

Pre-Feasibility Study

RICE HUSKING & POLISHING UNIT



Small and Medium Enterprises Development Authority

Ministry of Industries & Production

Government of Pakistan

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1 DISCLAIMER

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2 EXECUTIVE SUMMARY

Rice Husking and Polishing Unit is proposed to be set up in any major city of Pakistan. The unit would be de-husking rice paddy and polishing rice grains to convert it into a value added, marketable product. The unit would be providing husking and polishing services to rice producers along with husking and polishing Basmati and IRRI rice paddy purchased from the market.

Rice is grown on irrigated areas of all the four provinces of Pakistan. Rice crop is sown in the months of June / July and harvested in September / October. The crop needs fertile land and fertilizers for good yield. There are a number of different varieties of rice produced in Pakistan, major varieties include the Basmati and IRRI of which the world renowned Super Basmati is only produced in Pakistan. Rice production in Pakistan has increased greatly in the past 3-4 years. There is immense potential for value addition in the rice sector in post-harvest processing, such as quality polishing and packaging. Branded rice is becoming popular in both domestic and international markets. Basmati rice is renowned and has a huge market world over, due to its taste, aroma and nutritious value. This segment offers opportunities in rice processing and marketing of branded rice.

The proposed unit has an installed capacity of 8,736 tons of rice husking and 9,984 tons of rice polishing annually on 16 hours per day operational basis. The unit will operate at 65% of the installed capacity during first year of operation with a gradual increase of 5% in subsequent years to achieve the maximum capacity utilitarian. This production capacity is estimated to be economically viable & justifies the capital as well as operational cost of the project.

The estimated total cost of the proposed rice husking and polishing unit is Rs. 93.37 million out of which Rs. 71.41 million is the capital cost and Rs. 21.96 million is for working capital. The project is to be financed through 50% debt and 50% equity. The project NPV is around Rs. 52.18 million, with an IRR of 29% and Payback Period of 4.3 years. The project will provide direct employment opportunities to 18 people including owner manager; additionally, seasonal worker will also be engaged. 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 '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 **Rice Husking and Polishing** 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 it's 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 are a number of different varieties of rice produced in Pakistan, major varieties include the Basmati and IRRI of which the world renowned Super Basmati is only produced in Pakistan. The proposed unit would be providing husking and polishing services to rice producers. Additionally, the unit would also

be purchasing Basmati and IRRI rice paddy for de-husking and polishing the rice to sell it into the market. The husking unit would operate 7 months in a year and polishing unit works all year round.

The project is proposed to be set up in any of the rice planting areas and big cities of Punjab and Sindh and some parts of Baluchistan and KPK. The business legal status of the proposed project can either be sole proprietorship or partnership. However, this pre-feasibility assumes the legal status to be Sole Proprietorship.

5.1 Production Process

5.1.1 Rice Husking

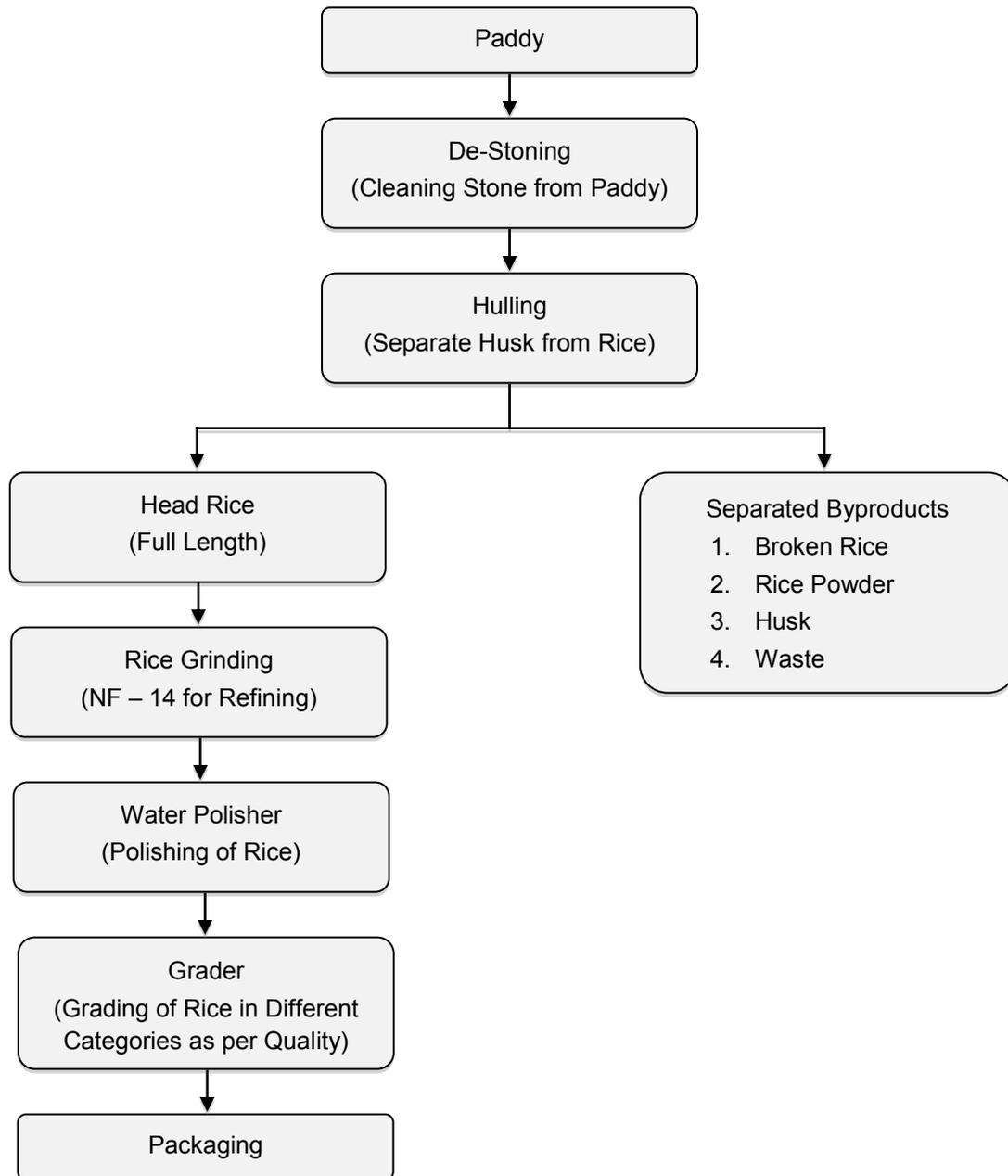
Husking is the process of separating the rice from the husk. Rubber roll and hullers are used to shatter the paddy to produce rice. The husking of paddy produces different products, which include 55% Head Rice, 9% Broken Rice, 3.5% Powder Rice, 31.5% Husk and 1% Waste and Dust Particles. Different processes are used for separation of head rice, broken rice, rice powder, dust and bran. The husking unit operates seven months in a year.

