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# Pre-Feasibility Study

## OFF-SEASON VEGETABLE FARMING (LOW TUNNEL)



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## 1 DISCLAIMER

This information memorandum is to introduce the subject matter and provide a general idea and information on the subject. 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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## 2 EXECUTIVE SUMMARY

Tunnel farming is gaining popularity, and is being practiced in all regions of Pakistan.

The proposed project is a medium sized off-season vegetable farming unit, spreading over 9 acres. Off-season vegetables are proposed to be cultivated in this project using low tunnel technology. The three fruits and vegetables assumed to be cultivated in this particular project are Watermelon, Muskmelon and Round Gourd. The total time required for land preparation till the time for harvesting is around 7 months.

The estimated yield of the farm varies according to the crop mix selected. The proposed mix for this pre-feasibility will be cultivated on 9 acres of land. The quantity of seeds sown per acre each year is 600 grams for watermelon, 250 grams for Muskmelon and 1,000 grams for Round Gourd. The estimated produce would be 45 tons of watermelon, 36 tons of muskmelon and 15 tons of round gourd excluding 10% wastage.

Complete adherence to best agronomic practices as recommended is critical to the success of this project, therefore technical knowledge and experience of the entrepreneur is absolutely necessary.

The cost for setting up the proposed low tunnel farm is estimated at Rs. 3.35 million including fixed investment of Rs. 0.44 million and initial working capital of Rs. 2.91 million. The project NPV is Rs. 8.12 million and IRR is 66% with payback period of 1.68 years. The legal business status of this project is proposed as '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 '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 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, production, marketing, finance and business management.

The purpose of this document is to facilitate potential investors in **Off-Season Vegetable Farming (Low Tunnel)** by providing them 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

There is a great demand of fruits and vegetables all year round. Prices are at the highest at the start and end of the season. Farmers can get high returns if modern techniques are applied to grow off-season crops. Vegetable / fruit can be cultivated in off-season, with introduction of techniques like tunnel technology, in which temperature and moisture is controlled for growth of vegetables in specific conditions. The production of vegetables all around the year enables the technically competent growers to fully utilize their resources and supplement relatively high income from fruits growing as compared to traditional crops.

The proposed project is designed as a medium sized off-season vegetable / fruit farming unit on 9 acres of land. These tunnels are suitable for heavy individual fruit bearing crops, i.e. melons, watermelons, pumpkin, round gourds, squashes, etc. However, for the purpose of this pre-feasibility three crops are being proposed, namely: Watermelon, Muskmelon and Round Gourd.

The farm will provide direct employment opportunities to 10 individuals, while seasonal pickers & packers are also required. The estimated yield potential of the farm varies according to the selected type of crop. With above mentioned crop mix, combined yield of 96 tons per season excluding wastage.

This Pre-feasibility assumes the legal status of individual as a farmer with less than 12.5 acres of land.

### 5.1 Low Tunnel Structure Specifications

As mentioned above, off-season vegetable cultivation is recommended with the use of low tunnels. It is the cheapest among the available options and quite similar to conventional method. The specifications of low tunnel are given in the following table:

**Table 1: Specification of Low Tunnel**

Material Specification	Material	Description
	Iron Rod	Diameter 1/4 inch Length 10 ft.
	Plastic	0.04 mm thick and 10 ft. wide
Tunnel Specification	Dimensions	Description
	Height	3.5-4 ft., Half-moon shaped
	Width	4 ft.
	Length	200 ft.
	No. of tunnels	25 per acre

The cost of stated structural and material requirement of such tunnel amount to Rs. 68,000 per acre including the cost related to plastic used as a shield (cover) and mulch.

### 5.2 Support Structure

Each tunnel will be 200 feet long, 3.5 ~ 4 feet high and 4 feet wide. The tunnel is built by a 1/4-inch diameter Iron rod of 10 feet length, in half moon shape. The plastic pipes are placed at regular intervals of approximately 10 feet. Each tunnel structure will then be covered by a 0.04 mm thick and 10 feet wide plastic sheet.

Approximately 25 tunnels can be constructed on an acre of land depending on the type of vegetable, i.e. watermelon, muskmelon or round gourd.

