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# Pre-Feasibility Study

## OLIVE OIL EXTRACTION UNIT



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**Ministry of Industries & Production**  
**Government of Pakistan**  
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**June 2017**

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## Table of Contents

<b>1</b>	<b>DISCLAIMER.....</b>	<b>3</b>
<b>2</b>	<b>EXECUTIVE SUMMARY .....</b>	<b>4</b>
<b>3</b>	<b>INTRODUCTION TO SMEDA.....</b>	<b>4</b>
<b>4</b>	<b>PURPOSE OF THE DOCUMENT.....</b>	<b>5</b>
<b>5</b>	<b>BRIEF DESCRIPTION OF PROJECT &amp; PRODUCT.....</b>	<b>5</b>
5.1	PRODUCT DESCRIPTION.....	6
5.2	PRODUCTION PROCESS FLOW .....	7
5.3	INSTALLED AND OPERATIONAL CAPACITIES.....	9
<b>6</b>	<b>CRITICAL FACTORS.....</b>	<b>9</b>
<b>7</b>	<b>GEOGRAPHICAL POTENTIAL FOR INVESTMENT .....</b>	<b>10</b>
<b>8</b>	<b>POTENTIAL TARGET CUSTOMERS / MARKETS.....</b>	<b>11</b>
<b>9</b>	<b>PROJECT COST SUMMARY.....</b>	<b>11</b>
9.1	PROJECT ECONOMICS.....	11
9.2	PROJECT FINANCING .....	11
9.3	PROJECT COST.....	12
9.4	SPACE REQUIREMENT.....	12
9.5	MACHINERY & EQUIPMENT REQUIREMENT.....	13
9.6	FURNITURE & FIXTURES REQUIREMENT.....	13
9.7	OFFICE EQUIPMENT REQUIREMENT .....	13
9.8	OFFICE VEHICLE REQUIREMENT.....	14
9.9	HUMAN RESOURCE REQUIREMENT .....	14
9.10	UTILITIES AND OTHER COSTS .....	14
9.11	REVENUE GENERATION.....	15
9.12	RAW MATERIAL REQUIREMENT .....	15
<b>10</b>	<b>USEFUL WEB LINKS.....</b>	<b>16</b>
<b>11</b>	<b>ANNEXURES .....</b>	<b>17</b>
11.1	INCOME STATEMENT .....	17
11.2	BALANCE SHEET.....	18
11.3	CASH FLOW STATEMENT .....	19
<b>12</b>	<b>KEY ASSUMPTIONS.....</b>	<b>20</b>
12.1	OPERATING COST ASSUMPTIONS.....	20
12.2	PRODUCTION COST ASSUMPTIONS .....	20
12.3	REVENUE ASSUMPTIONS .....	20
12.4	CASH FLOW ASSUMPTIONS.....	21

## 1 DISCLAIMER

This information memorandum is to introduce the subject matter and provide a general idea and information on the said matter. Although, the material included in this document is based on data / information gathered from various reliable sources; however, it is based upon certain assumptions, which may differ from case to case. The information has been provided on, as is where is basis without any warranties or assertions as to the correctness or soundness thereof. Although, due care and diligence has been taken to compile this document, the contained information may vary due to any change in any of the concerned factors, and the actual results may differ substantially from the presented information. SMEDA, its employees or agents do not assume any liability for any financial or other loss resulting from this memorandum in consequence of undertaking this activity. The contained information does not preclude any further professional advice. The prospective user of this memorandum is encouraged to carry out additional diligence and gather any information which is necessary for making an informed decision, including taking professional advice from a qualified consultant / technical expert before taking any decision to act upon the information.

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### ***Document Control***

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## 2 EXECUTIVE SUMMARY

Olive Oil Extraction Unit is proposed to be located in Pothohar region which is a large plateau region in north-eastern Pakistan covering an area of 8,592 square miles. It has been identified as suitable for olive production because of its favorable climate and ideal topography.

The demand for olive oil is increasing day by day due to eating habits of people of Pakistan. Local production does not meet the demand which indicates a huge potential for growing olive trees. Pakistan imported 7.38 million dollars' worth olive oil from the world in the year 2015.

The proposed unit has a capacity to process 200 kgs of olive fruit per hour which will produce 40 liters of Olive Oil under ideal conditions and produce 57,600 liters of virgin oil per annum based on 60 working days (1,440 hours a season, working three shifts per day). The unit will extract olive oil through centrifugation process of olives and cake will be sold to local market. The product will be sold in 3 different packages of 0.5, 1.0 and 4.0 liter.

The proposed Olive Oil Extraction Unit comprise a total investment of Rs. 12.77 million with fixed investment of Rs. 11.30 million and working capital of Rs. 1.47 million. The Net Present Value (NPV) of the project is Rs. 6.51 million with an Internal Rate of Return (IRR) of 26% and a payback period of 4.65 years. The project will provide employment opportunity to 13 people. Higher return on investment and a steady growth of business is expected with the entrepreneur having some prior experience or education in the related field of business.

## 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 'sectorial 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 **Olive Oil Extraction Unit** 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

Pakistan is predominantly an agrarian economy, yet it is unable to fulfill the demand of edible oil for domestic requirements. One of the challenges to the economy of Pakistan is the edible oil deficit. Edible oil is considered as a necessity and not a luxury product and hence its demand is relatively inelastic and grows with time. There are many reasons behind the shortcomings such as lack of awareness of farmers and technological deficiency in oilseed production etc.