5.1.2 Rice Polishing

Polishing is the process of cleaning and polishing of brown rice (head / broken rice) to produce different value added rice products such as silky and non-silky rice. In this process various types of cleaners / polishers are used to give shine and silkiness to rice.

In the current industrial practice, both the husking and polishing units are not operated at the same time due to certain reasons. After the husking operation, the brown rice requires a time of six to ten weeks for drying and conditioning. So, the brown rice is stored for a period of at least two months before taking it to the polishing process.

The proposed unit would polish (process) in-house rice obtained from the husking process and the remaining capacity would be used to provide rice-polishing services to other rice suppliers. The processed rice (both brown rice and polished rice) would be stored during the first few months of harvesting season, as the prices are generally lower due to oversupply of rice in the market.

Figure: Production Process Flow Diagram

5.2 Product Mix

The proposed project would mainly provide husking and polishing services to rice producers who do not own a husking and polishing unit. It is assumed that 90% of the husking machinery capacity would be utilized in providing husking services, while the remaining 10% of the capacity would be used to process the paddy rice purchased / bought by the entrepreneur himself.

Table 1: Husking Operation

Product Mix	Percentage
Services to External Rice Producers	90%
De-husking of Own Purchased Paddy	10%

Similarly, major portion of polishing service capacity will be used to cater for the polishing requirements of other companies, whereas, remaining capacity of the polishing machine would be utilized to process the rice obtained from husking of the purchased rice paddy, which is assumed as only 7% of the total polishing unit capacity.

Table 2: Polishing Operations

Product Mix	Percentage
Services to External Rice Producers	93%
De-husking of Own Purchased Paddy	7%

Two main varieties of rice paddy, namely Basmati and IRRI, would be purchased for husking and polishing. The percentage of each variety is proposed as follows:

Table 3: Variety of Product Mix

Product Mix	Percentage
Basmati	80%
IRRI	20%

The products produced from the husking unit include: Head Rice, Broken Rice, Powder and Husk. The head rice would be processed further by the polishing unit and the broken rice, powder and husk are sold into the market. The percentage of each product is given in the table below.

Table 4: Products of Husking Process

Product Mix	Percentage
Rice for Polishing	55%
Broken Rice	9%
Powder	3.5%
Husk	31.5%
Trash	1%
Total	100%

The head rice obtained through the husking process is further processed in the polishing unit. The products produced from the polishing unit and their percentages are given in the table below:

Table 5: Products of Polishing Process

Product mix	Percentage
Polished Silky Rice	40%
Polished Non Silky Rice	40%
Polished Broken Rice	10%
Bran	10%
Total	100%

5.3 Installed and Operational Capacity

The husking unit would have a processing capacity of 48 tons rice paddy per day, operating 7 months a year. The rice-polishing unit would have a processing capacity of 32 tons rice per day and would operate for 12 months in a year. The project would initially run at 65% production capacity in year 1 and eventually reach 100% production capacity over the years. The unit would operate for 16 hours per day at 100% capacity, working in 2 shifts of 8 hours each.

Details of operational and installed capacity according to product mix are provided in the table below:

Table 6: Installed and Operational Capacity

Description	No of Operational Days per Year	Installed Production Capacity per Hour (Tons)	Operational Hours per Day (2 Shift Basis)	Total Production Capacity Annually (Tons)	Operational Capacity (Tons) in Year 1 (65%)
Rice Husking	182	3	16	8,736	5,678
Rice Polishing	312	2	16	9,984	6,490

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 food processing technology / business is absolutely necessary.
- ⇒ Selection of quality paddy rice on the basis of best analysis of cost and revenues for a given season; cost efficiency through better management.
- ⇒ Appropriate logistics and transportation of paddy rice to the processing unit.
- ⇒ Brand positioning and enhancement of production of rice may widen national and international market for the product.
- ⇒ Organic rice produced with the use of bio-fertilizer, bio insecticides and pesticides has a good domestic and international market.
- ⇒ Efficient recovery of by-products and their utilization may improve operational performance.
- ⇒ Properly trained seed 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 retailers.
- ⇒ Increasing regulatory pressures (e.g. Tax Regulation and various other regulations from government departments).

7 GEOGRAPHICAL POTENTIAL FOR INVESTMENT

As per current agricultural practices, rice cultivation is mainly concentrated in upper Punjab and Sindh and in some parts of South Punjab, Baluchistan and KPK. Keeping in view the varying geographical locations for rice cultivation, it is recommended that the project may be preferably located in the vicinity of urban areas of Punjab and Sindh for easy access and availability of the high quality paddy rice.

Following areas could be the most appropriate locations for the proposed unit:

Sialkot, Gujrat, Jhang, Mandi Bahhaudain, Hafizabad, Gujranwala, Narowal, Sheikhupura, Okara, Kasur, Bahawalnagar, Kashmore, Larkana, Dadu, Jacobabad, Jafferabad, Naseerabad, Mardan, etc.

8 POTENTIAL TARGET CUSTOMERS / MARKETS

Potential local target market for the produced rice will be the general public of upper-middle income group of urban cities, who generally prefer to buy rice from super markets and big departmental stores. Taking that into consideration, all the major metropolitan cities as well as urban and semi-urban cities across Pakistan would be the potential local target markets for the proposed business.