**Figure 1: Low Plastic Tunnel Structure**



**Figure 2: Sample Low Plastic Tunnels**



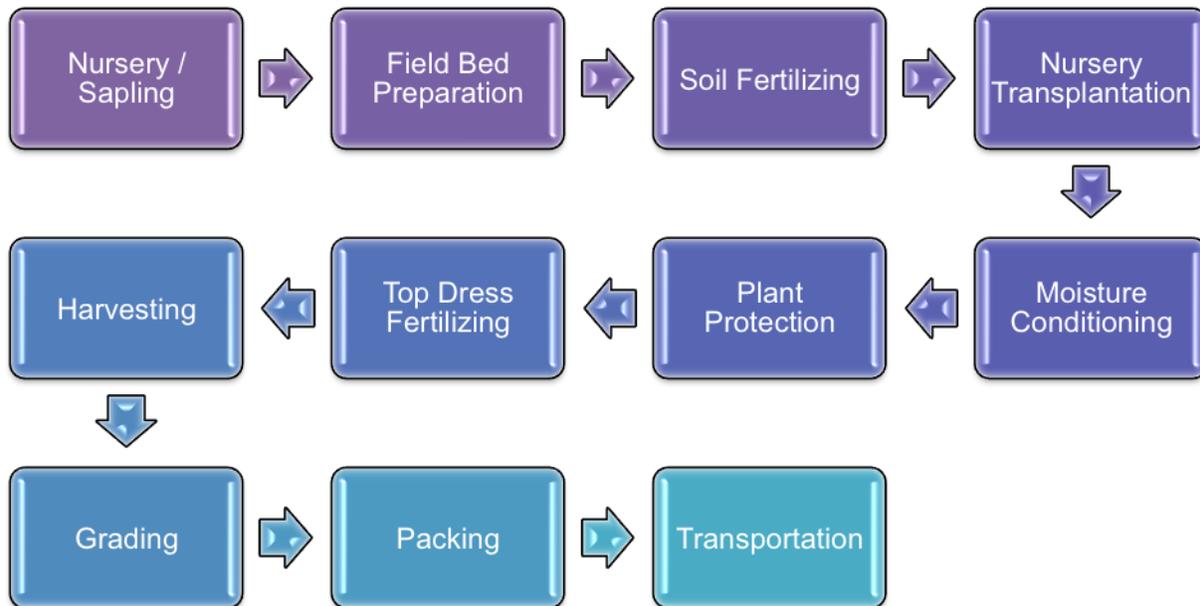
**5.3 Installed and Operational Capacities**

Following table provides information on the total production, inclusive of 10% wastage:

**Table 2: Total Production Capacity**

Vegetables	Area (acres)	Seed Quantity (grams/acre)	Plants / acre	Production per acer (kg)
Watermelon	3	600	5000	45,000
Muskmelon	4	250	6000	36,000
Round Gourd	2	1,000	5000	15,000

## 5.4 Production Process Flow



## 6 CRITICAL FACTORS

Following principles need to be pursued for the best productivity of proposed fruits and vegetables:

- ⇒ Proper soil analysis for determining soil nutritional level.
- ⇒ Use of high quality hybrid seeds.
- ⇒ Fertile land and its maintenance within the tunnel during the period of cultivation.
- ⇒ Timely control of pests, diseases and exercise of all recommended agronomic measures.
- ⇒ Maintenance and control of internal temperature and humidity of the tunnel.
- ⇒ Timely irrigation, fertilization, training and grading of plantation.
- ⇒ Fertilization as per expert(s) recommendation.
- ⇒ Appropriate post-harvest arrangement for washing, grading, packing, and transportation of product to the market.

## 7 GEOGRAPHICAL POTENTIAL FOR INVESTMENT

As per the information gathered from Agriculture Department, Government of Punjab, and National Agricultural Research Center, Islamabad, following are the potential areas of off-season vegetable production:

Mamonkangan, Nankana Sahib, Faisalabad, Kamalia in Toba Tek Singh, Rahim Yar Khan, Chack Shahzad, Islamabad, Swat, Tarnab, Mardan, Khairabad, Mirpur Khas, Chiniot, etc., in addition to few locations in Sindh and Balochistan.