The demand for olive oil is increasing day by day due to eating habits of people of Pakistan. Local production does not meet the demand which indicates a huge potential for growing olive trees. Currently in Pakistan about 6 to 8 olive oil extraction units having capacity to process 750 to 1,000 kgs of olive fruit per hour are installed which cannot meet the local demand of Olive Oil<sup>1</sup>. In 2015, Pakistan imported 2,706 tons of Olive Oil worth 7.38 million US dollars<sup>2</sup>.

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<sup>1</sup> Undocumented data, collected from industry experts

<sup>2</sup> Trade Map (Product: 1509, 151000)

This Pre-feasibility study is about setting up “Olive Oil Extraction Unit” in Potohar region in Punjab or in any area where olives are cultivated. The Barani Agriculture Research Institute (BARI) located in Punjab’s Chakwal district, has already planted 473,265 olive trees in the region so far<sup>3</sup>. The BARI reveals that the massive Olive Valley Project is not only providing olive saplings to local farmers, but also technical support on olive grove management and financial support for water resource development and drip irrigation.

## 5.1 Product Description

The proposed processing facility will extract Olive Oil from the olive fruits and remaining cake will be sold to local market. The olive cakes are used for different purposes, such as in cosmetics, recipes, medicines, animal feed, etc.

There are many types of olive oil, some of them are described below;

- **Virgin Olive Oil:** The most popular variety, virgin olive oil is a well-known cooking oil with a surprisingly low acid content. It is best suitable for people who want to enjoy the benefits of olive oil.
- **Extra Virgin Olive Oil:** “Extra” is the highest grade for olive oil, made by cold pressing olive fruit, this oil is considered to be the best for human body and it is very expensive. The virgin oil produced from the mechanical pressing described above may be called “extra” if it has less than 1% free oleic acid, and if it exhibits superior taste, color and aroma. Thus, the “extra” in extra virgin olive oil means “premium,” or simply, “the best.”
- **Pure Olive Oil:** This oil is actually an amalgamation of refined and virgin olive oils. It has a high acidic content.
- **Lampante Oil:** This type of oil is used only as a fuel and is not suitable for cooking.

The proposed processing facility will extract virgin olive oil through centrifugation process. The benefits of olive oil are given below;

- Vitamin E available in Olives is the body's primary fat-soluble antioxidant. Anti-oxidants help to strengthen the body's immune system; reducing the severity of asthma, cancer, osteoarthritis, and rheumatoid arthritis, premature ageing, as well as delaying the effects of ageing.
- Used as a balm, it fortifies and moisturizes the skin, combating dry skin and softening it. It also combats acne.

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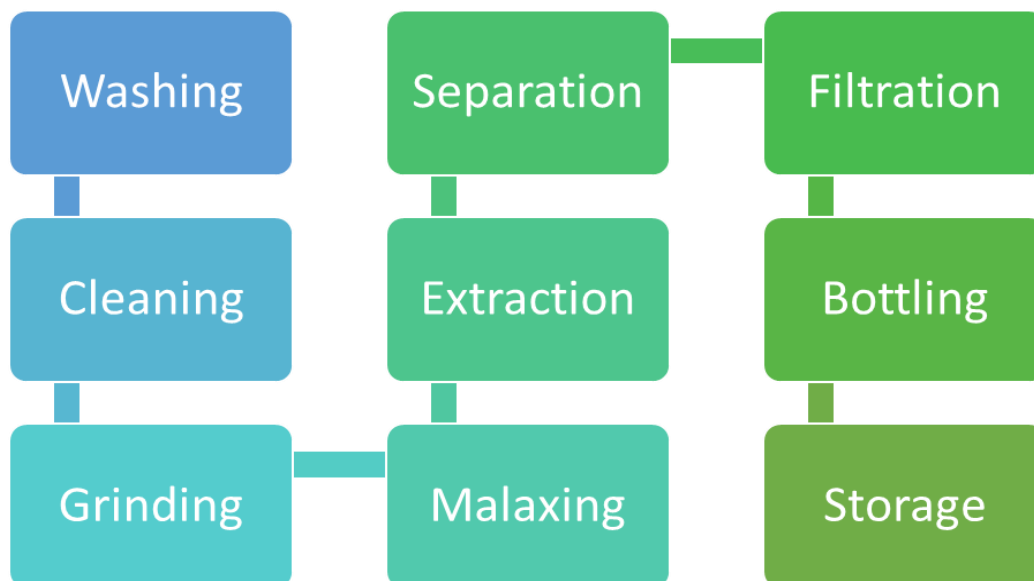
<sup>3</sup> Director Olive BARI, Chakwal

- Helps against wrinkles and delays the effects of old age.
- Helps combat strokes, heart-disease, high blood pressure and diabetes.
- The decoction of olive leaves in water is effective against mouth and lip ulcers and allergic dermatitis also.
- Tea of Olive leaves helps against high blood pressure.

## 5.2 Production Process Flow

Extraction Process of Olive Oil is given below in detail:

**Figure 1: Extraction Process Flow**



### I. SORTING & CLEANING

After the ripe olives have been combed from the trees, they are picked over by hand to weed out unsound olives. The olives are divided into categories according to their plumpness, state of ripeness, and quality. Then the olives are taken to the press and stored for a short period of time. The period is short enough to prevent fermentation but long enough to allow the olives to get warm so that they release their oil easily.