Besides that, following segments of clients in all the major cities of Pakistan will also be the potential target customers for the proposed business venture:

- ⇒ Departmental / Super Stores and Retail Chains
- ⇒ Traders, Suppliers and Exporters of Rice
- ⇒ Hotels, Restaurants and Banquet Halls

9 PROJECT COST SUMMARY

A detailed financial model has been developed to analyze the commercial viability of Rice Husking and Polishing Unit. Various costs 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 also attached as annexure.

9.1 Project Economics

All the figures in this financial model have been calculated on the basis of rice husking capacity of 48 tons per day and rice polishing capacity of 32 tons per day at 16 hours production two-shift basis. The capacity utilization during year one is worked out at 65% with 5% increase in subsequent years up to the maximum capacity utilization of 100%.

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

Table 7: Project Economics

Description	Details
Internal Rate of Return (IRR)	29%
Payback Period (Yrs.)	4.30
Net Present Value (Rs.)	52,179,308

9.2 Project Financing

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

Table 8: Project Financing

Description	Details
Total Equity (50%)	Rs.46,685,077
Bank Loan (50%)	Rs. 46,685,077
Markup to the Borrower (%age / annum)	14%
Tenure of the Loan (Years)	7 Years

9.3 Project Cost

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

Table 9: Project Cost

Description	Amount Rs.
Capital Cost	
Land	8,000,000
Building / Infrastructure	41,913,600
Machinery & Equipment	14,795,045
Furniture & Fixtures	322,500
Office Vehicles	1,836,000
Office Equipment	354,500
Pre-operating Costs	4,140,290
Training Costs	50,000
Total Capital Cost	71,411,935

Working Capital	
Raw Material Inventory	18,681,936
Equipment Spare Part Inventory	123,292
Cash	3,152,991
Total Working Capital	21,958,219
Total Project Cost	93,370,154

9.4 Space Requirement

The most important factor for setting up a rice unit is accessibility to raw material. Therefore, the unit should preferably be set up in areas, where rice is grown. Total land requirement for proposed project is 8 kanals. It is suggested to purchase land for setting up this project as the investment required for infrastructure and other costs is high and it is not advisable to invest a huge amount on leased or rented area. Total estimated land cost is taken at 1 million per kanal.

Details of space requirement and cost related to land & building is given below;

Table 10: Space Requirement

Description	Quantity /	Cost / Rate (Rs.)	Total (Rs.)
Management Building	1,000	1,500	1,500,000
Paddy Storage 1	6,500	1,200	7,800,000
Paddy Storage 2	4,500	1,200	5,400,000
Brown Rice Hall	5,000	1,200	6,000,000
Processing Hall	3,000	1,200	3,600,000
Processed Brown Rice Go-down	4,500	1,200	5,400,000
Weighing & Packing Area	1,000	1,200	1,200,000
Packed Rice Go-down	4,800	1,200	5,760,000
Free Space	5,700		
Boundary Wall	1,000	900	900,000
Main Gate			200,000
Design & Consultancy Charges - 5% Of Cost		5%	1,888,000
Misc. Cost		6%	2,265,600
Total Infrastructure	36,000		41,913,600

9.5 Machinery & Equipment Requirement

Majority of the machinery required for husking and polishing unit is manufactured locally apart from few items, for instance Polishers SM and Polishers NF Machines, which are mainly used for refining of the rice. Machinery can also be imported from China at cheaper rates compared to those from Japan or Korea.

Major machinery components of the Rice Husking & Polishing Unit are manufactured in the local market of Daska, Jallalpur Bhattian, Gujranwala and Lahore. Amongst the foreign suppliers, China is considered to be more competitive than other countries. For the purpose of this pre-feasibility study majority of machinery is considered from local suppliers except the few ones, which are assumed to be China make and will be purchased from local suppliers.

List of plant machinery and equipment required for the proposed unit is given in the table below:

Table 11: Machinery and Equipment Requirement

No.	Descriptions	Qty.	Unit Cost (Rs.)	Total Cost (Rs.)
Husking Plant Machines				
1	Pre cleaner PH 40 type 5'x10'	2	190,000	380,000
2	Paddy Husker (Pneumatic)	2	300,000	600,000
3	Husk Cleaner	1	175,000	175,000
4	Husk Blower 7'	1	50,000	50,000
5	Pre Cleaner Half Portion 5' x 10'	1	80,000	80,000
6	Paddy Separator 90 Comp	1	425,000	425,000
7	Husking Polisher SM-18 (China Made)	2	150,000	300,000
8	Husking Polisher NF-14 (China Made)	2	150,000	300,000
9	Rice grader 3 stage 5' x 10'	1	165,000	165,000
10	Length Grader	2	175,000	350,000
11	Width Grader	1	17,000	17,000
12	Elevator 10"x 30' Comp	1	90,000	90,000
13	Elevator 10"x 25' Comp	13	82,000	1,066,000
14	Pipe Line 18, 22 Gauge	1	168,000	168,000
15	Steel Structure with Wooden Platform	1	172,000	172,000
16	Dust Blower with Ducting	1	70,000	70,000

