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# Pre-Feasibility Study

## VEGETABLES DEHYDRATION UNIT



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**Ministry of Industries & Production**

**Government of Pakistan**

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## TABLE OF CONTENTS

<b>1</b>	<b>DISCLAIMER</b> .....	<b>2</b>
<b>2</b>	<b>EXECUTIVE SUMMARY</b> .....	<b>3</b>
<b>3</b>	<b>INTRODUCTION TO SMEDA</b> .....	<b>3</b>
<b>4</b>	<b>PURPOSE OF THE DOCUMENT</b> .....	<b>4</b>
<b>5</b>	<b>BRIEF DESCRIPTION OF PROJECT &amp; PRODUCT</b> .....	<b>4</b>
5.1	Production Process Flow .....	5
5.2	Product Mix.....	6
5.3	Installed and Operational Capacities .....	6
<b>6</b>	<b>CRITICAL FACTORS</b> .....	<b>7</b>
<b>7</b>	<b>GEOGRAPHICAL POTENTIAL FOR INVESTMENT</b> .....	<b>7</b>
<b>8</b>	<b>POTENTIAL TARGET CUSTOMERS / MARKETS</b> .....	<b>7</b>
<b>9</b>	<b>PROJECT COST SUMMARY</b> .....	<b>8</b>
9.1	Project Economics .....	8
9.2	Project Cost.....	9
9.3	Space Requirement.....	10
9.4	Machinery & Equipment Requirement .....	11
9.5	Furniture & Fixtures Requirement.....	11
9.6	Office Equipment Requirement.....	12
9.7	Office Vehicle .....	12
9.8	Raw Material Requirements .....	12
9.9	Human Resource Requirement .....	13
9.10	Utilities and Other Costs .....	14
9.11	Revenue Generation.....	14
<b>10</b>	<b>CONTACT DETAILS</b> .....	<b>14</b>
<b>11</b>	<b>USEFUL WEB LINKS</b> .....	<b>15</b>
<b>12</b>	<b>ANNEXURES</b> .....	<b>16</b>
12.1	Income Statement.....	16
12.2	Balance Sheet .....	17
12.3	Cash Flow Statement .....	18
<b>13</b>	<b>KEY ASSUMPTIONS</b> .....	<b>19</b>
13.1	Operating Cost Assumptions .....	19
13.2	Production Cost Assumptions.....	19
13.3	Revenue Assumptions.....	20

## 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

Dehydration is a process by which shelf life of the vegetables or fruits can be extended by evaporating water while preserving the taste. The dehydration of fresh vegetables on commercial basis is gaining popularity among the investors in Pakistan. The proposed unit is a medium sized 'Vegetables Dehydration Unit', which entails to produce dehydrated Potatoes, Onions and Garlic. Under the proposed project, fresh potatoes, onions and garlic will be purchased from the local market and after dehydration will be sold as dried vegetables to food manufacturers, super stores and traders. The selected vegetables have significant demand and potential in the local market. However, other vegetables or fruits can also be dehydrated on order to order basis. This business venture can be started in urban cities of Pakistan.

According to the estimates of this pre-feasibility, the proposed Vegetables Dehydration Unit will have a maximum capacity of processing 240,000 kgs (60,000 kg Potato, 120,000 kg Onions and 60,000 kg Garlic) of fresh vegetables per annum. The processing of 240,000 kgs of vegetable will produce 38,340 kg (10,800 kg Potato, 12,240 kg Onion and 15,300 kg Garlic) of dehydrated vegetable annually on 10 hours single shift and 300 operational days basis. The dehydrated vegetables will be packed in one kg. bags of plastic for further storage and distribution. The initial operational capacity is assumed at 60%, whereas maximum operational capacity utilization is assumed as 90%. This production capacity is estimated to be economically viable and justifies the capital as well as operational costs of the project. However, complete adherence to best agronomic practices is critical to the success of this project. Therefore, technical knowledge & experience of the entrepreneur is absolutely necessary.