The first step after the Sorting & Grading is cleaning the olives and removing the stems, leaves, twigs, and other debris left with the olives. The olives should be washed with water to remove pesticides, dirt, etc. Rocks and sand will damage

a hammer mill and quickly wear out a centrifugal decanter or oil separator, reducing life span from 25 to as little as 5 years.

## **II. GRINDING & PASTE FORMATION**

In ancient times, the olives were mashed into a paste with a simple mortar and pestle. This principle was expanded upon until the stone mortars were large enough to require slaves or pack animals to operate them. In the modern process, the milled olives travel from the mill into vats in which slowly turning blades mash the olives into a homogenized paste. The purpose of crushing is to tear the flesh cells to facilitate the release of the oil from the vacuoles. This step can be done with stone mills, metal tooth grinders, or various kinds of hammer mills.

## **III. MALAXING (MIXING THE PASTE)**

Malaxing (mixing) the paste for 20 to 45 minutes allows small oil droplets to combine into bigger ones. It is an indispensable step. The paste can be heated or water can be added during this process to increase the yield, although this generally results in lowering the quality of the oil. The most common mixer is a horizontal trough with spiral mixing blades. Longer mixing times increase oil yield but allows a longer oxidation period that decreases shelf life.

## **IV. SEPARATING / EXTRACTION**

The next step is separating the oil from the rest of the olive components. This used to be done with presses, but is now done by centrifugation. Some centrifuges are called three-phase because they separate the oil, the water, and the solids separately. The two-phase centrifuges separate the oil from a wet paste. In most cases, the oil coming out of the first centrifuge is further processed to eliminate any remaining water and solids by a second centrifuge that rotates faster. The oil is then left in tanks or barrels where a final separation, if needed, happens through gravity. This is called racking the oil. Finally the oil can be filtered, if desired. Centrifugation methods are becoming more popular for the pressing process as well as for separating the oil from the vegetable water. Although centrifugation requires more energy and water, the method takes up less space in the factory and requires a shorter set-up time. Centrifugation also eliminates the need for pressing bags, which must be washed after each pressing.

Lastly, possible additional processing steps include refining the oil to reduce its acidity and improve flavor (in defective oils) by alkali (chemical reaction with an alkali – caustic soda) or steam processing; bleaching the oil to reduce



chlorophyll, carotenoids, residual fatty acids, and pesticides using diatomaceous earth, activated carbon, or synthetic silica treatment, and deodorization to reduce odors with the use of activated carbon. Needless to say, these steps are only used for low quality oil.

## V. STORAGE & PACKAGING

The oil is stored in underground vats until it is ready to be transported. Then the oil is canned or bottled on an assembly line. Cans or dark-tinted bottles will keep the deep-green color of the olive oil intact. Oil placed in clear-glass bottles will fade to a yellowish-green. However, the flavor is not affected. In many cases, olive oil distributors purchase the olive from the producers and rebottle it. Packaging has become more ornate as the popularity of olive oil has grown. It is not unusual to purchase olive oil in unusually shaped bottles topped with netting or rope. Some packagers also hire professional artists to design their labels.

### 5.3 Installed And Operational Capacities

The facility will have the capacity to process 200 kgs / hour of olives which brings 20% of the olive oil out of those fruits.

**Table 1: Installed and Operational Capacity (Year 1)**

Description	Percentage Production	Installed Production Capacity	Operational Capacity Year 1 (75%)
Olive Oil (Liters)		57,600	43,200
Packaging			
0.5 Liter Packing	50%	57,600	43,200
1.0 Liter Packing	40%	23,040	17,280
4.0 Liter Packing	10%	1,440	1,080
<b>Total (Packing)</b>	<b>100%</b>	<b>82,080</b>	<b>61,560</b>

## 6 CRITICAL FACTORS

Following principles need to be pursued for the best extraction of Olive Oil;

- For best quality Olive Oil, fruit should be transported to facility within 24 hours and if extra virgin Olive Oil is to be extracted, the transportation time should be less than 6 hours.
- As this project is designed for future yield of olives and extraction units, the expansion will be done in the years later so future contract with machinery

suppliers, farm owners, should be placed keeping in view the inflationary effect.

- When choosing storage location, remember that heat, air, and light are the adversaries of oil. These elements help create free radicals, which eventually lead to excessive oxidation and rancidity that will develop bad taste in the oil. Even worse, oxidation and free radicals contribute to heart disease and cancer.
- For best flavor, olive oil should be stored in a cool, dark place. Properly stored olive oil can be used for at least two years. It is, however, at its peak within a year of production, and is most flavorful for the first two months.
- Heat, light and air are not good for Olive Oil, hence it is ideal to store Olive Oil in either metal tins or dark colored glass bottles. These steps should be taken to protect the oil from the light in order to preserve the quality. The olive oil should be stored in a cool, dark place at home with the cap tightened when not in use.
- Skill enhancement of the contract farmers, process relevant staff and management should be ensured.
- Effective marketing and distribution of Olive Oil should be ensured keeping in view the international food safety and hygiene standards.

