

Pre-Feasibility Study

RICE HUSKING & POLISHING UNIT



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1 INTRODUCTION

1.1 Project Brief

The study provides information regarding investment opportunity for setting up a rice husking and polishing unit in Pakistan, especially in the area of Lahore, Gujranwala, Hafizabad and Sialkot districts.

Rice is consumed as a major food item after wheat. Rice is an important Kharif¹ crop, which is grown on a large irrigated area in Pakistan. The objective of this document is to provide information about investment opportunity for setting up a Rice Husking & Polishing Unit.

Rice is grown on irrigated areas of all the four provinces of Pakistan. The rice crop is sown in the months of June/July and harvested in September/October. The crop needs a fertile land and a heavy fertilizer for getting good yields.

Rice is a high water-intensive crop. It needs flood irrigation during the entire season. There are different varieties of rice crop, which differ in tastes and aromas. Two main species of rice, i.e. Basmati and Irri, are most commonly grown in Pakistan. The average yield of rice is 14 maunds (40 kg) per acre for Basmati and 29 maunds (83 kg) per acre for Irri rice. Basmati is considered to be the most superior variety of rice.

Table 1-1 H.S Codes of Rice

| Sr. # | H.S Codes | Product |
|-------|--------------|--|
| 1 | HS 02-100630 | Semi Milled/Wholly Milled Rice, Whether or not polished/Glazed |
| 2 | HS 02-100620 | Husked (Brown) Rice |
| 3 | HS 02-100610 | Rice in the Husk (Paddy/Rough) |
| 4 | HS02-110230 | Rice Flour |

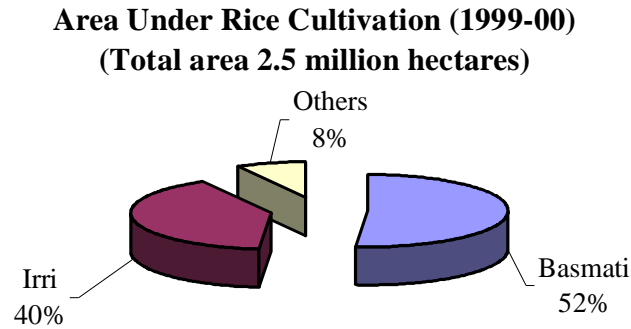
1.2 Opportunity Rationale

Pakistan's second largest staple food crop, rice, is a source of foreign exchange earnings. At the end of the eighties, Pakistan followed the USA and Thailand as the third largest rice exporting country in the world. The long grain sweet smelling rice called basmati is grown only in parts of Pakistan. The peculiar soil, climate and farming techniques combine to produce this world-renowned variety of rice, which is a gourmet's dream. Basmati rice is now available in most super markets in all over the world.

The demand for polished rice is increasing in the export market and there is still shortage of modern rice processing mills that can produce branded rice of the required quality.

Pakistan produces good quality rice in the world. Basmati rice is the most delicious variety of rice produced in Pakistan. The proximity of Middle East market has enabled Pakistan's rice to compete with the International rice. The market for coarse rice i.e. Irri is decreasing in the Middle East as the consumer preferences have changed in Saudi Arabia and other Arab countries towards the quality Basmati rice. Basmati fetch highest unit price per ton in the international market.

¹ Summer crop (sown in summer)

Figure 1-1 Variety-wise Distribution of Area under Rice Cultivation (in Pakistan)**Table 1-2 District wise Area and Production of Rice Crop²**

| District / Province | Area in '000' Hectares | | (Production in '000' Tones) | |
|---------------------|------------------------|-----------|-----------------------------|-----------|
| | 2003-2004 | 2004-2005 | 2003-2004 | 2004-2005 |
| Panjab | 1687.9 | 1754.3 | 2871.4 | 2980.3 |
| Sindh | 551.2 | 543.9 | 1432.8 | 1499.7 |
| N.W.F.P | 61.7 | 59.9 | 130.8 | 123.2 |
| Balochistan | 159.8 | 161.5 | 412.6 | 421.6 |
| Pakistan | 2460.6 | 2519.6 | 4847.6 | 5024.8 |

Table 1-3 District wise Area of Rice Crop by Varieties:

| District / Province | 2003-2004 | | | | 2004-2005 | | | |
|---------------------|-----------|-------|--------|--------|-----------|-------|--------|--------|
| | Basmati | Irri. | Others | Total | Basmati | Irri | Others | Total |
| Panjab | 1426.1 | 138.0 | 123.8 | 1687.9 | 1466.5 | 108.1 | 179.7 | 1754.3 |
| Sindh | 0.00 | 495.3 | 55.9 | 551.2 | 0.0 | 485.0 | 58.9 | 543.9 |
| N.W.F.P | 14.1 | 18.5 | 29.1 | 61.7 | 13.4 | 14.6 | 31.9 | 59.9 |
| Balochistan | 80.3 | 66.0 | 13.5 | 159.8 | 78.5 | 70.1 | 12.9 | 161.5 |
| Pakistan | 1520.5 | 717.8 | 222.3 | 2460.6 | 1558.4 | 677.8 | 283.4 | 2519.6 |

² Agriculture Statistics of Pakistan

1.3 Proposed Capacity

The husking unit is assumed to operate on 60% capacity utilization in the first year. The unit will process 48 tons per day of paddy during seven months of operations.³ The rice-polishing unit will also operate on 60% capacity utilization in the first year and will process 32 tons of polished rice for the year⁴.

1.4 Project Cost

The approximate cost of the proposed project is worked out to be Rs 69.79 million.