17	Cyclone 3.5' Dia	1	60,000	60,000
18	Blower for Bran 25" Impeller	1	40,000	40,000
19	Fitting Charges	1	200,000	200,000
				4,708,000
	Rice Polishing Machines			
1	Combi Cleaner with Blower	1	300,000	300,000
2	Paddy Separator (China made)	2	150,000	300,000
3	Width grader	2	18,000	36,000
4	De-Stoner (Satake Type with Blower)	1	180,000	180,000
5	Polisher SM-18 (China Made)	2	120,000	240,000
6	Polisher NF-14 (China Made)	2	60,000	120,000
7	Water Polisher (with Auto Sensor & Blower)	2	275,000	550,000
8	Rice Grader 3 Stage 5'x10'	1	165,000	165,000
9	Length Grader (28"x 100")	6	125,000	750,000
10	Elevator 10"x36'	20	100,000	2,000,000
11	Pipe Line 18, 22 Gauge	1	300,000	300,000
12	Steel Structure with Plat Form	1	250,000	250,000
13	Dust Blower 25" with Pipe Line	1	50,000	50,000
14	Blower for Polishers Bran 25"	1	70,000	70,000
15	Blower with Aspiration Screen (for Color Sorter)	1	75,000	75,000
16	Holding Bin 10' x 10'	3	100,000	300,000
17	Feeding Tank for Color Sorter	1	18,000	18,000
18	Feeding Tank	11	55,000	605,000
19	Cyclone 2.5'	4	40,000	160,000
20	Cyclone 3'	4	45,000	180,000
21	Fitting Charges	1	200,000	200,000
				6,849,000
	Taxes, Excise Duty and Others			2,138,045
	Generator - 80 kVA	1	500,000	500,000
	Generator - 120 kVA	1	600,000	600,000
	Total Machinery Cost			14,795,045

9.6 Furniture & Fixtures Requirement

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

Table 12: Furniture & Fixture Requirement

Description	Quantity	Unit Cost (Rs.)	Total Cost (Rs.)
Desk / Workstations	7	15,000	105,000
Office Chair	7	6,000	42,000
Visitor Chairs	14	5,000	70,000
Small Cabinet	7	9,000	63,000
Stool	5	2,000	10,000
Bench	5	3,500	17,500
Misc.	1	15,000	15,000
Total			322,500

9.7 Office Equipment and Vehicle Requirement

Following office equipment will be required for the proposed project.

Table 13: Office Equipment and Vehicles

Description	Quantity	Unit Cost (Rs.)	Total Cost (Rs.)
Computers	3	25,000	75,000
Computer Printer (S)	2	10,000	20,000
Scanner	1	7,500	7,500
Fax Machines	1	15,000	15,000
Telephone Set	6	2,000	12,000
Air-Conditioner (1.5 Ton)	3	55,000	165,000
UPS (4 KVA) for Admin	1	60,000	60,000
Mazda Truck (with Registration Charges)	1	1,836,000	1,836,000
Total			2,190,500

9.8 Human Resource Requirement

During husking season, the skilled labour is required for drying the paddy, loading and unloading of paddy bags. For a husking plant with processing capacity of 3 tons per hour, a maximum of 60 workers are required for seven months of operations.

During the polishing season, maximum of 8 un-skilled workers would be required for weighing, packing and stacking of rice bags.

The table below shows Human Resource requirement and the proposed annual salary for administrative and operational needs of the project during the first year, when both Husking and Polishing machines are operating at 65% capacity.

The production staff, working in shifts would be added according to capacity utilization growth each year.

Description	No. of Staff	Monthly Salary (Rs.)	Annual Salary in (Rs.)
Administrative Staff			
CEO	1	100,000	1,200,000
Admin And Finance Manager	1	60,000	720,000
Accounts Officer	2	20,000	480,000
Marketing and Sales Manager	1	60,000	720,000
Sales Officer	2	20,000	480,000
Office Boys	2	12,000	288,000
Security Guards	2	12,000	288,000
Total Admin Salaries			4,176,000
Production Staff			
Foreman	1	20,000	312,000
Helper	1	12,000	187,200
Unskilled Workers	5	12,000	936,000
Seasonal Paddy Workers	36	12,000	3,931,200
Total Direct Salaries			5,366,400
Total Salaries	54		9,542,400

9.9 Utilities and Other Costs

An essential cost to be borne by the project is the cost of electricity and diesel expenses for generator, which are assumed as Rs. 3.8 Million and 2.2 Million respectively during first year of operations. An increase of 10% in electricity and diesel expenses is assumed in subsequent years. Similarly, raw material transportation cost is worked out at Rs. 500 per ton and transportation and travelling expenses are estimated as 10% of administrative expenses. The water and gas expenses are estimated at Rs. 6,000 per month and Rs. 5,000 per month respectively. Furthermore, promotional expense being essential for marketing of the unit is estimated as 2% of total revenue, while vehicle repair and maintenance expenses as Rs. 180,000 annually.

9.10 Cost and Revenue Generation

Based on the capacity utilization of 65%, the details of cost and revenue generation of the proposed unit are provided in the following tables:

Rice Husking										
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Max husking machinery capacity (tonnes)	8,736	8,736	8,736	8,736	8,736	8,736	8,736	8,736	8,736	8,736
Husking machinery capacity utilization	65%	65%	65%	65%	65%	65%	65%	65%	65%	65%
Husking machinery capacity growth rate		5%	5%	5%	5%	5%	5%	5%	5%	5%
Annual husking machinery capacity	65%	70%	75%	80%	85%	90%	95%	100%	100%	100%
Annual Husking capacity (tonnes)	5,678	6,115	6,552	6,989	7,426	7,862	8,299	8,736	8,736	8,736
Own production capacity utilization	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%
Own production capacity utilization growth rate		0%	0%	0%	0%	0%	0%	0%	0%	0%
Own maximum capacity utilization	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%
Rice paddy bought for husking (tonnes)	568	612	655	699	743	786	830	874	874	874
Rice paddy for husking service(tonnes)	5,111	5,504	5,897	6,290	6,683	7,076	7,469	7,862	7,862	7,862
Rice for polishing	55%	312	336	360	384	408	432	456	480	480
Broken rice	9%	51	55	59	63	67	71	75	79	79
Powder	3.5%	20	21	23	24	26	28	29	31	31
Husk	31.5%	179	193	206	220	234	248	261	275	275
Waste	1.0%	6	6	7	7	7	8	8	9	9
Rice Polishing										
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Max polishing machinery capacity (tonne)	9,984	9,984	9,984	9,984	9,984	9,984	9,984	9,984	9,984	9,984
Polishing machinery capacity utilization	65%	65%	65%	65%	65%	65%	65%	65%	65%	65%
Polishing machinery capacity growth rate		5%	5%	5%	5%	5%	5%	5%	5%	5%
Annual polishing machinery capacity	65%	70%	75%	80%	85%	90%	95%	100%	100%	100%
Annual Polishing capacity (tonnes)	6,490	6,989	7,488	7,987	8,486	8,986	9,485	9,984	9,984	9,984
Own rice received from husking (tonnes)	312	336	360	384	408	432	456	480	480	480
Rice polish service (tonnes)	6,177	6,652	7,128	7,603	8,078	8,553	9,028	9,504	9,504	9,504
POLISHED SILKY RICE	40%	125	135	144	154	163	173	183	192	192
Basmati	80%	100	108	115	123	131	138	146	154	154
Irri	20%	25	27	29	31	33	35	37	38	38
POLISHED NON-SILKY RI	40%	125	135	144	154	163	173	183	192	192
Basmati	80%	100	108	115	123	131	138	146	154	154
Irri	20%	25	27	29	31	33	35	37	38	38
POLISHED BROKEN RICE	10%	31	34	36	38	41	43	46	48	48
Basmati	80%	25	27	29	31	33	35	37	38	38
Irri	20%	6	7	7	8	8	9	9	10	10
BRAN	10%	31	34	36	38	41	43	46	48	48