## 7 GEOGRAPHICAL POTENTIAL FOR INVESTMENT

Pothohar is a large plateau region in north-eastern Pakistan covering an area of 8,592 square miles. It has been identified as suitable for olive production because of its favourable climate and ideal topography. The proposed planting area covers 15,100 acres, where 2,038,500 olive saplings will eventually be planted under the five-year project running until 2020<sup>4</sup>.

The Barani Agricultural Research Institute reports that the climate, temperature, soil, average rainfall and other factors in Sialkot, Narowal, Gujrat, Jhelum, Rawalpindi, Islamabad, Attock, Chakwal and Khushab suit olive cultivation. Punjab government has declared the Pothohar region as 'Olive Valley.' It recently distributed olive plants to farmers, and organised training of olive growers in the region. The objective is to increase the domestic production of virgin olive oil and reduce its import, to improve the living and economic standards of farmers and encourage private investment in rural areas, especially in infrastructure.

The proposed units may be installed at any of these areas especially Attock and Chakwal regions near the orchards.

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<sup>4</sup> Olive Oil Times

## 8 POTENTIAL TARGET CUSTOMERS / MARKETS

The targeted customers of these products are food, cocktails / juices, agriculture / animal feed, and various other industries. The main export markets for Pakistani Olive Oil are Afghanistan and other neighbouring countries. However, majority of the produce will be consumed locally because most of the local demand is currently met by the imports.

## 9 PROJECT COST SUMMARY

### 9.1 Project Economics

All the figures in this financial model have been calculated for estimated processing of 43,200 liters of olive oil which will be extracted from 216 tons of fruit in year 1.

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

**Table 2: Project Economics**

Description	Details
Internal Rate of Return (IRR)	26%
Payback Period (Years)	4.65
Net Present Value	Rs. 6,505,468

### 9.2 Project Financing

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

**Table 3: Project Financing**

Description	Details
Total Equity (50%)	Rs. 6,382,984
Bank Loan (50%)	Rs. 6,382,984
Annual Markup to the Borrower– Long Term Loan	14%
Tenure of the Loan (Years)	5
Annual Markup to the Borrower – Short Term Debt	15%

### 9.3 Project Cost

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

**Table 4: Project Cost**

Description	Amount (Rs.)
Land	750,000
Building / Infrastructure	3,766,887
Machinery & Equipment	4,555,625
Furniture & Fixtures	320,000
Office Vehicles	1,239,000
Office Equipment	229,500
Pre-Operating Costs	434,305
<b>Total Capital Costs</b>	<b>11,295,317</b>
<b>Working Capital</b>	
Equipment Spare Part Inventory	25,650
Raw Material Inventory	945,000
Cash	500,000
<b>Total Working Capital</b>	<b>1,470,650</b>
<b>Total Investment</b>	<b>12,765,967</b>

### 9.4 Space Requirement

Approximately, 10 marla of land would be required for establishment of processing facility. It is recommended that required land should be acquired near the Olive orchards. The cost of land is estimated at Rs. 750,000.

The infrastructural requirements of the project mainly comprise the construction of management building, sorting, processing hall, store and other facilities. The cost of construction of building for the proposed unit is provided in the table below:

**Table 5: Space Requirement**

Description	Area (Sq.ft)	Cost (Rs. /Sq. ft.)	Amount (Rs.)
Processing and Packaging Area	800	1,600	1,280,000
Raw Material Store	600	1,300	780,000
Finish Good Store	400	1,500	600,000
Mini Laboratory	200	2,000	400,000

Office	225	1,800	405,000
Boundary Wall (Running Feet)	189	1,600	301,887
<b>Total Infrastructure</b>			<b>3,766,887</b>

## 9.5 Machinery & Equipment Requirement

Plant, machinery and equipment for the processing facility is given in the following table;

**Table 6: Machinery & Equipment Requirement**

Description	Amount (PKR)
Olive Oil Extraction Unit (200 Kgs Processing Capacity Per Hour) including Custom duty, Sales Tax, other taxes, etc.	3,205,625
Port Clearance Charges	50,000
Lifting and Freight Charges to facility	50,000
Other Allied Machinery including Generator, Mini Lab, Packaging Machine and other	1,000,000
Installation Charges (Plant, Utilities, other)	250,000
<b>Total Machinery &amp; Equipment Cost</b>	<b>4,555,625</b>

## 9.6 Furniture & Fixtures Requirement

Detail of the furniture and fixture required for the Processing Facility is given below;

**Table 7: Furniture & Fixture Requirement**

Description	Quantity	Unit Cost (Rs.)	Amount (Rs.)
Furniture	1	160,000	160,000
Air conditioners (1.5 ton Split)	1	60,000	60,000
Other Appliances (Water Dispenser, Fans, etc.)	1	100,000	100,000
<b>Total Furniture &amp; Fixtures</b>			<b>320,000</b>

## 9.7 Office Equipment Requirement

Following office equipment will be required for Head Office and Processing Facilities;

**Table 8: Office Equipment Requirement**

Description	Quantity	Unit Cost (Rs.)	Amount (Rs.)
Laptop	1	80,000	80,000
Computer	3	35,000	105,000
Printer	2	20,000	40,000

Telephones	3	1,500	4,500
<b>Total Office Equipment</b>			<b>229,500</b>

### 9.8 Office Vehicle Requirement

Following office vehicles are required;