2 CURRENT INDUSTRY STRUCTURE

Rice industry is growing over the last three decades with an increasing demand of processed rice in local as well as in export market. The rice mills have increased from 170 units in 1986 to 208 units in 1991. More than 50% of these units are integrated i.e. complete unit with both husking and polishing facilities. The major market of the processed rice is the export market of Middle East. The cluster of rice processing mills is present in major rice producing belts in Punjab. Most of the mills are located in Lahore, Gujranwala, Hafizabad and Sialkot districts.

2.1 Major Players

Major players in the rice processing industry are located in Lahore, Gujranwala and Hafizabad districts. With the development of the rice processing industry, the export and local market is progressing towards the branded rice. A large number of major players in the industry are selling branded rice like Guard Rice, Flora Rice, Roberts Rice, etc.

3 MARKETING

3.1 Local Market

3.1.1 Size

Rice is the second largest food item of the Pakistani households after wheat flour. During the last decade, the production of rice in Pakistan has been around 5 million tons per annum. Around 2.9 millions tons of rice is available for domestic consumption of Pakistan. The per capita availability of rice in Pakistan is 20.78 kg.

Pakistan has scattered population of rice eating people throughout the country. In most of the urban and rural areas of the Punjab, people eat rice at least once a week. In Azad Kashmir, the entire households consume rice in their daily meals. In Sindh province, particularly Karachi, people eat rice 3-4 times a week.

3.1.2 Market Segments

According to buying power of the rice consumers, the market for rice can be broadly categorized into three major groups.

Lower income group, includes people with income level of less than Rs 3,000 per month. The majority of this segment is looking for purchasing cheap rice. This segment is

³ Husking Plant will operate on basis of 2 shifts of 8 hours each.

⁴ Polishing Plant will operate on basis of 2 shift of 8 hours.

the major market of broken rice and Irri rice. The price of broken rice is almost equivalent to the wheat prices.

Middle income group, includes middle and upper income households in the urban areas with monthly income of Rs 5000-10,000. This segment purchases good quality rice (polished rice as well as semi-polished rice)

Upper income group includes the upper income segment of the society, they prefer to buy high quality branded rice. The hotels and restaurants also purchase polished and semi polished rice for their different dishes.

3.2 International Market

Total world rice exports market is \$ 8.2 billion during 2005.

Table 3-1 World Rice Exports

| Period | Trade Value |
|--------|-----------------|
| 2005 | \$8,259,369,423 |
| 2004 | \$8,027,936,380 |

3.2.1 Major Exporters of Rice

Thailand is the largest rice exporter with exports of over \$6 billion during 2005. Pakistan comes on the 3rd position in the international rice export market with exports of \$2.4 Billion during 2004-2005.

Following are the major exporters of the rice in the world for the year 2005

Table 3-2 Leading Exporters⁵

| Country | Export Value |
|---------------------------|-----------------|
| Thailand | \$6,843,253,020 |
| USA | \$4,265,661,138 |
| Pakistan | \$2,414,835,068 |
| India | \$2,374,208,529 |
| Italy | \$1,388,750,346 |
| Other Exporting Countries | \$5,079,750,922 |

3.2.2 Major Rice Importers

European Union is the largest importer of rice along with Japan and United Kingdom with their rice imports \$1.136 and \$1.09 billion respectively during 2005.

Table 3-3 Leading Importers⁶

| Country | Import Value |
|---------|-----------------|
| EU-25 | \$1,407,986,556 |
| Japan | \$1,136,022,328 |
| UK | \$1,109,057,025 |
| France | \$1,065,082,691 |

⁵ United Nations Statistical Division. (www.Unstats.un.org)

⁶ United Nations Statistical Division. (www.Unstats.un.org)

| | |
|---------------------------|------------------|
| USA | \$977,961,064 |
| Other Importing Countries | \$13,787,494,884 |

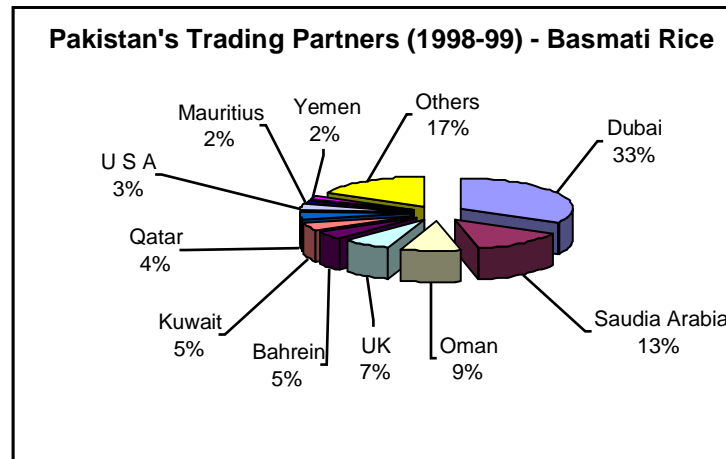
3.2.3 Exports Trend of Pakistan

Rice exports from Pakistan have showed a fluctuating trend in terms of value due to change in rice prices in the international market. Rice is the third largest export item of Pakistan. Rice exports from Pakistan were \$1.099 Billion during the year 2004-2005. The exports of rice have been fluctuating during the last three years due to price fluctuation in the international market.

3.2.4 Pakistan's Trading Partners

Major shares of Pakistani rice exports go to Middle East, which accounts for 71% of the total rice exports from Pakistan. The major chunk of Pakistan rice exports is dominated by Basmati rice.

Figure 3-1 Pakistan Trading Partners



3.3 Unit Price Analysis

The unit price of rice exported from Pakistan shown a fluctuating trend. Lack of grading, branding and proper packing are the major impeding factors in the increase of unit price of Pakistani rice.