## 8 POTENTIAL TARGET MARKETS / CITIES

Keeping in view the product price level, demand and purchasing power of customer; whole sale markets, metropolitan cities / urban area are the potential markets for off season vegetables.

## 9 PROJECT COST SUMMARY

A detailed financial model has been developed to analyze the commercial viability of “Off Season Vegetable Farming (Low Tunnel)”. 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 appendix.

### 9.1 Project Economics

The proposed crop mix is watermelon, muskmelon and round gourd cultivated on 3 acres, 4 acres and 2 acres of land, respectively. The estimated produce would be 45 tons of watermelon, 36 tons of muskmelon and 15 tons of round gourd excluding wastage.

The following table shows internal rate of return, payback period and net present value:

**Table 3: Project Economics**

Description	Details
Internal Rate of Return (IRR)	66%
Payback Period (Yrs.)	1.68
Net Present Value (NPV) (Rs.)	8,122,448

Returns on the investment and its profitability are highly dependent on the entrepreneur having some practical knowledge about agriculture & farming, selection of fertile land, selection of high yield seed, cultivating the in-demand vegetables and selection of right time for vegetable cultivation.

## 9.2 Project Financing

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

**Table 4: Project Financing**

Description	Details
Total Equity (50%)	Rs. 1,675,575
Bank Loan (50%)	Rs. 1,675,575
Markup to the Borrower (%age/annum)	14%
Tenure of the Loan (Years)	5

## 9.3 Project Cost

Following requirements have been identified for operations of the proposed business:

**Table 5: Project Cost Summary**

Description	Amount Rs.
<b>Capital Cost</b>	
Farm and Tools	45,000
Furniture and Fixtures	40,000
Tunnel Equipment	333,000
Pre-operating Cost	25,000
<b>Total Capital Cost</b>	<b>443,000</b>
<b>Working Capital</b>	
Cash	1,173,300
Upfront Land Lease Rental	450,000
Raw Material Inventory	1,284,850
<b>Total Working Capital</b>	<b>2,908,150</b>
<b>Total Project Cost</b>	<b>3,351,150</b>

## 9.4 Land Requirement

The area has been calculated on the basis of minimum viable land required for setting up an Off-Season Vegetable Farm (Low Tunnel). Following table shows calculations for project space requirement:

**Table 6: Land Requirement**

Vegetable	Land Utilization (Acres)	Land Lease Cost per Acre (Rs.)	Total Land Lease Cost (Rs.)
Watermelon	3	50,000	150,000
Muskmelon	4	50,000	200,000
Round Gourd	2	50,000	100,000
<b>Total</b>	<b>9</b>		<b>450,000</b>

As the land will be acquired on lease, hence total land lease cost during 1st year would be approximately Rs. 450,000

### 9.5 Machinery & Equipment Requirement

Plant and machinery required for an off-season vegetable farm can be purchased or rented by paying on hourly basis. In this particular Pre-feasibility, it has been assumed that machinery for hoeing and land preparation would be rented, while spray machine and some tools would be purchased.

Following table provides list of machinery and tunnel farm equipment required for Off-Season Vegetable Farming (Low Tunnel).

**Table 7: List of Machinery**

Description	Replacement Year	Quantity	Unit Cost Rs.	Total Rs.
Farm Tools (Hand Tools)	5	1	20,000	20,000
Spray Machines	5	5	5,000	25,000
<b>Total</b>				<b>45,000</b>

### 9.6 Furniture and Fixture

Furniture and fixture required for the proposed project are given in the table below:

**Table 8: Furniture and Fixture Requirement**

Description	Replacement Year	Quantity	Cost Rs./unit	Total Rs.
Working Tables	5	4	5,000	20,000
Chairs	5	8	2,500	20,000
<b>Total</b>				<b>40,000</b>

### 9.7 Low Tunnel Structure Requirement

Low tunnel structure requirements for 9 acres are given in the table below:

**Table 9: Structure Expense for Low Tunnel**

Description	Replacement Year	Qty.	Unit Cost (Rs.)	Total Amount (Rs.)
Iron Road ???	3	3,600	80	288,000
Plastic String (kg)	3	180	250	45,000
<b>Total Equipment Cost</b>				<b>333,000</b>