**Table 9: Office Vehicle Requirement**

Description	Quantity	Unit Cost (Rs.)	Amount (Rs.)
Delivery Vehicle	1	1,200,000	1,200,000
Registration fee and other		3.25%	39,000
<b>Total Office Vehicle Cost</b>			<b>1,239,000</b>

### 9.9 Human Resource Requirement

To run operations of Olive Oil Extraction Unit smoothly, details of human resources required along with number of employees and monthly salary are recommended as under;

**Table 10: Human Resource Requirement**

Description	No. of Employees	Salary Per Month (PKR)
Owner / Manager	1	40,000
Quality Control Officer	1	30,000
Plant Operator	3	22,000
Marketing and Procurement Manager	1	35,000
Account Officer	1	20,000
Helper	3	15,000
Driver	1	16,000
Guard	2	16,000
<b>Total</b>	<b>13</b>	

Salaries of Processing Facility staff will be raised by 10% each year, Seasonal labor will be hired on daily wages. In year 1, the seasonal labor cost will be around Rs. 162,000.

### 9.10 Utilities and Other Costs

An essential cost to be borne by the project is the cost of electricity. The utility expenses are estimated to be around Rs. 62,333 per month in year 1. Furthermore, promotional expenses are essential for marketing of this unit, and are estimated as 1% of revenue each year.

### 9.11 Revenue Generation

The revenue for the 1<sup>st</sup> year is calculated as under;

**Table 11: Revenue Generation – Year 1**

Product Mix	Percentage Production	Quantity	Sales Price Per Unit (Rs.)	Revenue (Rs.)
0.5 Liter Packing (No)	50%	43,200	375	16,200,000
1.0 Liter Packing (No)	40%	17,280	625	10,800,000
4.0 Liter Packing (No)	10%	1,080	2,050	2,214,000
<b>Total from Olive Oil</b>	<b>100%</b>	<b>61,560</b>		<b>29,214,000</b>
Olive Cake (Kgs)		172,800	10	1,728,000
<b>Total Revenue from Oil and Cake</b>				<b>30,942,000</b>

### 9.12 Raw Material Requirement

Fresh Olives are the main raw material for the proposed facility, which will be procured either directly from the farms or from distributors.

**Table 12: Raw Material Requirement – Year 1**

Description	Quantity (Tons)	Cost Per Ton (Rs.)	Total Cost (Rs.)
Olive Fruit including Freight In	216	100,000	21,600,000
Daily Wages*	216	750	162,000
<b>Total</b>			<b>21,762,000</b>

\* Daily wages are for loading / unloading of olive fruit and olive oil

## 10 USEFUL WEB LINKS

Small & Medium Enterprises Development Authority (SMEDA)	<a href="http://www.smeda.org.pk">www.smeda.org.pk</a>
Government of Pakistan	<a href="http://www.pakistan.gov.pk">www.pakistan.gov.pk</a>
Ministry of Industries & Production	<a href="http://www.moip.gov.pk">www.moip.gov.pk</a>
Government of Punjab	<a href="http://www.punjab.gov.pk">www.punjab.gov.pk</a>
Government of Sindh	<a href="http://www.sindh.gov.pk">www.sindh.gov.pk</a>
Government of Khyber Pakhtunkhwa	<a href="http://www.khyberpakhtunkhwa.gov.pk">www.khyberpakhtunkhwa.gov.pk</a>
Government of Balochistan	<a href="http://www.balochistan.gov.pk">www.balochistan.gov.pk</a>
Government of Gilgit Baltistan	<a href="http://www.gilgitbaltistan.gov.pk">www.gilgitbaltistan.gov.pk</a>
Government of Azad Jamu Kashmir	<a href="http://www.ajk.gov.pk">www.ajk.gov.pk</a>
Trade Development Authority of Pakistan (TDAP)	<a href="http://www.tdap.gov.pk">www.tdap.gov.pk</a>
Securities and Exchange Commission of Pakistan (SECP)	<a href="http://www.secp.gov.pk">www.secp.gov.pk</a>
Federation of Pakistan Chambers of Commerce and Industry (FPCCI)	<a href="http://www.fpcci.com.pk">www.fpcci.com.pk</a>
State Bank of Pakistan (SBP)	<a href="http://www.sbp.org.pk">www.sbp.org.pk</a>
Punjab Small Industries Corporation	<a href="http://www.psic.gop.pk">www.psic.gop.pk</a>
Sindh Small Industries Corporation	<a href="http://www.ssic.gos.pk">www.ssic.gos.pk</a>
Pakistan Horticulture Development and Export Company (PHDEC)	<a href="http://www.phdec.org.pk">www.phdec.org.pk</a>
Punjab Vocational Training Council (PVTC)	<a href="http://www.pvtc.gop.pk">www.pvtc.gop.pk</a>
Technical Education and Vocational Training Authority (TEVTA)	<a href="http://www.tevta.org">www.tevta.org</a>
Punjab Industrial Estates (PIE)	<a href="http://www.pie.com.pk">www.pie.com.pk</a>
Ministry of National Food Security and Research (MNFSR)	<a href="http://www.mnsfr.gov.pk">www.mnsfr.gov.pk</a>
Pakistan Agriculture Research Council (PARC)	<a href="http://www.parc.gov.pk">www.parc.gov.pk</a>
National Agriculture Research Council (NARC)	<a href="http://www.narc.gov.pk">www.narc.gov.pk</a>
Agriculture University of Faisalabad (UAF)	<a href="http://www.uaf.edu.pk">www.uaf.edu.pk</a>
Agriculture Marketing Information Service	<a href="http://www.amis.pk">www.amis.pk</a>
Barani Agricultural Research Institute (BARI), Chakwal	<a href="http://barichakwal.org">barichakwal.org</a>