Table 3-4 Unit Prices⁷

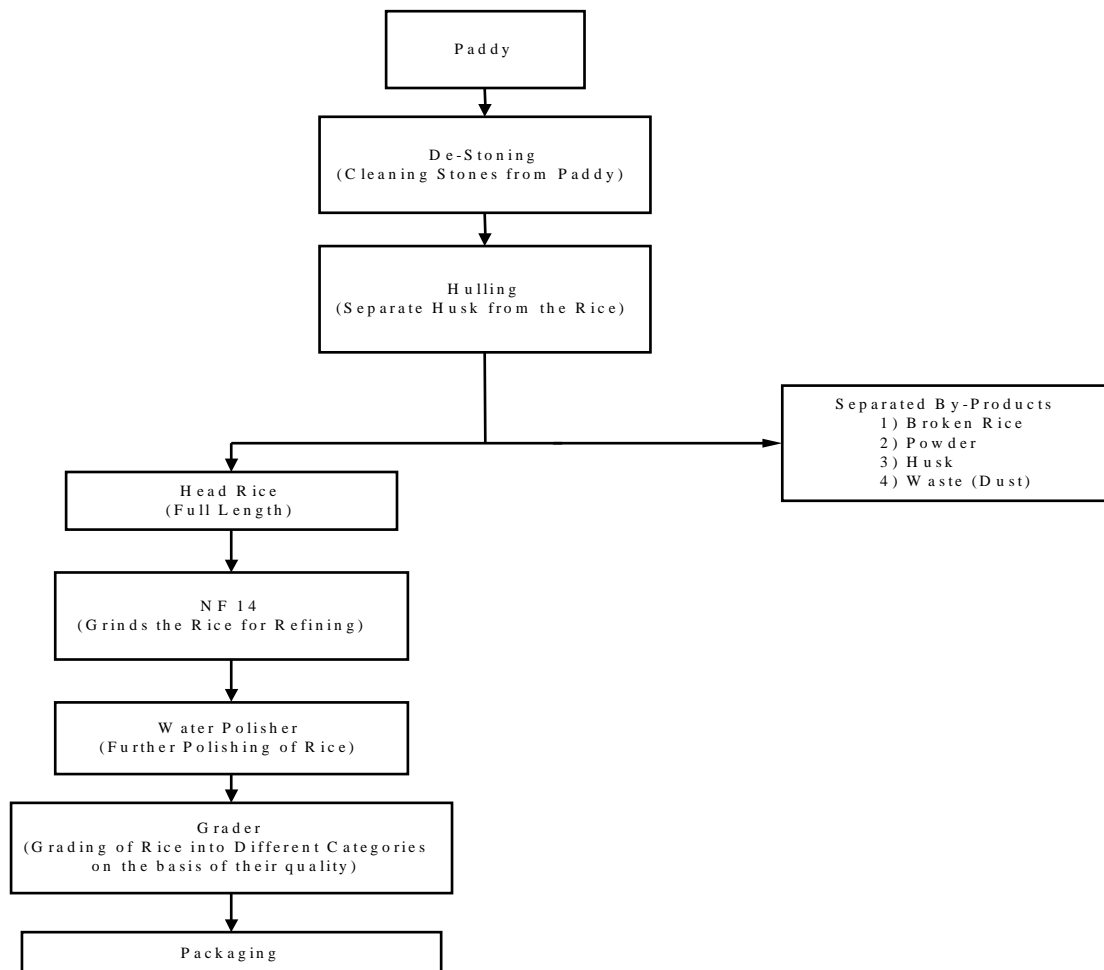
| Description | 2003 | 2004 | 2005 |
|----------------------|-------|-------|-------|
| Value(Billion \$) | 0.632 | 0.682 | 1.099 |
| Quantity(Billion Kg) | 1.8 | 1.9 | 3.4 |
| Unit Price (\$/Ton) | 351 | 359 | 323 |

⁷ United Nations Statistical Division. (www.Unstats.un.org)

4 RAW MATERIALS

The raw material of the husking unit is paddy, obtained from rice harvesting. The paddy can be purchased from the local grain market (Mandi) as well as directly from the farmers on cash basis. The paddy-harvesting season starts in mid of September and ends in December. The paddy husking is a seasonal process and is limited to only seven months after the harvesting of rice crop. The husking operations start in November and end in May. It is assumed that the polishing plant will work throughout the year, in first 7 seven months the entrepreneur will polish (process) in house rice later it will polish the unpolished rice that is available in markets. By this a plant can be run throughout the year.

Figure 4-1 Production Process Flow



4.1 Rice Husking

Rice husking unit will use the paddy as raw material. Husking is the process of separating the rice from the husk. Rubber roll and hullers are used to shatter the paddy to produce rice. Different processes are used for separation of head rice, broken rice, rice powder, dust & bran.

4.2 Polishing Unit

Rice polishing unit will use the brown rice (head/broken rice) for cleaning and polishing. Various types of cleaners/polishers are used to give shining and silkiness to the rice.

The husking of paddy produces different products, including 53% head rice, 10% broken rice, 2.5% powder rice, 33.50% husk and 1.00% waste & dust particles.

The rice-polishing unit processes the head rice (brown rice) to make different value added rice products like silky and non-silky rice.

The operations of a polishing unit are spread over a period of eight months. In the current industrial practice, both the husking and polishing units are not operated at one time due to certain reasons. After the husking operation, the brown rice requires a time of six to ten weeks for the drying and conditioning. So, the brown rice is stored for a period of at least two months before taking it to the polishing process. For the purpose of this report major portion of head rice (brown rice) will be supplied from in-house husking unit while rest will be purchased from the local market. The processed rice (both brown rice and polished rice) will be stored during the first few months of harvesting season, as the prices are generally lower due to oversupply of rice in the market.