The total project cost for setting up the proposed unit is estimated at Rs. 9.046 million out of which Rs. 8.467 million is capital cost and Rs. 0.579 million is working capital. Considering all the assumptions on which the pre-feasibility has been made, the project generates an IRR, Payback and Net Present Value of 33%, 3.47 years and Rs. 7.757 million respectively as an equity financed business. The project will provide employment opportunities to 16 people including the Owner. The legal business status of this project is assumed to be 'Sole Proprietorship'.

## 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 "**Vegetables Dehydration 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, which form basis of any Investment Decision.

#### **5 BRIEF DESCRIPTION OF PROJECT & PRODUCT**

The process of removal or reduce the moisture from the fruit or vegetable in order to preserve the product for prolonged storage is called 'Dehydration'. Through dehydration the moisture level of any vegetable or fruit can be limited to a level where micro-organism may not be able to grow and spoil it. Reduction of the moisture content results in preservation of quality characteristics such as flavour and nutritive value. Another objective of dehydration is the significant reduction in volume, which promotes efficiency in both transportation and storage of the food

products. The dehydrated vegetables are used as an instant vegetable as well as to make noodles, soups, snacks and fast foods.

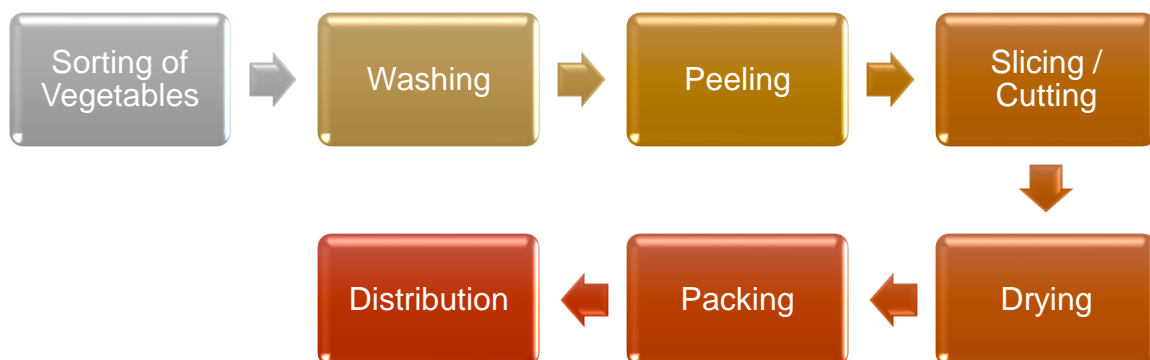
This particular pre-feasibility is about establishing a vegetable dehydration unit for Potato, Onion and Garlic. According to the proposed business model, fresh vegetables will be purchased from local markets or directly from farmers. After processing dehydrated vegetables are sold to super stores and local retails chains. The processing of the selected vegetables will be based on the seasonal availability. The proposed unit will be equipped with locally manufactured dehydration machines, mainly, Washer, Peeler, Slicer and Dryers. Heat and Dry Air will be used for dehydration of the vegetables. The Dryers are the main component of production process. The unit will comprises of 8 Dryers, with each having a capacity of drying 50 kg of vegetables in 5 hours. Around two batches of dried vegetables per dryer will be produced per day. After dehydration the vegetables will be packed in plastic bags for further storage and distribution.

Financial analysis shows the unit shall be profitable from the very first year of operation. The ideal location for the proposed project is any major industrial city across Pakistan, however, it can also be established in other areas with availability of required infrastructural support, skilled labour and easy access to markets. The legal business status of this project is assumed to be 'Sole Proprietorship.

### 5.1 Production Process Flow

The major activities involved in production processes includes, Vegetable Sorting, Washing, Peeling, Drying and Packing. Production process flow of the proposed vegetable dehydration is exhibited in the below diagram.

**Figure 1: Production Process Flow**



## 5.2 Product Mix

The proposed product mix mainly comprises of dehydrated Potato, Onion and Garlic. This product mix is selected due to high demand and market potential. However, other vegetables or fruits can also be dehydrated on order basis. Details of product mix is provided in the below table.

**Table 1: Product Mix**

Commodity	Percent of Total Production	Processing Days
Potato	28%	75
Onion	32%	150
Garlic	40%	75

## 5.3 Installed and Operational Capacities

The installed and operational capacity of the Vegetables Dehydration unit mainly depends upon the installed machinery.