## 11 ANNEXURES

### 11.1 Income Statement

Calculations										SMEDA
Income Statement										
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Revenue	30,942,000	36,305,280	42,431,796	49,420,562	57,382,764	66,443,201	73,087,521	80,396,273	88,435,900	97,279,490
<i>Cost of sales</i>										
Raw Material Cost - Olive Fruit	21,600,000	25,344,000	29,620,800	34,499,520	40,057,776	46,382,688	51,020,957	56,123,052	61,735,358	67,908,894
Packing Cost Per Liter (Colored Glass Bottles)	1,080,000	1,267,200	1,481,040	1,724,976	2,002,889	2,319,134	2,551,048	2,806,153	3,086,768	3,395,445
Operation costs 1 (direct labor)	1,692,000	1,861,200	2,047,320	2,252,052	2,477,257	2,724,983	2,997,481	3,297,229	3,626,952	3,989,647
Operating costs 2 (machinery maintenance)	615,600	689,472	769,192	855,161	947,803	1,047,572	1,099,951	1,154,948	1,212,695	1,273,330
Operating costs 3 (direct electricity)	252,247	295,970	345,915	402,889	467,799	541,662	595,829	655,412	720,953	793,048
Operating costs 4 (direct water)	112,500	132,000	154,275	179,685	208,634	241,577	265,734	292,308	321,538	353,692
Daily Wage Cost	162,000	190,080	222,156	258,746	300,433	347,870	382,657	420,923	463,015	509,317
<b>Total cost of sales</b>	<b>25,514,347</b>	<b>29,779,922</b>	<b>34,640,698</b>	<b>40,173,030</b>	<b>46,462,592</b>	<b>53,605,486</b>	<b>58,913,656</b>	<b>64,750,025</b>	<b>71,167,280</b>	<b>78,223,373</b>
Gross Profit	5,427,653	6,525,358	7,791,098	9,247,533	10,920,172	12,837,714	14,173,864	15,646,248	17,268,620	19,056,117
<i>General administration &amp; selling expenses</i>										
Administration expense	1,716,000	1,887,600	2,076,360	2,283,996	2,512,396	2,763,635	3,039,999	3,343,999	3,678,398	4,046,238
Administration benefits expense	85,800	94,380	103,818	114,200	125,620	138,182	152,000	167,200	183,920	202,312
Electricity expense	495,750	545,325	599,857	659,843	725,827	798,410	878,251	966,076	1,062,683	1,168,952
Travelling expense	85,800	94,380	103,818	114,200	125,620	138,182	152,000	167,200	183,920	202,312
Communications expense (phone, fax, mail, internet, etc.)	85,800	94,380	103,818	114,200	125,620	138,182	152,000	167,200	183,920	202,312
Office vehicles running expense	309,750	340,725	374,798	412,277	453,505	498,855	548,741	603,615	663,977	730,374
Office expenses (stationary, entertainment, janitorial services, etc.)	85,800	94,380	103,818	114,200	125,620	138,182	152,000	167,200	183,920	202,312
Promotional expense	309,420	363,053	424,318	494,206	573,828	664,432	730,875	803,963	884,359	972,795
Professional fees (legal, audit, consultants, etc.)	154,710	181,526	212,159	247,103	286,914	332,216	365,438	401,981	442,179	486,397
Depreciation expense	822,757	822,757	822,757	822,757	822,757	822,757	822,757	822,757	822,757	822,757
Amortization of pre-operating costs	86,861	86,861	86,861	86,861	86,861	-	-	-	-	-
Subtotal	4,238,447	4,605,367	5,012,381	5,463,841	5,964,566	6,433,032	6,994,060	7,611,190	8,290,033	9,036,761
<b>Operating Income</b>	<b>1,189,205</b>	<b>1,919,991</b>	<b>2,778,716</b>	<b>3,783,691</b>	<b>4,955,606</b>	<b>6,404,682</b>	<b>7,179,804</b>	<b>8,035,058</b>	<b>8,978,587</b>	<b>10,019,356</b>
Gain / (loss) on sale of office vehicles	-	-	-	-	-	-	-	-	-	-
<b>Earnings Before Interest &amp; Taxes</b>	<b>1,189,205</b>	<b>1,919,991</b>	<b>2,778,716</b>	<b>3,783,691</b>	<b>4,955,606</b>	<b>6,404,682</b>	<b>7,179,804</b>	<b>8,035,058</b>	<b>8,978,587</b>	<b>10,019,356</b>
Interest on short term debt	51,792	51,792	-	-	-	-	-	-	-	-
Interest expense on long term debt (Project Loan)	790,672	671,057	534,695	379,242	202,026	-	-	-	-	-
Interest expense on long term debt (Working Capital Loan)	56,948	-	-	-	-	-	-	-	-	-
Subtotal	899,412	722,849	534,695	379,242	202,026	-	-	-	-	-
<b>Earnings Before Tax</b>	<b>289,793</b>	<b>1,197,142</b>	<b>2,244,022</b>	<b>3,404,449</b>	<b>4,753,580</b>	<b>6,404,682</b>	<b>7,179,804</b>	<b>8,035,058</b>	<b>8,978,587</b>	<b>10,019,356</b>
Tax	-	102,071	296,304	573,612	948,574	1,464,138	1,735,431	2,034,770	2,365,005	2,729,274
<b>NET PROFIT/(LOSS) AFTER TAX</b>	<b>289,793</b>	<b>1,095,071</b>	<b>1,947,718</b>	<b>2,830,837</b>	<b>3,805,006</b>	<b>4,940,544</b>	<b>5,444,374</b>	<b>6,000,288</b>	<b>6,613,582</b>	<b>7,290,082</b>