### 9.8 Plastic Sheet and Structure Installation Requirements

Plastic sheet and structure installation required for the project is given in the table below:

**Table 10: Plastic Sheet and Structure Installation Requirement**

Description	Qty.	Unit Cost (Rs.)	Total Amount (Rs.)
Plastic Sheet - White (kg)	720	250	180,000
Plastic Mulch - Black (kg)	180	300	54,000
Structure installation cost (Acres)	9	5,000	45,000
<b>Total</b>			<b>279,000</b>

### 9.9 Raw Material Requirement

The estimated yield potential of the farm varies according to the selected type of crop. The quantity of seeds sown each year on 9 acres of land is 600 grams for watermelon and 250 grams for muskmelon and 1000 grams for round gourd. Following table shows the raw material requirement:

**Table 11: Seed Cost**

Vegetables	Area (Acres)	Grams of Seeds / Acre	Cost Per Acre Rs.	Total Cost of Seeds
Watermelon	3	600	10,000	30,000
Muskmelon	4	250	10,000	40,000
Round Gourd	2	1,000	6,000	12,000
<b>Total</b>				<b>82,000</b>

Apart from high yield seeds following other raw material will also be required for cultivating off-season vegetables:

**Table 12: Fertilizer Requirement**

Fertilizer	Unit	Qty / Acre	Unit Rate (Rs.)	Total Fertilizer Cost (Rs.)
CAN	Bags	10	1,600	144,000
Nitrophos	Bags	4	2,500	90,000
DAP	Bags	2	3,200	57,600
SOP	Bags	2	4,250	76,500
<b>Total Cost of Fertilizer</b>				<b>368,100</b>

**Table 13: Pesticide Requirement**

Pesticide	Unit	Qty.	Unit Rate (Rs.)	Total Fertilizer Cost (Rs.)
Fungicide	Acres	9	20,000	180,000
Insecticide	Acres	9	15,000	135,000
<b>Total Pesticide Spray Cost</b>				<b>315,000</b>

### 9.10 Human Resource Requirement

Owner / Manager will be engaged for 8 months per year, whereas, permanent and temporary labor will be engaged for 7 months and 2 months respectively. Permanent staff required for the project is given in the table below:

**Table 14: Human Resource Requirement (Permanent)**

Description	No. of Employees	Salary per Month (Rs.)	Salary / Season (Rs.)
Owner/Farm Manager	1	25,000	200,000
Permanent Labor	9	13,000	819,000
<b>Total Staff</b>	<b>10</b>		<b>1,019,000</b>

Seven pickings per month are assumed from 1 acre with an average rate of Rs. 300 per picking per person.

Following table shows the calculations for temporary labor wage:

**Table 15: Human Resource Requirement (Temporary)**

Description	Number	Wages (Rs. per picking / person)	Total Seasonal Wages (Rs.)
Temporary Labor	4	Male: 300 Female: 300	151,200

Salaries of all employees / workers are estimated to increase at 10% annually.

### 9.11 Revenue Generation

Expected production and sale prices of the proposed produce are given in the table below:

**Table 16: Expected Production and Revenue Generation**

Vegetable	Land Utilization (Acres)	Sale Price (Rs./ Kg )	First Year Production excl. Wastage (Kg)	First Year Sales Revenue (Rs)
Watermelon	3	15	45,000	2,025,000
Muskmelon	4	26	36,000	3,744,000
Round Gourd	2	20	15,000	600,000
Sales of Empty Bags				1,620
<b>Total</b>				<b>6,370,620</b>

### 9.12 Other Costs

An essential cost to be borne by the farm is the transportation cost incurred during transfer of vegetables from the farm to the market, which is estimated as Rs. 247,200 for year one. Similarly, electricity expense is estimated to be around Rs. 35,000 for first year