This pre-feasibility study is based on 08 dryer machines that can dehydrate 240,000 kgs of fresh vegetables (50 kg in 5 hours at 1 dryer) per annum on 10 hours single shift basis. The unit is assumed to operate 300 days per annum. The dehydration of 240,000 kgs of vegetable will produce 38,340 kgs of dried vegetable as finished goods. The initial operational capacity of the project will be 60% with an annual growth of 5%. Maximum capacity utilization of the project is assumed at 90%.

Product mix wise installed and operational capacity is provide in the table below.

**Table 2: Installed and Operational Capacity**

Commodity	Total Processing Capacity of Fresh Vegetables (Kgs)	Total Capacity Finished Goods (Dehydrated Vegetables, Kgs)	Operational capacity Finished Goods Year 1, 60% (Kgs)	Maximum Operational Capacity Finished Goods 90% (Kgs)
Potato	60,000	10,800	6,480	9,720
Onion	120,000	12,240	7,344	11,016
Garlic	60,000	15,300	9,180	13,770

<b>Total</b>	<b>240,000</b>	<b>38,340</b>	<b>23,004</b>	<b>34,506</b>
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## 6 CRITICAL FACTORS

Following are the factors critical for the success of this business venture.

- ⇒ Complete adherence to best agronomic practices is critical to the success of this project; therefore, technical knowledge & experience of the entrepreneur in the field of horticulture and in fruit and vegetable processing business is absolutely necessary.
- ⇒ Selection of good quality and fresh vegetables; cost efficiency through better management.
- ⇒ Appropriate arrangements for transportation of fresh vegetables to the processing facility.
- ⇒ Good storage arrangement and internal controls for processed vegetables; arrangements for transportation of processed product to local markets.
- ⇒ Properly trained staff should be engaged and comprehensive staff training programs to be adopted for capacity building.
- ⇒ Careful selection of good location and purchase of land at competitive price.
- ⇒ Effective marketing and distribution of the product particularly to the super stores and retail chains.

## 7 GEOGRAPHICAL POTENTIAL FOR INVESTMENT

As per the current agricultural practices, the suggested vegetable for this unit i.e. Potato, Onion and Garlic, are predominantly produced in Punjab and Sindh. Therefore, it is recommended that the project may be preferably located in the vicinity of areas of Punjab and Sindh for easy access and availability of the proposed as well as other vegetables. Following areas could be the most appropriate locations for the proposed unit. Okara, Sahiwal, Multan, Lahore, Rahim Yar Khan, Sargodha, Khairpur, Sakhar, Mirpur Khas, Karachi, Ghotki and etc.

## 8 POTENTIAL TARGET CUSTOMERS / MARKETS.

The dehydrated vegetables are widely used as instant vegetable as well as in manufacturing of different processed food items. Therefore, the potential target customers for the dehydrated vegetables are the food manufacturing industry, bakery and confectionary, super stores, traders and exporters.



As majority of the target customer belongs to business segments, therefore, the business clients operating in major big cities, such as Lahore, Karachi, Peshawar, Faisalabad, Sialkot, Rawalpindi, Islamabad, Multan and Hyderabad will be key potential markets for the proposed venture.

## 9 PROJECT COST SUMMARY

A detailed financial model has been developed to analyze the commercial viability of Vegetables Dehydration Unit. Various cost and revenue related assumptions along with results of the analysis are outlined in this section.

The projected Income Statement, Cash Flow Statement and Balance Sheet are attached as annexures.

### 9.1 Project Economics

A detailed financial model has been developed to analyse the commercial viability of 'Vegetables Dehydration Unit'. Various cost and revenue related assumptions along with results of the analysis are outlined in this section.

The projected Income Statement, Balance Sheet and Cash Flow Statement are also attached as annexure.

In order to financially appraise the project, a 100% Equity Based Business Model has been assumed. The following tables show Internal Rate of Return, Payback Period Net Present Value and Breakeven of the proposed venture:

**Table 3: Project Economics**

Description	Details
Internal Rate of Return (IRR)	33%
Payback Period (Yrs.)	3.47
Net Present Value (Rs.)	7,757,419

Calculation of break-even analysis is as follows.