5 MACHINERY & EQUIPMENT

5.1 Details of Husking Machines

Majority of the machinery required for husking and polishing unit is manufactured locally apart from few items like SM and NF machine, which are used for refining the rice. Machinery can also be imported from China at cheaper rates compared to those from Japan or Korea. The major machinery components of the rice husking mill 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. It's better to purchase S.M.18 and NF 14 machines from China and other from local market. The local market manufacturers are supplying the China made S.M. 18 and NF 14 along with other machinery components.

Table 5-1 Husking Machinery Details⁸⁹

| Husking Plant Machines | Quantity | Rate(Rs.) | Amount/other (Rs) |
|-------------------------------|----------|-----------|-------------------|
| Pre cleaner PH 40 type 5'x10' | 2 | 125,000 | 250,000 |
| Paddy Husker (pneumatic) | 2 | 175,000 | 350,000 |
| Husk Cleaner | 1 | 35,000 | 35,000 |

⁸ Machinery Prices has been quoted by Muhafiz industries, Maqbara Morr, old Gt road, Shahdara, Lahore. Ph: 042-7923998-9

⁹ These prices does not include sales tax

| | | | |
|--------------------------------------|----|---------|-----------|
| Husk Blower 7' | 1 | 60,000 | 60,000 |
| Pre cleaner half portion 5' x 10' | 1 | 85,000 | 85,000 |
| Paddy Separator 90comp | 1 | 325,000 | 325,000 |
| Polisher SM-18 (China made) | 2 | 110,000 | 220,000 |
| Polisher NF-14(China made) | 2 | 110,000 | 220,000 |
| Rice grader 3 stage 5' x 10' | 1 | 235,000 | 235,000 |
| Length grader | 2 | 68000 | 136,000 |
| Width grader | 1 | 100,000 | 100,000 |
| Elevator 10"x 30' comp | 1 | 42000 | 42,000 |
| Elevator 10"x 25' comp | 13 | 36,000 | 468,000 |
| Pipe Line 18, 22 gauge | 1 | 75,000 | 75,000 |
| Steel structure with wooden platform | 1 | 130,000 | 130,000 |
| Dust blower with ducting | 1 | 50,000 | 50,000 |
| Cyclone 3.5' dia | 1 | 18,000 | 18,000 |
| Blower for bran 25" impeller | 1 | 25,000 | 25,000 |
| Total | | | 2,824,000 |
| Fitting charges | | | 150,000 |
| Total Cost of the Husking Plant | | | 2,974,000 |

5.2 Details of Rice Processing (Polishing) Machines

Major machinery required for rice polishing is also manufactured locally. It is being manufactured at towns of Daska, Jalalpur Bhatian, Gujranwala and Lahore. Modern machinery can also be imported from China, Japan, Germany and Korea. It is recommended for the proposed project to use NF-14, S.M. 18 and Paddy separator from China and other machinery components from local market.

Table 5-2 Polishing Machinery Details

| Rice Polishing Machines | Qty | Unit Price | Total |
|--|-----|------------|-----------|
| Combi cleaner with blower | 1 | 105,000 | 105,000 |
| Paddy Separator (China made) | 2 | 95,000 | 190,000 |
| Width grader | 2 | 100,000 | 200,000 |
| De-Stoner (satake type, with blower) | 1 | 120,000 | 120,000 |
| Polisher SM-18 (China made) | 2 | 110,000 | 220,000 |
| Polisher NF-14 (China made) | 2 | 110,000 | 220,000 |
| Water polisher (with Auto sensor & blower) | 2 | 250,000 | 500,000 |
| Rice grader 3 stage 5'x10' | 1 | 260,000 | 260,000 |
| Length grader (28" x 100") | 6 | 105,000 | 630,000 |
| Elevator 10"x36' | 20 | 55,500 | 1,110,000 |

| | | | |
|--|----|---------|-----------|
| Pipe Line 18, 22 gauge | 1 | 100,000 | 100,000 |
| Steel structure with platform | 1 | 175,000 | 175,000 |
| Dust blower 25" with pipe line | 1 | 65,000 | 65,000 |
| Blower for polishers bran 25" | 1 | 25,000 | 25,000 |
| Blower with aspiration screen (for color sorter) | 1 | 40,000 | 40,000 |
| Holding Bin 10' x 10' | 3 | 145,000 | 435,000 |
| Feeding Tank for Color sorter | 1 | 15,000 | 15,000 |
| Feeding Tank | 11 | 85,000 | 935,000 |
| Cyclone 2.5' | 4 | 16000 | 64,000 |
| Cyclone 3' | 4 | 20,000 | 80,000 |
| Fitting charges | | | 150,000 |
| Total Cost of Polishing Plant | | | 5,639,000 |

Table 5-3 Furniture & Fixtures

| Furniture & Fixtures | Qty | Unit cost | Total |
|----------------------|-----|-----------|---------|
| Desks / Workstations | 5 | 7000 | 35,000 |
| Office Chairs | 10 | 4500 | 45,000 |
| Visitor Chairs | 14 | 4500 | 63,000 |
| Small Cabinet | 7 | 3500 | 24,500 |
| Stool | 5 | 2000 | 10,000 |
| Bench | 5 | 2500 | 12,500 |
| Miscellaneous | | | 10,000 |
| Total | | | 200,000 |