## 10 CONTACT DETAILS

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

Name of Supplier	Address	Phone
Dr. M. Aslam Parvez Director	Institute of Horticultural Sciences, Faculty of Agriculture, University of Agriculture, Faisalabad	+92-41-9201281
Dr. Ghulam Jellani, Principal Scientific Officer (Vegetable)	Horticulture Research Institute National Agricultural Research Centre Park Road, Islamabad	+92-51 9255061
Dr. Muhammad Anjum ali Director General (Extension)	Agriculture Department, Govt. of Punjab 21-Davis Road, Lahore	92-42-99200732
Chief Executive Officer (Pakistan Horticulture Development and Export Company)	30 N, Model Town Extension, Lahore (54700), Pakistan.	+92-42-99232210- 17

## 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>
Ministry of Education, Training & Standards in Higher Education	<a href="http://moptt.gov.pk">http://moptt.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>
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>
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 Agriculture and Meat Company	<a href="http://www.pamco.bz">www.pamco.bz</a>
Farmers Associates Pakistan	<a href="http://www.farmersassociates.com">www.farmersassociates.com</a>
Punjab Agriculture Department	<a href="http://www.agripunjab.gov.pk">www.agripunjab.gov.pk</a>
Ministry of National Food Security and Research (MNFS&R)	<a href="http://www.mnfsr.gov.pk">www.mnfsr.gov.pk</a>
National Agriculture Research Council (NARC)	<a href="http://www.narc.org.pk">www.narc.org.pk</a>
Pakistan Agriculture And Dairy Farm Association	<a href="http://www.padfapak.org">www.padfapak.org</a>
Sindh Chamber of Agriculture	<a href="http://www.sindhchamberofagriculture.com">www.sindhchamberofagriculture.com</a>

## 12 ANNEXURES

### 12.1 Income Statement

Income Statement										
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Revenue	6,370,620	7,007,682	7,708,450	8,479,295	9,327,225	10,259,947	11,285,942	12,414,536	13,655,990	15,021,589
<i>Cost of sales</i>										
Plastic Sheet (white)	180,000	198,000	217,800	239,580	263,538	289,892	318,881	350,769	385,846	424,431
Plastic Mulch (black)	54,000	59,400	65,340	71,874	79,061	86,968	95,664	105,231	115,754	127,329
Structure installation cost	45,000	49,500	54,450	59,895	65,885	72,473	79,720	87,692	96,461	106,108
Seeds expense	82,000	90,200	99,220	109,142	120,056	132,062	145,268	159,795	175,774	193,352
Fertilizer expense	368,100	404,910	445,401	489,941	538,935	592,829	652,112	717,323	789,055	867,961
Pesticide expense	315,000	346,500	381,150	419,265	461,192	507,311	558,042	613,846	675,230	742,754
Green Manuring and Land Preparation	180,000	198,000	217,800	239,580	263,538	289,892	318,881	350,769	385,846	424,431
Mechanical Hoeing	15,750	17,325	19,058	20,963	23,060	25,366	27,902	30,692	33,762	37,138