**Table 4: Breakeven (100% Equity Based)**

Break-Even Analysis	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Break Even Revenue	18,288,321	19,919,925	21,714,181	23,718,378	25,920,925	29,109,105	31,825,221	34,773,205	38,044,464	41,694,506
Break-Even Units	19,529	19,338	19,163	19,029	18,906	19,301	19,183	19,055	18,952	18,882

Margin of Safety	13%	20%	25%	29%	32%	33%	36%	35%	34%	33%
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However, for the purposes of further explanation the Project Economics based on Debt:Equity (i.e. 50:50) Model has also been computed. On the basis of Debt:Equity model the Internal Rate of Return, Payback Period and Net Present Value of the proposed project are provide in the table below.

**Table 5: Project Economics Based on Debt (50%):Equity (50%)**

Description	Details
Internal Rate of Return (IRR)	32%
Payback Period (Yrs.)	3.58
Net Present Value (Rs.)	11,681,559

The financial assumptions for Debt:Equity are as follows:

**Table 6: Financial Assumptions for Debt:Equity Model**

Description	Details
Debt (50%)	4,523,233
Equity (50%)	4,523,233
Interest Rate on Debt	12%
Debt Tenure	5
Debt Payment / Year	2

The projected Income Statement, Cash Flow Statement and Balance Sheet enclosed as annexures are based on 100% Equity Based Business Model.

## 9.2 Project Cost

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

**Table 7: Project Cost**

Description	Amount Rs.
<b>Capital Cost</b>	
Machinery & Equipment	3,531,800

Office Vehicles	2,511,773
Furniture & Fixtures	1,751,500
Pre-operating Costs	140,000
Office Equipment	322,200
Building Security	210,000
<b>Total Capital Cost</b>	<b>8,467,273</b>
Raw material inventory	103,547
Cash	265,647
Upfront building rent	210,000
<b>Total Working Capital</b>	<b>579,193</b>
<b>Total Project Cost</b>	<b>9,046,466</b>

### 9.3 Space Requirement

Approximately 1 kanal (4,500 sq. ft.) of land would be required for establishment of proposed unit, it is recommended that required land should be acquired on rental basis in the nearby areas of identified potential cities and urban centers. The estimated monthly rent of the purpose-built building is assumed as Rs. 70,000 per month. The infrastructural requirement is estimated considering various facilities including management office, weighing station, raw material store, production area, and store - finished goods, etc. Details of space requirement are as follows.

**Table 8: Space Requirements**

Description	Estimated Area (Sqft)
Raw Material Store	700
Selection / Grading / Cutting	400
Production Area	900
Packing Room	360
Store - Finished Goods	360
Management Building	400
Kitchen	64

Pavement/driveway	625
Washrooms	108
Open Space	583
<b>Total</b>	<b>4,500</b>

#### 9.4 Machinery & Equipment Requirement

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

**Table 9: Machinery & Equipment**

Description	Quantity	Unit Cost (Rs.)	Total Cost (Rs.)
Dryer Machine	8	275,000	2,200,000
Generator	1	980,000	980,000
Slicer	1	110,000	110,000
Peeler And Washer	1	75,000	75,000
Weighing Machine	1	13,000	13,000
Weighing Machine (Packing)	1	3,800	3,800
Misc. Laboratory Equipment	1	150,000	150,000
<b>Total</b>			<b>3,531,800</b>

#### 9.5 Furniture & Fixtures Requirement

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

**Table 10: Furniture & Fixture**

Description	Quantity	Unit Cost (Rs.)	Total Cost (Rs.)
Furniture	1	1,200,000	1,200,000
Renovation & Fixtures	1	450,000	450,000
Air conditioners (2 ton split)	1	101,500	101,500
<b>Total</b>			<b>1,751,500</b>

## 9.6 Office Equipment Requirement

Following office equipment will be required for the project are given below.

**Table 11: Office Equipment**

Description	Quantity	Unit Cost (Rs.)	Total Cost (Rs.)
Industrial Fans	2	35,000	70,000
Fridge	1	51,500	51,500
Computer	1	23,000	23,000
LED TVs	1	33,200	33,200
Ceiling/Bracket Fans	7	3,800	26,600
Water Dispenser	1	19,000	19,000
LED Lights	28	350	9,800
Exhaust Fans	3	2,200	6,600
Computers	2	25,000	50,000
Computer printer (s)	1	29,500	29,500
Telephones	2	1,500	3,000
<b>Total</b>			<b>322,200</b>

## 9.7 Office Vehicle

Following office vehicle will be required for the project are given below.