## 11.2 Balance Sheet

Calculations											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
<b>Assets</b>											
<i>Current assets</i>											
Cash & Bank	500,000	-	247,577	1,600,227	3,606,309	6,321,798	11,565,909	17,160,909	23,357,503	30,077,471	42,339,983
Accounts receivable		2,543,178	2,763,587	3,235,770	3,774,754	4,389,178	5,088,738	5,734,139	6,307,553	6,938,308	7,632,139
Equipment spare part inventory	25,650	30,164	35,335	41,248	48,003	55,708	61,418	67,714	74,654	82,306	-
Raw material inventory	945,000	1,164,240	1,428,741	1,747,266	2,130,208	2,589,885	2,991,317	3,454,971	3,990,492	4,609,018	-
<b>Total Current Assets</b>	<b>1,470,650</b>	<b>3,737,582</b>	<b>4,475,239</b>	<b>6,624,511</b>	<b>9,559,274</b>	<b>13,356,569</b>	<b>19,707,382</b>	<b>26,417,733</b>	<b>33,730,202</b>	<b>41,707,104</b>	<b>49,972,123</b>
<i>Fixed assets</i>											
Land	750,000	750,000	750,000	750,000	750,000	750,000	750,000	750,000	750,000	750,000	750,000
Building/Infrastructure	3,766,887	3,578,543	3,390,199	3,201,854	3,013,510	2,825,166	2,636,821	2,448,477	2,260,132	2,071,788	1,883,444
Machinery & equipment	4,555,625	4,100,063	3,644,500	3,188,938	2,733,375	2,277,813	1,822,250	1,366,688	911,125	455,563	-
Furniture & fixtures	320,000	288,000	256,000	224,000	192,000	160,000	128,000	96,000	64,000	32,000	-
Office vehicles	1,239,000	1,115,100	991,200	867,300	743,400	619,500	495,600	371,700	247,800	123,900	-
Office equipment	229,500	206,550	183,600	160,650	137,700	114,750	91,800	68,850	45,900	22,950	-
<b>Total Fixed Assets</b>	<b>10,861,012</b>	<b>10,038,256</b>	<b>9,215,499</b>	<b>8,392,742</b>	<b>7,569,985</b>	<b>6,747,228</b>	<b>5,924,471</b>	<b>5,101,714</b>	<b>4,278,957</b>	<b>3,456,201</b>	<b>2,633,444</b>
<i>Intangible assets</i>											
Pre-operation costs	434,305	347,444	260,583	173,722	86,861	-	-	-	-	-	-
<b>Total Intangible Assets</b>	<b>434,305</b>	<b>347,444</b>	<b>260,583</b>	<b>173,722</b>	<b>86,861</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>TOTAL ASSETS</b>	<b>12,765,967</b>	<b>14,123,282</b>	<b>13,951,321</b>	<b>15,190,975</b>	<b>17,216,120</b>	<b>20,103,797</b>	<b>25,631,853</b>	<b>31,519,447</b>	<b>38,009,159</b>	<b>45,163,304</b>	<b>52,605,566</b>
<b>Liabilities &amp; Shareholders' Equity</b>											
<i>Current liabilities</i>											
Accounts payable		2,012,877	2,364,226	2,766,538	3,226,674	3,752,389	4,339,901	4,783,121	5,272,545	5,813,108	5,965,288
Short term debt	-	644,367	-	-	-	-	-	-	-	-	-
<b>Total Current Liabilities</b>	<b>-</b>	<b>2,657,245</b>	<b>2,364,226</b>	<b>2,766,538</b>	<b>3,226,674</b>	<b>3,752,389</b>	<b>4,339,901</b>	<b>4,783,121</b>	<b>5,272,545</b>	<b>5,813,108</b>	<b>5,965,288</b>
<i>Other liabilities</i>											
Long term debt (Project Loan)	5,647,659	4,793,261	3,819,247	2,708,872	1,443,044	-	-	-	-	-	-
Long term debt (Working Capital Loan)	735,325	-	-	-	-	-	-	-	-	-	-
<b>Total Long Term Liabilities</b>	<b>6,382,984</b>	<b>4,793,261</b>	<b>3,819,247</b>	<b>2,708,872</b>	<b>1,443,044</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
<i>Shareholders' equity</i>											
Paid-up capital	6,382,984	6,382,984	6,382,984	6,382,984	6,382,984	6,382,984	6,382,984	6,382,984	6,382,984	6,382,984	6,382,984
Retained earnings		289,793	1,384,864	3,332,582	6,163,419	9,968,425	14,908,969	20,353,342	26,353,631	32,967,213	40,257,295
<b>Total Equity</b>	<b>6,382,984</b>	<b>6,672,777</b>	<b>7,767,848</b>	<b>9,715,565</b>	<b>12,546,402</b>	<b>16,351,408</b>	<b>21,291,952</b>	<b>26,736,326</b>	<b>32,736,614</b>	<b>39,350,196</b>	<b>46,640,279</b>
<b>TOTAL CAPITAL AND LIABILITIES</b>	<b>12,765,967</b>	<b>14,123,282</b>	<b>13,951,321</b>	<b>15,190,975</b>	<b>17,216,120</b>	<b>20,103,797</b>	<b>25,631,853</b>	<b>31,519,447</b>	<b>38,009,159</b>	<b>45,163,304</b>	<b>52,605,566</b>