Irrigation expense	45,000	45,900	46,818	47,754	48,709	49,684	50,677	51,691	52,725	53,779
Direct labor	970,200	1,067,220	1,173,942	1,291,336	1,420,470	1,562,517	1,718,768	1,890,645	2,079,710	2,287,681
Transportation Cost from Farm to Market	247,200	271,920	299,112	329,023	361,926	398,118	437,930	481,723	529,895	582,885
Packing expense	318,000	333,900	350,595	368,125	386,531	405,858	426,150	447,458	469,831	493,322
Total cost of sales	2,820,250	3,082,775	3,370,686	3,686,479	4,032,900	4,412,967	4,829,996	5,287,634	5,789,889	6,341,169
Gross Profit	3,550,370	3,924,907	4,337,765	4,792,816	5,294,325	5,846,980	6,455,946	7,126,902	7,866,101	8,680,420
<i>General administration &amp; selling expenses</i>										
Administration expense	200,000	220,000	242,000	266,200	292,820	322,102	354,312	389,743	428,718	471,590
Administration benefits expense	10,000	11,000	12,100	13,310	14,641	16,105	17,716	19,487	21,436	23,579
Land lease rental expense	450,000	495,000	544,500	598,950	658,845	724,730	797,202	876,923	964,615	1,061,076
Electricity expense	35,000	38,500	42,350	46,585	51,244	56,368	62,005	68,205	75,026	82,528
Travelling expense	35,000	36,750	38,588	40,517	42,543	44,670	46,903	49,249	51,711	54,296
Communications expense (phone, mail, etc.)	21,000	22,050	23,153	24,310	25,526	26,802	28,142	29,549	31,027	32,578
Misc. expenses	10,000	11,000	12,100	13,310	14,641	16,105	17,716	19,487	21,436	23,579
Vegetable Market expense	637,062	700,768	770,845	847,930	932,722	1,025,995	1,128,594	1,241,454	1,365,599	1,502,159
Depreciation expense	119,500	119,500	119,500	136,996	136,996	142,740	162,994	162,994	162,994	186,441
Amortization of pre-operating costs	5,000	5,000	5,000	5,000	5,000	-	-	-	-	-
Subtotal	1,522,562	1,659,568	1,810,135	1,993,108	2,174,978	2,375,616	2,615,584	2,857,091	3,122,560	3,437,827
Operating Income	2,027,808	2,265,339	2,527,630	2,799,708	3,119,347	3,471,365	3,840,362	4,269,812	4,743,540	5,242,593
Other income (interest on cash)	-	-	-	-	-	-	-	-	-	-
Earnings Before Interest & Taxes	2,027,808	2,265,339	2,527,630	2,799,708	3,119,347	3,471,365	3,840,362	4,269,812	4,743,540	5,242,593
Interest expense on long term debt (Project Loan)	28,952	24,040	18,394	11,904	4,445	-	-	-	-	-
Interest expense on long term debt (Working Capital Loan)	112,611	-	-	-	-	-	-	-	-	-
Subtotal	141,564	24,040	18,394	11,904	4,445	-	-	-	-	-
Earnings Before Tax	1,886,244	2,241,299	2,509,236	2,787,804	3,114,901	3,471,365	3,840,362	4,269,812	4,743,540	5,242,593
Tax	260,436	313,695	353,885	395,671	444,735	498,205	553,554	617,972	689,031	763,889
<b>NET PROFIT/(LOSS) AFTER TAX</b>	<b>1,625,808</b>	<b>1,927,604</b>	<b>2,155,351</b>	<b>2,392,134</b>	<b>2,670,166</b>	<b>2,973,160</b>	<b>3,286,808</b>	<b>3,651,840</b>	<b>4,054,509</b>	<b>4,478,704</b>