Sales Prices and Service Charges per tonne										
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
HUSKING UNIT PRODUCTS										
Broken Rice	30,000	33,000	36,300	39,930	43,923	48,315	53,147	58,462	64,308	70,738
Powder	12,500	13,750	15,125	16,638	18,301	20,131	22,145	24,359	26,795	29,474
Husk	5,875	6,463	7,109	7,820	8,602	9,462	10,408	11,449	12,594	13,853
RICE HUSKING SERVICES CHARGES	2,155	2,371	2,608	2,868	3,155	3,471	3,818	4,199	4,619	5,081
POLISHING UNIT PRODUCTS										
POLISHED SILKY RICE										
Basmati	87,500	96,250	105,875	116,463	128,109	140,920	155,012	170,513	187,564	206,320
Iri	48,000	52,800	58,080	63,888	70,277	77,304	85,035	93,538	102,892	113,181
POLISHED NON-SILKY RICE										
Basmati	73,000	80,300	88,330	97,163	106,879	117,567	129,324	142,256	156,482	172,130
Iri	45,000	49,500	54,450	59,895	65,885	72,473	79,720	87,692	96,461	106,108
POLISHED BROKEN RICE										
Basmati	35,000	38,500	42,350	46,585	51,244	56,368	62,005	68,205	75,026	82,528
Iri	29,000	31,900	35,090	38,599	42,459	46,705	51,375	56,513	62,164	68,380
BRAN	1,250	1,375	1,513	1,664	1,830	2,013	2,214	2,436	2,679	2,947
RICE POLISH SERVICE CHARGES	3,750	4,125	4,538	4,991	5,490	6,039	6,643	7,308	8,038	8,842
Revenue Generation										
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
HUSKING UNIT										
Broken Rice	1,533,168	1,816,214	2,140,538	2,511,565	2,935,392	3,418,868	3,969,686	4,596,478	5,056,126	5,561,738
Powder	248,430	294,294	346,847	406,967	475,642	553,983	643,236	744,800	819,280	901,208
Husk	1,050,859	1,244,864	1,467,161	1,721,469	2,011,966	2,343,349	2,720,889	3,150,503	3,465,553	3,812,108
RICE HUSKING SERVICE REVENUE	11,013,257	13,046,473	15,376,201	18,041,409	21,085,897	24,558,868	28,515,574	33,018,034	36,319,837	39,951,821
POLISHING UNIT										
POLISHED SILKY RICE										
Basmati	8,744,736	10,359,149	12,208,997	14,325,223	16,742,604	19,500,210	22,641,910	26,216,949	28,838,643	31,722,508
Iri	1,199,278	1,420,683	1,674,377	1,964,602	2,296,129	2,674,314	3,105,176	3,595,467	3,955,014	4,350,515
POLISHED NON-SILKY RICE										
Basmati	7,295,608	8,642,490	10,185,792	11,951,329	13,968,116	16,268,746	18,889,822	21,872,426	24,059,668	26,465,635
Iri	1,124,323	1,331,891	1,569,728	1,841,814	2,152,621	2,507,170	2,911,103	3,370,751	3,707,826	4,078,608
POLISHED BROKEN RICE										
Basmati	874,474	1,035,915	1,220,900	1,432,522	1,674,260	1,950,021	2,264,191	2,621,695	2,883,864	3,172,251
Iri	181,141	214,582	252,901	296,737	346,811	403,933	469,011	543,065	597,372	657,109
BRAN	39,039	46,246	54,504	63,952	74,744	87,055	101,080	117,040	128,744	141,618
RICE POLISH SERVICE REVENUE	23,164,830	27,441,414	32,341,667	37,947,555	44,351,205	51,656,110	59,978,483	69,448,770	76,393,647	84,033,011
TOTAL REVENUE	56,469,143	66,894,215	78,839,611	92,505,144	108,115,387	125,922,627	146,210,161	169,295,976	186,225,573	204,848,131



Raw material Calculation										
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Raw material required (tonnes)										
Basmati Paddy	80%	568	612	655	699	743	786	830	874	874
Irrigated Paddy	20%	114	122	131	140	149	157	166	175	175
Raw material Rate (Rs. / Ton)										
Basmati Paddy		35,000	38,500	42,350	46,585	51,244	56,368	62,005	68,205	75,026
Irrigated Paddy		22,000	24,200	26,620	29,282	32,210	35,431	38,974	42,872	47,159
		57,000	62,700	68,970	75,867	83,454	91,799	100,979	111,077	122,185
Raw material Total Price										
Basmati Paddy		15,899,520	18,834,816	22,198,176	26,045,860	30,441,099	35,454,927	41,167,109	47,667,179	52,433,897
Irrigated Paddy		2,498,496	2,959,757	3,488,285	4,092,921	4,783,601	5,571,488	6,469,117	7,490,557	8,239,612
Total Raw Material Cost		18,398,016	21,794,573	25,686,461	30,138,781	35,224,700	41,026,415	47,636,227	55,157,736	60,673,510