**Table 12: Office Vehicle**

Description	Quantity	Unit Cost (Rs.)	Total Cost (Rs.)
Mini Truck	1	2,511,773	2,511,773
<b>Total</b>			<b>2,511,773</b>

## 9.8 Raw Material Requirements

Fresh vegetables including potatoes, onions and garlic are the main raw material for the proposed business, which will be procurement either directly form the farms or from distributors or local vegetable markets. Following table provides the details of annual requirements of fresh vegetables as raw material.

**Table 13: Raw Material Requirements**

Description	Input Requirement at 100% Capacity (Kgs.)	Requirements for Year 1 at 60% Capacity (Kgs)*	Average Cost Per kgs (Rs.)	Total Cost (Rs.)
Potatoes	60,000	35,300	30	1,059,000
Onions	120,000	70,600	36	2,541,600
Garlic	60,000	35,300	250	8,825,000
<b>Total</b>				<b>12,425,600</b>

\* Excluding 7 days Finished Goods Inventory.

### 9.9 Human Resource Requirement

In order to run operations of dehydration plant smoothly, details of human resources required along with number of employees and monthly salaries are recommended as under.

**Table 14: Human Resource Requirement**

Description	No. of Employees	Monthly Salary per person (Rs.)
Owner/Manager	1	50,000
Accounts Officer	1	28,000
Packing workers	2	20,000
Mechanic-cum electrician	1	28,000
Plant Operator	1	28,000
Helpers	4	20,000
Security Guard	2	20,000
Sweepers	1	17,500
Driver	1	20,000
Purchase Officer	1	40,000
Laboratory Technician	1	30,000

<b>Total</b>	<b>16</b>	
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### 9.10 Utilities and Other Costs

An essential cost to be borne by the project is the cost of electricity and gas. The electricity and gas expenses are estimated to be around Rs. 54,074 (Direct & indirect) per month. Furthermore, promotional expense being essential for marketing of Dehydration Plant is estimated as 0.2% of revenue.

### 9.11 Revenue Generation

Based on the capacity utilization of 60%, sales revenue during the first year of operations is provided in the table below.

**Table 15: Revenue Generation – Year 1**

Description	Dried Vegetables Available for Sale Year 1 (Kgs)	Finish Good Inventory. (Kgs)	Weighted Average Sale Price/Kg. (Rs.)	Sales Revenue (Rs.)
Potato	6,354	126	283	1,800,324
Onion	7,201	143	600	4,320,496
Garlic	9,002	178	1,667	15,002,700
<b>Total Revenue</b>	<b>23,004</b>	<b>447</b>		<b>21,123,520</b>

## 10 CONTACT DETAILS

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

**Table 16: Machinery Suppliers**

Name of Supplier	Address	Phone
Rasheed Engineering	Factory Area, Faisalabad, Punjab	+92 300-8656451
The Generator Store (Umer Khalid Rao)	Sharif Garden Lahore, Punjab	0332-8738290

## 11 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 Baluchistan	<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 Jammu 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>
Security 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>
Punjab Vocational Training Council (PVTC)	<a href="http://www.pvtc.gop.pk">www.pvtc.gop.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>
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>
Ayub Agricultural Research Institute (AARI),	<a href="http://www.aari.punjab.gov.pk">www.aari.punjab.gov.pk</a>