## 12.2 Balance Sheet

<b>Balance Sheet</b>											
	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	1,173,300	1,405,013	3,540,095	5,526,652	8,166,524	11,044,680	13,922,312	17,606,505	21,688,312	25,692,238	35,089,630
Accounts receivable		122,176	128,285	141,114	155,225	170,747	187,822	206,604	227,265	249,991	274,990
Raw material inventory	1,284,850	1,409,735	1,547,037	1,697,995	1,863,974	2,046,474	2,247,147	2,467,808	2,710,453	2,977,281	45,000
Pre-paid annual land lease	450,000	495,000	544,500	598,950	658,845	724,730	797,202	876,923	964,615	1,061,076	-
<b>Total Current Assets</b>	<b>2,908,150</b>	<b>3,431,925</b>	<b>5,759,916</b>	<b>7,964,710</b>	<b>10,844,568</b>	<b>13,986,631</b>	<b>17,154,484</b>	<b>21,157,840</b>	<b>25,590,645</b>	<b>29,980,587</b>	<b>35,409,621</b>
<i>Fixed assets</i>											
Machinery & equipment	45,000	40,500	36,000	31,500	27,000	79,933	69,689	59,446	49,203	38,960	28,716
Furniture & fixtures	40,000	36,000	32,000	28,000	24,000	20,000	16,000	12,000	8,000	4,000	-
Tunnel equipment	333,000	222,000	111,000	385,489	256,993	128,496	446,252	297,501	148,751	516,592	344,395
<b>Total Fixed Assets</b>	<b>418,000</b>	<b>298,500</b>	<b>179,000</b>	<b>444,989</b>	<b>307,993</b>	<b>228,429</b>	<b>531,941</b>	<b>368,947</b>	<b>205,953</b>	<b>559,552</b>	<b>373,111</b>
<i>Intangible assets</i>											
Pre-operation costs	25,000	20,000	15,000	10,000	5,000	-	-	-	-	-	-
<b>Total Intangible Assets</b>	<b>25,000</b>	<b>20,000</b>	<b>15,000</b>	<b>10,000</b>	<b>5,000</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>TOTAL ASSETS</b>	<b>3,351,150</b>	<b>3,750,425</b>	<b>5,953,916</b>	<b>8,419,699</b>	<b>11,157,560</b>	<b>14,215,060</b>	<b>17,686,425</b>	<b>21,526,787</b>	<b>25,796,599</b>	<b>30,540,139</b>	<b>35,782,732</b>
<b>Liabilities &amp; Shareholders' Equity</b>											
<i>Current liabilities</i>											
Total Current Liabilities	-	-	-	-	-	-	-	-	-	-	-
<i>Other liabilities</i>											
Deferred tax		260,436	574,131	928,016	1,323,687	1,768,422	2,266,627	2,820,181	3,438,152	4,127,183	4,891,072
Long term debt (Project Loan)	221,500	188,605	150,798	107,344	57,402	-	-	-	-	-	-
Long term debt (Working Capital Loan)	1,454,075	-	-	-	-	-	-	-	-	-	-
<b>Total Long Term Liabilities</b>	<b>1,675,575</b>	<b>449,042</b>	<b>724,929</b>	<b>1,035,361</b>	<b>1,381,089</b>	<b>1,768,422</b>	<b>2,266,627</b>	<b>2,820,181</b>	<b>3,438,152</b>	<b>4,127,183</b>	<b>4,891,072</b>
<i>Shareholders' equity</i>											
Paid-up capital	1,675,575	1,675,575	1,675,575	1,675,575	1,675,575	1,675,575	1,675,575	1,675,575	1,675,575	1,675,575	1,675,575
Retained earnings		1,625,808	3,553,412	5,708,763	8,100,897	10,771,063	13,744,223	17,031,031	20,682,871	24,737,381	29,216,085
<b>Total Equity</b>	<b>1,675,575</b>	<b>3,301,383</b>	<b>5,228,987</b>	<b>7,384,338</b>	<b>9,776,472</b>	<b>12,446,638</b>	<b>15,419,798</b>	<b>18,706,606</b>	<b>22,358,446</b>	<b>26,412,956</b>	<b>30,891,660</b>
<b>TOTAL CAPITAL AND LIABILITIES</b>	<b>3,351,150</b>	<b>3,750,425</b>	<b>5,953,916</b>	<b>8,419,699</b>	<b>11,157,560</b>	<b>14,215,060</b>	<b>17,686,425</b>	<b>21,526,787</b>	<b>25,796,599</b>	<b>30,540,139</b>	<b>35,782,732</b>