10 CONTACT DETAILS

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

10.1 Machinery Suppliers

Name of Supplier	Address	Phone / Fax	E-mail / Website
Junaid Agro Engineering	Gakkhar Mandi, 5 KM Aujla Pull. GT Road, Gujranwala	055-3885595, 0300-6460595	junaidagropk@gmail.com
Shoaib Industry	Nawab Chowk, G.T. Road, Gujranwala	055-3292941, 0300-8640841	
Muhafiz Industries	Maqbara Mor, Old G.T.Road, Shahdara, Lahore	042-37923558-9 042-35881129	mahafiz@brain.net.pk
Lasani Engineers	Plot # 1, St. 6, Sultan Park, Masoom Shah Railway Gate, Muridke	0300-6488200, 0332-6488200	lasaniengineers@gmail.com
New Allied Industries	Saeed Park, Behind Sahil Cinema, Shahdara More, Lahore	042-37933559, 37920577, 37910576 042-379630577	allied1@hotmail.com / www.alliedind.com.pk

10.2 Raw Material Suppliers

Raw Material for this project is normally purchased direct from rice cultivators / farmers and ghala mandies of different cities.

10.3 Technical Experts

Name	Address	Phone
Rice Research Institute	Grand Trunk Rd, Kala Shah Kaku, Lahore, Punjab	(042) 37951826
Rice Research Institute	Dhokri Sindh	

11 USEFUL WEB LINKS

Small & Medium Enterprises Development Authority (SMEDA)	www.smeda.org.pk
Government of Pakistan	www.pakistan.gov.pk
Ministry of Industries & Production	www.moip.gov.pk
Government of Punjab	www.punjab.gov.pk
Government of Sindh	www.sindh.gov.pk
Government of Khyber Pakhtunkhwa	www.khyberpakhtunkhwa.gov.pk
Government of Balochistan	www.balochistan.gov.pk
Government of Gilgit Baltistan	www.gilgitbaltistan.gov.pk
Government of Azad Jamu Kashmir	www.ajk.gov.pk
Trade Development Authority of Pakistan (TDAP)	www.tdap.gov.pk
Security Commission of Pakistan (SECP)	www.secp.gov.pk
Federation of Pakistan Chambers of Commerce and Industry (FPCCI)	www.fpcci.com.pk
State Bank of Pakistan (SBP)	www.sbp.org.pk
Punjab Small Industries Corporation (PSIC)	www.psic.gop.pk
Sindh Small Industries Corporation (SSIC)	www.ssic.gos.pk
Punjab Vocational Training Council (PVTC)	www.pvtc.gop.pk
Technical Education and Vocational Training Authority (TEVTA)	www.tevta.org
Punjab Industrial Estates (PIE)	www.pie.com.pk
Faisalabad Industrial Estate Development and Management Company (FIEDMC)	www.fiedmc.com.pk
Ministry of National Food Security and Research (MNFSR)	www.mnsfr.gov.pk
Pakistan Agriculture Research Council (PARC)	www.parc.gov.pk
National Agriculture Research Council (NARC)	www.narc.gov.pk
Agriculture University of Faisalabad (UAF)	www.uaf.edu.pk
Agri Punjab – Agriculture Department Government of Punjab	www.agripunjab.gov.pk
Sindh Small Industries Corporation	www.ssic.gos.pk
University of Agriculture Faisalabad	www.uaf.edu.pk

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	56,469,143	66,894,215	78,839,611	92,505,144	108,115,387	125,922,627	146,210,161	169,295,976	186,225,573	204,848,131
<i>Cost of sales</i>										
Iri and basmati paddy	18,398,016	21,794,573	25,686,461	30,138,781	35,224,700	41,026,415	47,636,227	55,157,736	60,673,510	66,740,861
Raw material transportation expense	283,920	336,336	396,396	465,105	543,591	633,124	735,127	851,200	936,320	1,029,952
Direct Labor	5,366,400	6,357,120	7,492,320	8,790,989	10,274,468	11,966,734	13,894,707	16,088,608	17,697,469	19,467,216
Machinery Maintenance	739,752	776,740	815,577	856,356	899,173	944,132	991,339	1,040,906	1,092,951	1,147,599
Direct Electricity	3,785,600	4,484,480	5,285,280	6,201,395	7,247,881	7,972,669	8,769,936	9,646,929	10,611,622	11,672,784
Generator diesel expense	2,197,000	2,602,600	3,067,350	3,599,024	4,206,359	4,626,995	5,089,695	5,598,664	6,158,531	6,774,384
Total cost of sales	30,770,688	36,351,849	42,743,384	50,051,649	58,396,173	67,170,068	77,117,030	88,384,043	97,170,402	106,832,795
Gross Profit	25,698,455	30,542,367	36,096,227	42,453,495	49,719,214	58,752,558	69,093,131	80,911,933	89,055,171	98,015,336
<i>General administration & selling expenses</i>										
Administration salaries	4,176,000	4,593,600	5,052,960	5,558,256	6,114,082	6,725,490	7,398,039	8,137,843	8,951,627	9,846,790
Electricity expense	274,560	302,016	332,218	365,439	401,983	442,182	486,400	535,040	588,544	647,398
Water expense	72,000	79,200	87,120	95,832	105,415	115,957	127,552	140,308	154,338	169,772
Gas expense	60,000	66,000	72,600	79,860	87,846	96,631	106,294	116,923	128,615	141,477
Travelling expense	417,600	459,360	505,296	555,826	611,408	672,549	739,804	813,784	895,163	984,679
Communications expense (phone, mail, internet, etc.)	156,000	171,600	188,760	207,636	228,400	251,240	276,364	304,000	334,400	367,840
Office vehicles repair and maintenance	180,000	198,000	217,800	239,580	263,538	289,892	318,881	350,769	385,846	424,431
Office expenses (stationary, entertainment, janitorial services, etc.)	626,400	689,040	757,944	833,738	917,112	1,008,823	1,109,706	1,220,676	1,342,744	1,477,018
Promotional expense	1,129,383	1,016,445	914,800	823,320	740,988	666,889	600,200	540,180	486,162	437,546
Depreciation expense	4,092,801	4,648,227	4,648,227	4,687,340	4,687,340	4,911,520	4,963,579	4,963,579	4,963,579	5,032,871
Amortization of pre-operating costs	828,058	828,058	828,058	828,058	828,058	-	-	-	-	-
Amortization of legal, licensing, and training costs	10,000	10,000	10,000	10,000	10,000	-	-	-	-	-
Subtotal	12,022,802	13,061,546	13,615,783	14,284,886	14,996,171	15,181,172	16,126,819	17,123,102	18,231,019	19,529,821
Operating Income	13,675,653	17,480,821	22,480,444	28,168,609	34,723,043	43,571,387	52,966,313	63,788,830	70,824,153	78,485,515
Other income (interest on cash)	300,853	694,072	1,614,292	2,985,726	4,837,738	7,379,114	10,881,249	16,001,052	22,769,369	33,743,301
Gain / (loss) on sale of office equipment	-	-	212,700	-	-	389,454	-	-	571,538	-
Gain / (loss) on sale of office vehicles	-	-	-	-	734,400	-	-	-	-	-
Earnings Before Interest & Taxes	13,976,506	18,174,893	24,307,437	31,154,335	40,295,181	51,339,954	63,847,561	79,789,883	94,165,060	112,228,816
Interest on short term debt	-	-	-	-	-	-	-	-	-	-
Interest expense on long term debt (Project Loan)	-	5,698,672	5,031,030	4,269,918	3,402,250	2,413,109	1,285,488	-	-	-
Interest expense on long term debt (Working Capital Loan)	850,282	-	-	-	-	-	-	-	-	-
Subtotal	850,282	5,698,672	5,031,030	4,269,918	3,402,250	2,413,109	1,285,488	-	-	-
Earnings Before Tax	13,126,224	12,476,220	19,276,407	26,884,417	36,892,931	48,926,845	62,562,073	79,789,883	94,165,060	112,228,816
Tax	3,816,678	3,589,176	5,969,242	8,632,045	12,135,025	16,346,895	21,119,225	27,148,958	32,180,270	38,502,585
NET PROFIT/(LOSS) AFTER TAX	9,309,546	8,887,044	13,307,165	18,252,371	24,757,906	32,579,950	41,442,848	52,640,925	61,984,790	73,726,231