Table 5-2 Office Equipment

| Office Equipment | Qty | Unit cost | Total |
|----------------------|-----|-----------|---------|
| Computer P4 | 3 | 50,000 | 150,000 |
| UPS | 3 | 7,000 | 21,000 |
| Air Conditioners | 1 | 40,000 | 40,000 |
| Printer | 1 | 30,000 | 30,000 |
| Scanner | 1 | 10,000 | 10,000 |
| Fax Machine | 1 | 15,000 | 15,000 |
| Telephone Sets | 6 | 1500 | 9,000 |
| Photocopying Machine | 1 | | 100,000 |
| Total | | | 375,000 |

6 HUMAN RESOURCE REQUIREMENT

6.1 Proposed Setup

During husking season, the skilled labor is required for drying the paddy, loading and unloading of paddy bags. For a husking plant with processing capacity of 3.00 tons per hour, about 60 workers are required for six months of operations.

During first year of polishing season, 8 un-skilled workers are required for weighing, bagging and stacking of rice bags.

Table 6-1 Human Resource Requirement

| Description | No of Staff | Monthly Salary | Annual Salary in (Rs) |
|---|-------------|----------------|-----------------------|
| Administrative & Marketing Staff | | | |
| CEO | 1 | 50,000 | 600,000 |
| Accounts Manager | 1 | 20,000 | 240,000 |
| Accounts Officer | 1 | 6000 | 72,000 |
| Office Boys | 2 | 4,000 | 96,000 |
| Security Guards | 2 | 4,500 | 108,000 |
| Marketing manager | 1 | 20,000 | 240,000 |
| Export Documentation Officer | 1 | 12,000 | 144,000 |
| Total Admin & Marketing Salaries | | | 1,500,000 |
| Production Staff | | | |
| Foreman | 1 | 10,000 | 120,000 |
| Helper | 2 | 5,000 | 120,000 |
| unskilled workers | 8 | 4,000 | 384,000 |
| Seasonal Paddy workers | 60 | 4,500 | 1,620,000 |
| Total Direct Salaries | | | 2,244,000 |
| Total Salaries | | | 3,744,000 |

7 PRODUCTION

7.1 Products of Husking Unit

The products produced from the husking unit include, Head Rice, Broken Rice, Powder and Husk in the following proportion:

Figure 7-1 Details of Different Products of Husking Unit

| Product Mix | Percentage |
|---------------|------------|
| Polished Rice | 53% |
| Broken rice | 10% |
| Powder | 2.50% |

| | |
|-------|--------|
| Husk | 33.50% |
| Trash | 1.00% |

Table 7-1 Details of Different Products of Polishing Unit

| Product mix of polishing unit | Percentage |
|-------------------------------|------------|
| Polished silky rice | 40% |
| Polished non silky rice | 40% |
| Polished broken rice | 10% |
| Bran | 10% |
| Polished rice | 100% |

8 LAND & BUILDING REQUIREMENT

8.1 Location

The most important factor for setting up a rice unit is accessibility to raw material. So, it should be set up in areas, where rice is grown. It is recommended that the unit should be located on the main road. The area should have basic infrastructure available, like electricity, water, gas, etc.

8.2 Recommended mode of acquiring land

The covered area of 31,800 square feet consists of the machinery hall, management building and stores. It is recommended to purchase land for setting up this project as the amount of capital spend on infrastructure and other costs is high and it is not advisable to spend so much money on leased or rented area.

The total land (including covered area and the grounds) needed is around 4 acres, the approximate price per acre is Rs 1,500,000.

Table 8-1 Total Land Requirement & Building Covered Area

| Land Cost | Area (sq ft) | Kanal |
|----------------|-----------------|-----------|
| Required Land | 144,000(4 Acre) | 32 |
| Rate per kanal | | 187,500 |
| Total cost | | 6,000,000 |

8.3 Covered Area Requirement

The majority of area will be open, as it will be used for drying the rice. The detail of the covered space required is given below:

Table 8-2 Covered Area Details

| Description | Area in sq. ft | Per unit cost | Total const. cost |
|---------------------|----------------|---------------|-------------------|
| Management building | 2,500 | 650 | 1,625,000 |

| | | | |
|---|---------|----------------------------|------------|
| Paddy storage1 | 6,500 | 600 | 3,900,000 |
| paddy storag2 | 4,500 | 600 | 2,700,000 |
| Brown Rice Hall | 5,000 | 600 | 3,000,000 |
| Processing Hall | 3,000 | 650 | 1,950,000 |
| Processed Brown Rice Godown | 4,500 | 600 | 2,700,000 |
| Weighting And Packing | 1,000 | 600 | 600,000 |
| Packed rice godown | 4,800 | 600 | 2,880,000 |
| Total covered area | 31,800 | | 1,548,400 |
| Free space | 112,200 | 8% of total const. cost | 123,872 |
| Boundary Wall (4 acres perimeter, 9 ft high) | | 200 | 332,000 |
| Total Required Area | 144,000 | | 21,359,272 |

9 PROJECT ECONOMICS

Table 9-1 Project Cost

| Project Summary | Total Cost |
|--------------------------------------|-------------------------|
| Land | 6,000,000 |
| Building | 21,359,272 |
| Plant and Machinery | 9,859,950 ¹⁰ |
| Furniture an Fixture | 200,000 |
| Office Equipment | 375,000 |
| Vehicles ¹¹ | 2,039,000 |
| Pre operating Expenses ¹² | 770,000 |
| Contingencies | 106,890 |
| Initial working Capital | 29,086,402 |
| Total Project Costs | 69,796,514 |

Table 9-2 Project Economics

| | | |
|-----------------|------|------------|
| Bank | 40% | 27,918,606 |
| Equity | 60% | 41,877,908 |
| Total Financing | 100% | 69,796,514 |

Table 9-3 Project Economics

| | | |
|-----------------|------|-------------|
| Project Return | | |
| IRR | % | 64% |
| Pay Back period | Yrs. | 2.54 |
| NPV | Rs. | 309,603,813 |

¹⁰ Total machinery cost includes sales tax of 15% of Machinery Cost

¹¹ Liana at Rs.839,000

Mazda truck at Rs. 1,200,000

¹² These expenses are incurred before the unit is operational, e.g. salaries of key personnel for 1 month, stationery, company formation expenses, legal and registration, etc.

