH	500,000	(500,000)	-	-	-	13,227,019	29,479,886	44,356,781	59,460,837	77,581,198	118,444,898
Cash balance brought forward	-	500,000	-	-	-	-	13,227,019	42,706,905	87,063,686	146,524,523	224,105,721
Cash available for appropriation	500,000	-	-	-	-	13,227,019	42,706,905	87,063,686	146,524,523	224,105,721	342,550,619
Dividend	-	-	-	-	-	-	-	-	-	-	-
Cash carried forward	500,000	-	-	-	-	13,227,019	42,706,905	87,063,686	146,524,523	224,105,721	342,550,619

12 KEY ASSUMPTIONS

12.1 Cash Flow Assumptions

Description	Details
Accounts Receivable Cycle (In days)	30
Accounts Payable Cycle (In days)	30
Equipment Spare Parts Inventory (In months)	1

12.2 Revenue Assumptions

Description	Details
Sale Price Per Kg	Rs. 730
Growth in Sales Price	10%
Maximum Saffron In Kg	13 Kg

12.3 Financial Assumptions

Description	Details
Debt	40
Equity	60
Interest Rate On Debt	16
Debt Tenure	5

Small and Medium Enterprises Development Authority

HEAD OFFICE

4th Floor, Building No. 3, Aiwan-e-Iqbal Complex, Egerton Road, Lahore
Tel: (92 42) 111 111 456, Fax: (92 42) 36304926-7

www.smeda.org.pk, helpdesk@smeda.org.pk

REGIONAL OFFICE PUNJAB	REGIONAL OFFICE SINDH	REGIONAL OFFICE KPK	REGIONAL OFFICE BALOCHISTAN
3 rd Floor, Building No. 3, Aiwan-e-Iqbal Complex, Egerton Road Lahore, Tel: (042) 111-111-456 Fax: (042) 36304926-7 helpdesk.punjab@smeda.org.pk	5 TH Floor, Bahria Complex II, M.T. Khan Road, Karachi. Tel: (021) 111-111-456 Fax: (021) 5610572 helpdesk-khi@smeda.org.pk	Ground Floor State Life Building The Mall, Peshawar. Tel: (091) 9213046-47 Fax: (091) 286908 helpdesk-pew@smeda.org.pk	Bungalow No. 15-A Chaman Housing Scheme Airport Road, Quetta. Tel: (081) 831623, 831702 Fax: (081) 831922 helpdesk-qta@smeda.org.pk