### 11.3 Cash Flow Statement

Calculations											SMEDA
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		289,793	1,095,071	1,947,718	2,830,837	3,805,006	4,940,544	5,444,374	6,000,288	6,613,582	7,290,082
Add: depreciation expense		822,757	822,757	822,757	822,757	822,757	822,757	822,757	822,757	822,757	822,757
amortization of pre-operating costs		86,861	86,861	86,861	86,861	86,861	-	-	-	-	-
Accounts receivable		(2,543,178)	(220,409)	(472,183)	(538,984)	(614,423)	(699,560)	(645,401)	(573,414)	(630,755)	(693,831)
Equipment inventory	(25,650)	(4,514)	(5,170)	(5,913)	(6,754)	(7,706)	(5,710)	(6,295)	(6,941)	(7,652)	82,306
Raw material inventory	(945,000)	(219,240)	(264,501)	(318,525)	(382,942)	(459,677)	(401,432)	(463,654)	(535,521)	(618,526)	4,609,018
Accounts payable		2,012,877	351,349	402,312	460,136	525,715	587,512	443,220	489,424	540,563	152,180
Cash provided by operations	(970,650)	445,355	1,865,958	2,463,026	3,271,910	4,158,533	5,244,111	5,595,000	6,196,594	6,719,968	12,262,512
<i>Financing activities</i>											
Project Loan - principal repayment		(854,398)	(974,014)	(1,110,375)	(1,265,828)	(1,443,044)	-	-	-	-	-
Short term debt principal repayment		-	(644,367)	-	-	-	-	-	-	-	-
Additions to Project Loan	5,647,659	-	-	-	-	-	-	-	-	-	-
Additions to Working Capital Loan	735,325	-	-	-	-	-	-	-	-	-	-
Issuance of shares	6,382,984	-	-	-	-	-	-	-	-	-	-
Purchase of (treasury) shares											
Cash provided by / (used for) financing activities	12,765,967	(1,589,723)	(1,618,381)	(1,110,375)	(1,265,828)	(1,443,044)	-	-	-	-	-
<i>Investing activities</i>											
Capital expenditure	(11,295,317)	-	-	-	-	-	-	-	-	-	-
Acquisitions											
Cash (used for) / provided by investing activities	(11,295,317)	-	-	-	-	-	-	-	-	-	-
<b>NET CASH</b>	<b>500,000</b>	<b>(1,144,367)</b>	<b>247,577</b>	<b>1,352,650</b>	<b>2,006,082</b>	<b>2,715,489</b>	<b>5,244,111</b>	<b>5,595,000</b>	<b>6,196,594</b>	<b>6,719,968</b>	<b>12,262,512</b>

## 12 KEY ASSUMPTIONS

### 12.1 Operating Cost Assumptions

Description	Details
Administration Benefit Expenses	5% of admin. expense
Traveling Expenses	5% of admin. expense
Communication Expenses	5% of admin. expense
Office expenses (stationery, entertainment, janitorial services, etc.)	5% of admin. expense
Promotional expense	1% of revenue
Office Vehicle Running Expenses	25% of the Vehicle Cost
Professional fee (Legal, Audit, etc.)	0.5% of revenue
Operating costs growth rate	5%
Depreciation on Building and Infrastructure	5%
Depreciation on Machinery	10%
Depreciation on Furniture and Fixture	10%
Depreciation on Office Equipment	10%
Depreciation on Office Vehicle	10%

### 12.2 Production Cost Assumptions

Description	Detail
Olive Fruit Per Ton including Freight in	Rs. 100,000
Packaging Cost (Per Unit)	
0.5 Liter Packing	Rs. 12.5
1.0 Liter Packing	Rs. 25
4.0 Liter Packing	Rs. 100
Daily / Seasonal Wages Per Ton	Rs. 750
Production Cost Growth Rate	5%

### 12.3 Revenue Assumptions

Description	Detail
0.5 Liter Packing	Rs. 375
1.0 Liter Packing	Rs. 625
4.0 Liter Packing	Rs. 2,050
Growth in Sales Price	10%
Days Operational / Year for Office	300

Days Operational / Year for Processing Facilities	60
Hours Operational / Day for Processing Facility	24
Operational Hours of the Season for Processing Facility	1,440

#### 12.4 Cash Flow Assumptions

Description	Detail
Accounts receivable cycle (in days)	30
Accounts payable cycle (in days)	30
Raw material inventory (in days)	15