12.2 Balance Sheet

Balance Sheet											
	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Assets											
<i>Current assets</i>											
Cash & Bank	3,436,911	4,084,417	13,267,380	27,089,932	47,553,221	73,390,223	111,087,624	160,943,590	239,082,718	330,151,515	513,431,010
Accounts receivable		4,641,299	5,069,727	5,989,061	7,041,565	8,244,679	9,618,001	11,183,539	12,966,006	14,610,475	16,071,522
Finished goods inventory		654,695	757,330	890,487	1,042,743	1,216,587	1,399,376	1,606,605	1,841,334	2,024,383	2,225,683
Equipment spare part inventory	123,292	129,457	135,929	142,726	149,862	157,355	165,223	173,484	182,158	191,266	-
Raw material inventory	18,398,016	21,794,573	25,686,461	30,138,781	35,224,700	41,026,415	47,636,227	55,157,736	60,673,510	66,740,861	-
Total Current Assets	21,958,219	31,304,441	44,916,828	64,250,987	91,012,091	124,035,260	169,906,451	229,064,954	314,745,726	413,718,500	531,728,216
<i>Fixed assets</i>											
Land	8,000,000	8,000,000	8,000,000	8,000,000	8,000,000	8,000,000	8,000,000	8,000,000	8,000,000	8,000,000	8,000,000
Building/Infrastructure	41,913,600	39,817,920	37,722,240	35,626,560	33,530,880	31,435,200	29,339,520	27,243,840	25,148,160	23,052,480	20,956,800
Machinery & equipment	14,795,045	18,314,376	16,279,445	14,244,515	12,209,584	10,174,653	8,139,723	6,104,792	4,069,861	2,034,931	-
Furniture & fixtures	322,500	290,250	258,000	225,750	193,500	161,250	129,000	96,750	64,500	32,250	-
Office vehicles	1,836,000	1,468,800	1,101,600	734,400	367,200	2,956,896	2,365,517	1,774,138	1,182,759	591,379	-
Office equipment	354,500	236,333	118,167	471,840	314,560	157,280	628,018	418,679	209,339	835,892	557,262
Total Fixed Assets	67,221,645	68,127,679	63,479,452	59,303,064	54,615,724	52,885,280	48,601,778	43,638,199	38,674,619	34,546,932	29,514,062
<i>Intangible assets</i>											
Pre-operation costs	4,140,290	3,312,232	2,484,174	1,656,116	828,058	-	-	-	-	-	-
Legal, licensing, & training costs	50,000	40,000	30,000	20,000	10,000	-	-	-	-	-	-
Total Intangible Assets	4,190,290	3,352,232	2,514,174	1,676,116	838,058	-	-	-	-	-	-
TOTAL ASSETS	93,370,154	102,784,353	110,910,454	125,230,167	146,465,873	176,920,540	218,508,229	272,703,153	353,420,345	448,265,432	561,242,277
Liabilities & Shareholders' Equity											
<i>Current liabilities</i>											
Accounts payable		2,268,249	2,687,002	3,166,824	3,715,740	4,342,771	5,058,051	5,872,959	6,800,269	7,480,296	8,228,325
Short term debt	-	-	-	-	-	-	-	-	-	-	-
Total Current Liabilities	-	2,268,249	2,687,002	3,166,824	3,715,740	4,342,771	5,058,051	5,872,959	6,800,269	7,480,296	8,228,325
<i>Other liabilities</i>											
Deferred tax		3,816,678	7,405,854	13,375,096	22,007,141	34,142,166	50,489,061	71,608,286	98,757,244	130,937,514	169,440,099
Long term debt (Project Loan)	35,705,968	40,704,803	35,935,930	30,499,415	24,301,788	17,236,493	9,182,057	-	-	-	-
Long term debt (Working Capital Loan)	10,979,110	-	-	-	-	-	-	-	-	-	-
Total Long Term Liabilities	46,685,077	44,521,481	43,341,784	43,874,511	46,308,929	51,378,659	59,671,118	71,608,286	98,757,244	130,937,514	169,440,099
<i>Shareholders' equity</i>											
Paid-up capital	46,685,077	46,685,077	46,685,077	46,685,077	46,685,077	46,685,077	46,685,077	46,685,077	46,685,077	46,685,077	46,685,077
Retained earnings		9,309,546	18,196,590	31,503,755	49,756,127	74,514,032	107,093,982	148,536,831	201,177,755	263,162,545	336,888,776
Total Equity	46,685,077	55,994,623	64,881,667	78,188,832	96,441,204	121,199,109	153,779,059	195,221,908	247,862,832	309,847,622	383,573,853
TOTAL CAPITAL AND LIABILITIES	93,370,154	102,784,353	110,910,454	125,230,167	146,465,873	176,920,540	218,508,229	272,703,153	353,420,345	448,265,432	561,242,277