10 FINANCIAL STATEMENTS

10.1 Income statement

| Projected Income Statement | | | | | | | | | | |
|--|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|----------------------|----------------------|
| Years | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 | Year 7 | Year 8 | Year 9 | Year 10 |
| Sales | 201,648,324 | 235,182,441 | 274,293,281 | 319,908,253 | 435,157,022 | 435,157,022 | 507,523,634 | 591,924,815 | 656,268,299 | 715,332,411 |
| CGS | 147,342,265 | 165,539,014 | 185,983,059 | 208,951,942 | 234,757,479 | 263,749,997 | 296,323,087 | 332,918,952 | 355,562,758 | 373,340,999 |
| Wages and salaries | 2,244,000 | 2,468,400 | 2,715,240 | 2,986,764 | 3,285,440 | 3,613,984 | 3,975,383 | 4,372,921 | 4,810,213 | 5,291,213 |
| Electricity | 1,200,000 | 1,320,000 | 1,452,000 | 1,597,200 | 1,756,920 | 1,932,612 | 2,125,873 | 2,338,461 | 2,572,307 | 2,829,500 |
| Sui Gass | 96,000 | 105,600 | 116,160 | 127,776 | 140,554 | 154,609 | 170,070 | 187,077 | 205,785 | 226,300 |
| Repair and Maintenance | 197,199 | 207,059 | 217,412 | 228,282 | 239,697 | 251,681 | 264,266 | 277,479 | 291,353 | 305,920 |
| Depreciation | 985,995 | 985,995 | 985,995 | 985,995 | 985,995 | 985,995 | 985,995 | 985,995 | 985,995 | 985,995 |
| Cost of Sales | 152,065,459 | 170,626,068 | 191,469,866 | 214,877,959 | 241,166,084 | 270,688,878 | 303,844,674 | 341,080,884 | 364,428,411 | 382,980,000 |
| Gross Profit | 49,582,865 | 64,556,373 | 82,823,415 | 105,030,294 | 193,990,938 | 164,468,143 | 203,678,960 | 250,843,931 | 291,839,889 | 332,352,411 |
| Administrative & Selling salary | 1,500,000 | 1,650,000 | 1,815,000 | 1,996,500 | 2,196,150 | 2,415,765 | 2,657,342 | 2,923,076 | 3,215,383 | 3,536,920 |
| Telephone & telex | 120,000 | 132,000 | 145,200 | 159,720 | 175,692 | 193,261 | 212,587 | 233,846 | 257,231 | 282,920 |
| Printing & stationery | 60,000 | 66,000 | 72,600 | 79,860 | 87,846 | 96,631 | 106,294 | 116,923 | 128,615 | 141,414 |
| Legal & professional charges | 50,000 | 55,000 | 60,500 | 66,550 | 73,205 | 80,526 | 88,578 | 97,436 | 107,179 | 117,830 |
| Insurance | 3,624,600 | 3,265,878 | 2,907,156 | 2,548,433 | 2,189,711 | 1,830,989 | 1,472,267 | 1,113,544 | 754,822 | 396,100 |
| Entertainment | 60,000 | 66,000 | 72,600 | 79,860 | 87,846 | 96,631 | 106,294 | 116,923 | 128,615 | 141,414 |
| Depreciation on Motor Vehicles | 407,800 | 407,800 | 407,800 | 407,800 | 407,800 | 407,800 | 407,800 | 407,800 | 407,800 | 407,800 |
| Depreciation on Building | 2,135,927 | 2,135,927 | 2,135,927 | 2,135,927 | 2,135,927 | 2,135,927 | 2,135,927 | 2,135,927 | 2,135,927 | 2,135,927 |
| Depreciation on Furniture & Office equipment | 57,500 | 57,500 | 57,500 | 57,500 | 57,500 | 57,500 | 57,500 | 57,500 | 57,500 | 57,500 |
| Traveling & conveyance | 300,000 | 330,000 | 363,000 | 399,300 | 439,230 | 483,153 | 531,468 | 584,615 | 643,077 | 707,300 |
| Amortization | 175,378 | 175,378 | 175,378 | 175,378 | 175,378 | - | - | - | - | - |
| Others | 100,000 | 110,000 | 121,000 | 133,100 | 146,410 | 161,051 | 177,156 | 194,872 | 214,359 | 235,700 |
| Operating Expenses | 8,591,205 | 8,451,483 | 8,333,661 | 8,239,929 | 8,172,695 | 7,959,233 | 7,953,212 | 7,982,462 | 8,050,509 | 8,161,213 |
| Operating Profit | 40,991,660 | 56,104,890 | 74,489,754 | 96,790,366 | 185,818,242 | 156,508,910 | 195,725,748 | 242,861,469 | 283,789,380 | 324,191,191 |
| Less: | | | | | | | | | | |
| Financial expenses | 3,770,271 | 3,163,682 | 2,469,197 | 1,674,082 | 763,755 | - | - | - | - | - |
| | 3,770,271 | 3,163,682 | 2,469,197 | 1,674,082 | 763,755 | - | - | - | - | - |
| Profit Before Taxation | 37,221,389 | 52,941,208 | 72,020,557 | 95,116,283 | 185,054,487 | 156,508,910 | 195,725,748 | 242,861,469 | 283,789,380 | 324,191,191 |
| Income Tax | 7,444,278 | 10,588,242 | 14,404,111 | 19,023,257 | 37,010,897 | 31,301,782 | 39,145,150 | 48,572,294 | 56,757,876 | 64,838,213 |
| Net profit After Taxation | 29,777,111 | 42,352,967 | 57,616,445 | 76,093,027 | 148,043,590 | 125,207,128 | 156,580,598 | 194,289,175 | 227,031,504 | 259,352,978 |
| Retained earnings | - | 29,777,111 | 72,130,078 | 129,746,523 | 205,839,550 | 353,883,140 | 479,090,268 | 635,670,867 | 829,960,041 | 1,056,991,545 |
| Profit transferred to balance sheet | 29,777,111 | 72,130,078 | 129,746,523 | 205,839,550 | 353,883,140 | 479,090,268 | 635,670,867 | 829,960,041 | 1,056,991,545 | 1,316,344,411 |