## 12 ANNEXURES

### 12.1 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	21,123,520	25,050,395	29,003,753	33,409,206	38,312,330	43,762,997	49,815,757	53,609,850	57,630,589	61,952,883	
<i>Cost of sales</i>											
Raw Material Cost	12,425,600	14,735,527	17,061,031	19,652,474	22,536,665	25,742,939	29,303,386	31,535,206	33,900,347	36,442,872	
Direct labour	1,242,560	1,507,821	1,786,379	2,105,571	2,470,737	2,887,881	3,363,746	3,704,121	4,074,534	4,481,987	
Machinery maintenance	45,113	52,256	56,282	60,307	64,333	68,359	72,384	72,463	72,463	72,463	
Direct electricity	504,790	612,552	725,717	855,388	1,003,737	1,173,202	1,366,522	1,504,799	1,655,279	1,820,807	
Direct gas	27,745	32,137	36,344	40,891	45,801	51,101	56,815	59,721	62,707	65,842	
Total cost of sales	14,245,808	16,940,294	19,665,753	22,714,631	26,121,273	29,923,481	34,162,853	36,876,310	39,765,329	42,883,971	
Gross Profit	6,877,712	8,110,102	9,338,000	10,694,575	12,191,057	13,839,516	15,652,903	16,733,540	17,865,260	19,068,912	
<i>General administration &amp; selling expenses</i>											
Administration expense	2,706,000	2,976,600	3,274,260	3,601,686	3,961,855	4,358,040	4,793,844	5,273,228	5,800,551	6,380,606	
Building rental expense	840,000	924,000	1,016,400	1,118,040	1,229,844	1,352,828	1,488,111	1,636,922	1,800,615	1,980,676	
Electricity expense	116,354	127,990	140,789	154,868	170,354	187,390	206,129	226,742	249,416	274,358	
Water expense	81,180	89,298	98,228	108,051	118,856	130,741	143,815	158,197	174,017	191,418	
Travelling expense	405,900	446,490	491,139	540,253	594,278	653,706	719,077	790,984	870,083	957,091	
Communications expense (phone, fax, mail, internet, etc.)	135,300	148,830	163,713	180,084	198,093	217,902	239,692	263,661	290,028	319,030	
Office vehicles running expense	200,942	221,036	243,140	267,454	294,199	323,619	355,981	391,579	430,737	473,810	
Office expenses (stationary, entertainment, janitorial services, etc)	108,240	119,064	130,970	144,067	158,474	174,322	191,754	210,929	232,022	255,224	
Promotional expense Year 1-5	42,247	50,101	58,008	66,818	76,625	-	-	-	-	-	
Promotional expense Year 6-10	-	-	-	-	-	43,763	49,816	53,610	57,631	61,953	
Professional fees (legal, audit, consultants, etc.)	52,809	62,626	72,509	83,523	95,781	109,407	124,539	134,025	144,076	154,882	
Depreciation expense	1,081,190	1,081,190	1,081,190	1,086,120	1,085,325	1,392,017	1,397,725	1,396,805	1,396,805	1,403,412	
Amortization of pre-operating costs	28,000	28,000	28,000	28,000	28,000	-	-	-	-	-	
Bad debt expense	21,124	25,050	29,004	33,409	38,312	43,763	49,816	53,610	57,631	61,953	
Miscellaneous expense 1	135,300	148,830	163,713	180,084	198,093	217,902	239,692	263,661	290,028	319,030	
Subtotal	5,954,585	6,449,105	6,991,062	7,592,457	8,248,088	9,205,401	9,999,991	10,853,953	11,793,637	12,833,444	
Operating Income	923,127	1,660,997	2,346,938	3,102,117	3,942,969	4,634,115	5,652,913	5,879,587	6,071,623	6,235,468	
Other income (interest on cash)	25,400	77,115	148,919	235,706	297,860	377,044	517,972	672,946	833,320	1,013,329	
Other income 2	-	-	-	-	-	-	-	-	-	-	
Gain / (loss) on sale of computer equipment	-	-	19,875	-	-	42,883	-	-	69,517	55,499	
Gain / (loss) on sale of office vehicles	-	-	-	-	1,004,709	-	-	-	-	-	
Earnings Before Interest & Taxes	948,527	1,738,112	2,515,732	3,337,824	5,245,539	5,054,042	6,170,885	6,552,533	6,974,460	7,304,296	
Earnings Before Tax	948,527	1,738,112	2,515,732	3,337,824	5,245,539	5,054,042	6,170,885	6,552,533	6,974,460	7,304,296	
Tax	44,853	150,717	273,146	454,456	993,662	936,213	1,279,809	1,413,386	1,561,061	1,676,503	
<b>NET PROFIT/(LOSS) AFTER TAX</b>	<b>903,674</b>	<b>1,587,396</b>	<b>2,242,586</b>	<b>2,883,368</b>	<b>4,251,877</b>	<b>4,117,830</b>	<b>4,891,076</b>	<b>5,139,147</b>	<b>5,413,399</b>	<b>5,627,793</b>	