## 12.3 Cash Flow Statement

<b>Cash Flow Statement</b>											
	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
<i>Operating activities</i>											
Net profit		1,625,808	1,927,604	2,155,351	2,392,134	2,670,166	2,973,160	3,286,808	3,651,840	4,054,509	4,478,704
Add: depreciation expense		119,500	119,500	119,500	136,996	136,996	142,740	162,994	162,994	162,994	186,441
amortization of pre-operating costs		5,000	5,000	5,000	5,000	5,000	-	-	-	-	-
Deferred income tax		260,436	313,695	353,885	395,671	444,735	498,205	553,554	617,972	689,031	763,889
Accounts receivable		(122,176)	(6,109)	(12,829)	(14,111)	(15,522)	(17,075)	(18,782)	(20,660)	(22,726)	(24,999)
Raw material inventory	(1,284,850)	(124,885)	(137,302)	(150,958)	(165,979)	(182,501)	(200,673)	(220,661)	(242,646)	(266,827)	2,932,281
<b>Cash provided by operations</b>	<b>(1,284,850)</b>	<b>1,763,683</b>	<b>2,222,389</b>	<b>2,469,949</b>	<b>2,749,710</b>	<b>3,058,875</b>	<b>3,396,357</b>	<b>3,763,913</b>	<b>4,169,500</b>	<b>4,616,980</b>	<b>8,336,315</b>
<i>Financing activities</i>											
Project Loan - principal repayment		(32,895)	(37,807)	(43,454)	(49,943)	(57,402)	-	-	-	-	-
Working Capital Loan - principal repayment		(1,454,075)	-	-	-	-	-	-	-	-	-
Add: land lease expense		450,000	495,000	544,500	598,950	658,845	724,730	797,202	876,923	964,615	1,061,076
Land lease payment	(450,000)	(495,000)	(544,500)	(598,950)	(658,845)	(724,730)	(797,202)	(876,923)	(964,615)	(1,061,076)	-
Additions to Project Loan	221,500	-	-	-	-	-	-	-	-	-	-
Additions to Working Capital Loan	1,454,075	-	-	-	-	-	-	-	-	-	-
Issuance of shares	1,675,575	-	-	-	-	-	-	-	-	-	-
<b>Cash provided by / (used for) financing activities</b>	<b>2,901,150</b>	<b>(1,531,970)</b>	<b>(87,307)</b>	<b>(97,904)</b>	<b>(109,838)</b>	<b>(123,286)</b>	<b>(72,473)</b>	<b>(79,720)</b>	<b>(87,692)</b>	<b>(96,461)</b>	<b>1,061,076</b>
<i>Investing activities</i>											
Capital expenditure	(443,000)	-	-	(385,489)	-	(57,433)	(446,252)	-	-	(516,592)	-
Acquisitions											
<b>Cash (used for) / provided by investing activities</b>	<b>(443,000)</b>	<b>-</b>	<b>-</b>	<b>(385,489)</b>	<b>-</b>	<b>(57,433)</b>	<b>(446,252)</b>	<b>-</b>	<b>-</b>	<b>(516,592)</b>	<b>-</b>
<b>NET CASH</b>	<b>1,173,300</b>	<b>231,713</b>	<b>2,135,081</b>	<b>1,986,557</b>	<b>2,639,872</b>	<b>2,878,156</b>	<b>2,877,632</b>	<b>3,684,193</b>	<b>4,081,807</b>	<b>4,003,926</b>	<b>9,397,392</b>

## 13 KEY ASSUMPTIONS

### 13.1 Operating Cost Assumptions

Description	Details
Administration Benefit Expenses	05% of Admin Expense
Communication Expenses	21,000 Annual Expense
Travelling Expense	35,000 Annual Expense
Promotional expense % of admin expense	1.0% of Revenue
Professional Fees (Legal, Audit, Consultant)	05% of Revenue
Depreciation on Building and Infrastructure	5%
Office Expenses (stationary, entertainment, janitorial services, etc.)	10%
Office vehicles insurance rate	10%
Depreciation on Tunnel Equipment	33%
Depreciation on Office Vehicle	20%
Operating Costs Growth Rate	10%
Accounts Receivable Cycle	07 Days
Raw Material Inventory	06 Months
Amortization Of Pre-Operating Expenses	05 Years

### 13.2 Production Cost Assumptions

Description	Details
Cost of Goods Sold Growth Rate	10%
Operating Cost Growth Rate	05%
Vegetable Market Expense	10% of Revenue
Miscellaneous Expense	05% of Admin Expense
Farm to Market Trip Cost	Rs. 247,200 Per Trip Cost: 8000 Per Trip Load: 10 (Tons) No. of Trip: 31
Pesticides Expense per season	Rs. 315,000
Cost of irrigation (9 acres)	45,000
Cost of Green manuring, Land preparation, & sowing (9 acres)	Rs. 180,000.
Cost of Mechanical Hoeing ( 9 acres)	Rs. 15,750
Total packing expense per season for 9 acres	Rs. 318,000

### 13.3 Revenue Assumptions

Description	Details
Annual Production (Kgs)	
Water Melon	45,000
Musk Melon	36,000
Round Gourd	15,000
Sale Price (per kg) in Year 1	
Water Melon	Rs. 15
Musk Melon	Rs. 26
Round Gourd	Rs. 20
Sales Price Growth Rate	10%
Production Capacity Utilization (1-10 Yr.)	100%
Days Operational / Year	7 Months

### 13.4 Financial Assumptions

Description	Details
Project Life	10 Years
Debt	50%
Equity	50%
Interest Rate on Debt	14%
Debt Tenure	5
Debt Payment / Year	12