10.2 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 |
| Operating activities | | | | | | | | | | |
| Net profit | - | 29,777,111 | 42,352,967 | 57,616,445 | 76,093,027 | 148,043,590 | 125,207,128 | 156,580,598 | 194,289,175 | 227,031,504 |
| Amortization (Pre-operational Expenses) | - | 175,378 | 175,378 | 175,378 | 175,378 | 175,378 | 175,378 | 175,378 | 175,378 | 175,378 |
| Depreciation | - | 3,587,222 | 3,587,222 | 3,587,222 | 3,587,222 | 3,587,222 | 3,587,222 | 3,587,222 | 3,587,222 | 3,587,222 |
| Raw Material Inventory | (28,334,880) | (3,499,358) | (3,931,528) | (4,417,072) | (4,962,581) | (5,575,459) | (6,264,028) | (7,037,636) | (4,354,545) | (3,418,854) |
| Finished Goods Inventory | - | (28,335,051) | (3,499,375) | (3,931,547) | (4,417,093) | (4,962,603) | (5,575,484) | (6,264,056) | (7,037,666) | (4,354,578) |
| Accounts receivable | - | - | - | - | - | - | - | - | - | - |
| Accounts payable | - | - | - | - | - | - | - | - | - | - |
| Tax Payable | - | 7,444,278 | 3,143,964 | 3,815,870 | 4,619,145 | 17,987,641 | (5,709,115) | 7,843,368 | 9,427,144 | 8,185,582 |
| Building rent prepayments | - | - | - | - | - | - | - | - | - | - |
| Prepaid Payments | - | - | - | - | - | - | - | - | - | - |
| <i>Cash provided by operations</i> | (28,334,880) | 9,149,581 | 41,828,628 | 56,846,296 | 75,095,099 | 159,255,768 | 111,245,722 | 154,709,496 | 195,911,330 | 231,030,876 |
| Financing activities | | | | | | | | | | |
| Long term debt principal repayment | - | (4,186,263) | (4,792,852) | (5,487,337) | (6,282,452) | (7,192,779) | - | - | - | - |
| Addition to long term debt | 27941682 | - | - | - | - | - | - | - | - | - |
| Owner's investment | 41912524 | - | - | - | - | - | - | - | - | - |
| <i>Cash provided by/ (used for) financing activities</i> | 69854206 | (4,186,263) | (4,792,852) | (5,487,337) | (6,282,452) | (7,192,779) | - | - | - | - |
| Investing activities | | | | | | | | | | |
| Capital expenditure | (40,710,112) | - | - | - | - | - | - | - | - | - |
| <i>Cash (used for)/ provided by investing activities</i> | (40,710,112) | - | - | - | - | - | - | - | - | - |
| Net Cash | 809,214 | 4,963,318 | 37,035,775 | 51,358,959 | 68,812,647 | 152,062,989 | 111,245,722 | 154,709,496 | 195,911,330 | 231,030,876 |
| Cash balance brought forward | - | 809,214 | 5,772,532 | 42,808,307 | 94,167,267 | 162,979,914 | 315,042,903 | 426,288,626 | 580,998,122 | 776,909,452 |
| Cash carried forward | 809,214 | 5,772,532 | 42,808,307 | 94,167,267 | 162,979,914 | 315,042,903 | 426,288,626 | 580,998,122 | 776,909,452 | 1,007,940,328 |