## 12.2 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	265,647	1,766,382	4,402,837	7,510,668	11,345,835	12,482,992	17,680,552	23,757,230	30,078,488	36,587,085	44,479,243
Accounts receivable		868,090	948,779	1,110,702	1,282,458	1,473,730	1,686,479	1,922,851	2,125,184	2,285,762	2,457,195
Finished goods inventory		282,495	329,888	382,921	442,247	508,532	582,512	664,996	717,039	773,215	833,855
Raw material inventory	103,547	128,936	156,748	189,585	228,279	273,794	327,245	369,777	417,385	471,124	-
Pre-paid building rent	210,000	231,000	254,100	279,510	307,461	338,207	372,028	409,231	450,154	495,169	-
<b>Total Current Assets</b>	<b>579,193</b>	<b>3,276,902</b>	<b>6,092,352</b>	<b>9,473,386</b>	<b>13,606,279</b>	<b>15,077,255</b>	<b>20,648,815</b>	<b>27,124,085</b>	<b>33,788,251</b>	<b>40,612,355</b>	<b>47,770,293</b>
<i>Fixed assets</i>											
Building Security	210,000	210,000	210,000	210,000	210,000	210,000	210,000	210,000	210,000	210,000	210,000
Machinery & equipment	3,531,800	3,178,620	2,825,440	2,472,260	2,119,080	1,765,900	1,412,720	1,059,540	706,360	353,180	-
Furniture & fixtures	1,751,500	1,576,350	1,401,200	1,226,050	1,050,900	875,750	700,600	525,450	350,300	175,150	-
Office vehicles	2,511,773	2,009,418	1,507,064	1,004,709	502,355	4,045,236	3,236,188	2,427,141	1,618,094	809,047	-
Computer equipment	79,500	53,265	27,030	92,826	61,661	31,291	107,458	71,380	36,223	124,396	82,631
Office equipment	242,700	218,430	194,160	169,890	145,620	121,350	97,080	72,810	48,540	24,270	-
<b>Total Fixed Assets</b>	<b>8,327,273</b>	<b>7,246,083</b>	<b>6,164,894</b>	<b>5,175,735</b>	<b>4,089,615</b>	<b>7,049,526</b>	<b>5,764,046</b>	<b>4,366,322</b>	<b>2,969,517</b>	<b>1,696,043</b>	<b>292,631</b>
<i>Intangible assets</i>											
Pre-operation costs	140,000	112,000	84,000	56,000	28,000	-	-	-	-	-	-
<b>Total Intangible Assets</b>	<b>140,000</b>	<b>112,000</b>	<b>84,000</b>	<b>56,000</b>	<b>28,000</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>TOTAL ASSETS</b>	<b>9,046,466</b>	<b>10,634,986</b>	<b>12,341,246</b>	<b>14,705,122</b>	<b>17,723,895</b>	<b>22,126,781</b>	<b>26,412,862</b>	<b>31,490,406</b>	<b>36,757,767</b>	<b>42,308,398</b>	<b>48,062,924</b>
<b>Liabilities &amp; Shareholders' Equity</b>											
<i>Current liabilities</i>											
Accounts payable		684,845	803,710	925,000	1,060,405	1,211,414	1,379,665	1,566,134	1,694,348	1,831,579	1,958,313
<b>Total Current Liabilities</b>	<b>-</b>	<b>684,845</b>	<b>803,710</b>	<b>925,000</b>	<b>1,060,405</b>	<b>1,211,414</b>	<b>1,379,665</b>	<b>1,566,134</b>	<b>1,694,348</b>	<b>1,831,579</b>	<b>1,958,313</b>
<i>Other liabilities</i>											
<i>Shareholders' equity</i>											
Paid-up capital	9,046,466	9,046,466	9,046,466	9,046,466	9,046,466	9,046,466	9,046,466	9,046,466	9,046,466	9,046,466	9,046,466
Retained earnings		903,674	2,491,070	4,733,656	7,617,023	11,868,901	15,986,730	20,877,806	26,016,953	31,430,352	37,058,145
<b>Total Equity</b>	<b>9,046,466</b>	<b>9,950,141</b>	<b>11,537,536</b>	<b>13,780,122</b>	<b>16,663,490</b>	<b>20,915,367</b>	<b>25,033,197</b>	<b>29,924,272</b>	<b>35,063,419</b>	<b>40,476,818</b>	<b>46,104,611</b>
<b>TOTAL CAPITAL AND LIABILITIES</b>	<b>9,046,466</b>	<b>10,634,986</b>	<b>12,341,246</b>	<b>14,705,122</b>	<b>17,723,895</b>	<b>22,126,781</b>	<b>26,412,862</b>	<b>31,490,406</b>	<b>36,757,767</b>	<b>42,308,398</b>	<b>48,062,924</b>