12.3 Cash Flow Statement

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		9,309,546	8,887,044	13,307,165	18,252,371	24,757,906	32,579,950	41,442,848	52,640,925	61,984,790	73,726,231
Add: depreciation expense		4,092,801	4,648,227	4,648,227	4,687,340	4,687,340	4,911,520	4,963,579	4,963,579	4,963,579	5,032,871
amortization of pre-operating costs		828,058	828,058	828,058	828,058	828,058	-	-	-	-	-
amortization of training costs		10,000	10,000	10,000	10,000	10,000	-	-	-	-	-
Deferred income tax		3,816,678	3,589,176	5,969,242	8,632,045	12,135,025	16,346,895	21,119,225	27,148,958	32,180,270	38,502,585
Accounts receivable		(4,641,299)	(428,428)	(919,334)	(1,052,504)	(1,203,114)	(1,373,321)	(1,565,539)	(1,782,466)	(1,644,469)	(1,461,047)
Finished goods inventory		(654,695)	(102,635)	(133,157)	(152,256)	(173,844)	(182,789)	(207,228)	(234,729)	(183,049)	(201,300)
Equipment inventory	(123,292)	(6,165)	(6,473)	(6,796)	(7,136)	(7,493)	(7,868)	(8,261)	(8,674)	(9,108)	191,266
Raw material inventory	(18,398,016)	(3,396,557)	(3,891,888)	(4,452,320)	(5,085,919)	(5,801,715)	(6,609,811)	(7,521,509)	(5,515,774)	(6,067,351)	66,740,861
Accounts payable		2,268,249	418,754	479,822	548,916	627,031	715,280	814,908	927,309	680,027	748,030
Cash provided by operations	(18,521,308)	11,626,615	13,951,836	19,730,906	26,660,916	35,859,194	46,379,855	59,038,023	78,139,128	91,904,689	183,279,496
<i>Financing activities</i>											
Project Loan - principal repayment		-	(4,768,873)	(5,436,515)	(6,197,627)	(7,065,295)	(8,054,436)	(9,182,057)	-	-	-
Working Capital Loan - principal repayment		(10,979,110)	-	-	-	-	-	-	-	-	-
Short term debt principal repayment		-	-	-	-	-	-	-	-	-	-
Additions to Project Loan	35,705,968	-	-	-	-	-	-	-	-	-	-
Additions to Working Capital Loan	10,979,110	-	-	-	-	-	-	-	-	-	-
Issuance of shares	46,685,077	-	-	-	-	-	-	-	-	-	-
Cash provided by / (used for) financing activities	93,370,154	(10,979,110)	(4,768,873)	(5,436,515)	(6,197,627)	(7,065,295)	(8,054,436)	(9,182,057)	-	-	-
<i>Investing activities</i>											
Capital expenditure	(71,411,935)	-	-	(471,840)	-	(2,956,896)	(628,018)	-	-	(835,892)	-
Acquisitions											
Cash (used for) / provided by investing activities	(71,411,935)	-	-	(471,840)	-	(2,956,896)	(628,018)	-	-	(835,892)	-
NET CASH	3,436,911	647,506	9,182,963	13,822,552	20,463,289	25,837,002	37,697,401	49,855,966	78,139,128	91,068,797	183,279,496

13 KEY ASSUMPTIONS

13.1 Operating Cost Assumptions

Description	Details
Machinery Maintenance	5% of Machinery Cost
Raw Material Transportation Cost	Rs. 500 per Ton
Office Expenses (Janitorial Services, Stationery, Entertainment etc)	15% of Administration Expenses
Communication Expenses	5% of Administration Cost
Office Vehicle Repair and Maintenance	180,000 Per Year
Promotional Expenses	2% of Revenues
Water Expenses	Rs. 72,000 Per Annum
Gas Expenses	Rs. 60,000 Per Annum
Operating Expense Growth Rate	5%
Depreciation Method	Straight Line
Depreciation Rate	10% on Plant & Machinery 5% on Building & Infrastructure

13.2 Production and Revenue Assumptions

Description	Details
Cost of Goods Sold Growth Rate	10%
Growth in Sales Price	10%
Days Operational / Year	312
Days Operational for Husking / Year	182
Days Operational Polishing / Year	312
Per Day Husking Capacity	48 Tons
Per Day Polishing Capacity	32 Tons
Sale Price per Unit in Year 1	73
Hours Operational / Day	16
No of Shifts	2
Production Capacity Utilization in First Year	65%
Percentage Increase in Production Capacity every Year	5%
Maximum Production Capacity Utilization	100%

13.3 Financial Assumptions

Description	Details
Debt	50%
Equity	50%
Interest Rate on Debt	14%
Debt Tenure	7 Years
Debt Payments / Year	12
Inflation Growth Rate	10%
Electricity Price Growth Rate	10%
Salaries Growth Rate	10%