10.3 Balance sheet

| Balance Sheet | | | | | | | | | | |
|--|-------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|----------------------|
| | Year 0 | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 | Year 7 | Year 8 | Year 9 |
| Capital and Reserves | | | | | | | | | | |
| Share Capital | 41,912,524 | 41,912,524 | 41,912,524 | 41,912,524 | 41,912,524 | 41,912,524 | 41,912,524 | 41,912,524 | 41,912,524 | 41,912,524 |
| Retained Earnings | 0 | 29,777,111 | 72,130,078 | 129,746,523 | 205,839,550 | 353,883,140 | 479,090,268 | 635,670,867 | 829,960,041 | 1,056,991,545 |
| | 41,912,524 | 71,689,635 | 114,042,602 | 171,659,047 | 247,752,074 | 395,795,664 | 521,002,792 | 677,583,390 | 871,872,565 | 1,098,904,069 |
| Long Term Loan | 27,941,682 | 23,755,420 | 18,962,567 | 13,475,231 | 7,192,779 | - | - | - | - | - |
| Current Liabilities | | | | | | | | | | |
| Tax Payable | | 7,444,278 | 10,588,242 | 14,404,111 | 19,023,257 | 37,010,897 | 31,301,782 | 39,145,150 | 48,572,294 | 56,757,876 |
| | - | 7,444,278 | 10,588,242 | 14,404,111 | 19,023,257 | 37,010,897 | 31,301,782 | 39,145,150 | 48,572,294 | 56,757,876 |
| | 69,854,206 | 102,889,332 | 143,593,411 | 199,538,389 | 273,968,109 | 432,806,561 | 552,304,574 | 716,728,540 | 920,444,859 | 1,155,661,945 |
| Fixed Assets | | | | | | | | | | |
| Land | 6,000,000 | 6,000,000 | 6,000,000 | 6,000,000 | 6,000,000 | 6,000,000 | 6,000,000 | 6,000,000 | 6,000,000 | 6,000,000 |
| Building | 21,359,272 | 19,223,345 | 17,087,418 | 14,951,490 | 12,815,563 | 10,679,636 | 8,543,709 | 6,407,782 | 4,271,854 | 2,135,927 |
| Plant and Machinery | 9,859,950 | 8,873,955 | 7,887,960 | 6,901,965 | 5,915,970 | 4,929,975 | 3,943,980 | 2,957,985 | 1,971,990 | 985,995 |
| Furniture and Fixture | 200,000 | 180,000 | 160,000 | 140,000 | 120,000 | 100,000 | 80,000 | 60,000 | 40,000 | 20,000 |
| Office Equipment | 375,000 | 337,500 | 300,000 | 262,500 | 225,000 | 187,500 | 150,000 | 112,500 | 75,000 | 37,500 |
| Vehicles | 2,039,000 | 1,631,200 | 1,223,400 | 815,600 | 407,800 | - | (407,800) | (815,600) | (1,223,400) | (1,631,200) |
| Fixed Assets | 39,833,222 | 36,246,000 | 32,658,778 | 29,071,555 | 25,484,333 | 21,897,111 | 18,309,889 | 14,722,667 | 11,135,444 | 7,548,222 |
| Pre-operating expenses & Contengencies | 876,890 | 701,512 | 526,134 | 350,756 | 175,378 | | | | | |
| Current Assets | | | | | | | | | | |
| Raw Material Inventory | 28,334,880 | 31,834,238 | 35,765,766 | 40,182,838 | 45,145,419 | 50,720,878 | 56,984,906 | 64,022,542 | 68,377,087 | 71,795,941 |
| Finished Goods Inventory | | 28,335,051 | 31,834,426 | 35,765,973 | 40,183,066 | 45,145,669 | 50,721,153 | 56,985,209 | 64,022,875 | 68,377,454 |
| Cash/Bank | 809,214 | 5,772,532 | 42,808,307 | 94,167,267 | 162,979,914 | 315,042,903 | 426,288,626 | 580,998,122 | 776,909,452 | 1,007,940,328 |
| | 29,144,094 | 65,941,821 | 110,408,499 | 170,116,078 | 248,308,398 | 410,909,450 | 533,994,685 | 702,005,873 | 909,309,414 | 1,148,113,723 |
| | 69,854,206 | 102,889,332 | 143,593,411 | 199,538,389 | 273,968,109 | 432,806,561 | 552,304,574 | 716,728,540 | 920,444,859 | 1,155,661,945 |

11 KEY ASSUMPTIONS

Table 11-1 Operational Assumptions

| | |
|---------------------------------|-----------------|
| Hours operational/shift | 8 |
| Days operational/month | 26 |
| Days operational/year | 312 |
| Husking Plant Operations | 7 months |
| No of Shifts in Husking Plant | 2 shift per day |
| Polishing Plant Operations | 12 months |
| No of Shifts in Polishing Plant | 2 Shift per day |

Table 11-2 Production Related Assumptions

| | |
|--|------------------------------|
| Maximum Production Capacity Husking Plant (100%) | 8,736.00(at 3 tons per hour) |
| Production Capacity Polishing Plant (100%) | 9,984.00(at 2 tons per hour) |
| Starting Capacity Utilization Husking Plant | 60% |
| Starting Capacity Utilization Polishing Plant | 60% |
| Annual Growth Rate in Capacity Utilization | 7% |
| Ratio of Basmati to Irri Rice | 80:20 |
| Maximum Capacity Utilization of plants | 98% |

Table 11-3 Product Mix of Polishing Plant

| | |
|-------------------------|-----|
| Polished silky rice | 40% |
| Polished non silky rice | 40% |
| Polished broken rice | 10% |
| Bran | 10% |

Table 11-4 Revenue assumption

| Revenue (Sale price) | Sale price/ton |
|-------------------------|----------------|
| Polished silky Rice | |
| Basmati | 43,000 |
| Irri | 29,000 |
| Polished non silky rice | |
| Basmati | 42,000 |
| Irri | 28,000 |
| Polished broken rice | |
| Basmati | 12,000 |
| Irri | 7,000 |

| | |
|-------------|--------|
| Bran | 855 |
| Services | 37,500 |
| Broken rice | 9,000 |
| Powder | 7,000 |
| Husk | 1,500 |

Table 11-5 Raw Material prices

| Raw material | Price per ton |
|----------------------------------|---------------|
| Paddy | 13,750 |
| Price per ton (un polished rice) | 28,000 |

Table 11-6 Cash Flow Related Assumptions

| | |
|--|---------|
| Account Receivable Cycle Head Rice | 15 days |
| Account Receivable Cycle Polished Rice (Local) | 15 days |