## 12.3 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		903,674	1,587,396	2,242,586	2,883,368	4,251,877	4,117,830	4,891,076	5,139,147	5,413,399	5,627,793
Add: depreciation expense		1,081,190	1,081,190	1,081,190	1,086,120	1,085,325	1,392,017	1,397,725	1,396,805	1,396,805	1,403,412
amortization of pre-operating costs		28,000	28,000	28,000	28,000	28,000	-	-	-	-	-
Accounts receivable		(868,090)	(80,689)	(161,923)	(171,756)	(191,272)	(212,749)	(236,372)	(202,333)	(160,579)	(171,432)
Finished goods inventory		(282,495)	(47,393)	(53,033)	(59,325)	(66,285)	(73,980)	(82,484)	(52,043)	(56,175)	(60,640)
Raw material inventory	(103,547)	(25,389)	(27,812)	(32,837)	(38,694)	(45,515)	(53,451)	(42,532)	(47,609)	(53,738)	471,124
Pre-paid building rent	(210,000)	(21,000)	(23,100)	(25,410)	(27,951)	(30,746)	(33,821)	(37,203)	(40,923)	(45,015)	495,169
Accounts payable		684,845	118,865	121,290	135,405	151,009	168,251	186,469	128,214	137,231	126,734
Cash provided by operations	(313,547)	1,500,735	2,636,455	3,199,862	3,835,166	5,182,393	5,304,098	6,076,678	6,321,258	6,631,927	7,892,158
Purchase of (treasury) shares											
Cash provided by / (used for) financing activities	9,046,466	-	-	-	-	-	-	-	-	-	-
<i>Investing activities</i>											
Capital expenditure	(8,467,273)	-	-	(92,031)	-	(4,045,236)	(106,538)	-	-	(123,331)	-
Cash (used for) / provided by investing activities	(8,467,273)	-	-	(92,031)	-	(4,045,236)	(106,538)	-	-	(123,331)	-
NET CASH	265,647	1,500,735	2,636,455	3,107,831	3,835,166	1,137,157	5,197,560	6,076,678	6,321,258	6,508,596	7,892,158

## 13 KEY ASSUMPTIONS

### 13.1 Operating Cost Assumptions

Description	Details
Travelling Expense	15% of administration expense
Communication Expenses	5% of administration expense
Promotional Expenses	0.2% of revenue (Year 1 – Year 5) 0.1% of revenue (Year 6 – Year 10)
Depreciation Method	Straight Line
Depreciation Rate	10% on Machinery & Equipment 33% on Office Equipment 10% on Furniture & Fixture 20% on Office Vehicle
Inflation Growth Rate	10%
Electricity Price Growth Rate	10%
Salaries Growth Rate	10%
Gas Price Growth Rate	5%

### 13.2 Production Cost Assumptions

Description	Details
Maximum Processing Capacity in Kgs	240,000
No of Operational Hours Per Day	10
Shift Length (Hours)	10
No of Operational Days	300
Maximum Production Capacity	90%
Processing Days Potatoes	75

Processing Days Onion	150
Processing Days Garlic	75

### 13.3 Revenue Assumptions

Description	Details
Sale Price Growth Rate	7.5%
Capacity Utilization (Year 1)	60%
Capacity Utilization Growth Rate	5%