

Pre-Feasibility Study Mini Flour Mill



Small and Medium Enterprise Development Authority
Government of Pakistan
www.smeda.org.pk

HEAD OFFICE							
6 th Floor, LDA Plaza, Egerton Road, Lahore. Tel: (042) 111-111-456, Fax: (042) , 6304926, 6304927 Helpdesk@smeda.org.pk							
REGIONAL PUNJAB	OFFICE	REGIONAL SINDH	OFFICE	REGIONAL NWFP	OFFICE	REGIONAL BALOCHISTAN	OFFICE
8 TH Floor, LDA Plaza, Egerton Road, Lahore. Tel: (042) 111-111-456 Fax: (042) 6304926, 6304927 helpdesk@smeda.org.pk		5 TH Floor, Bahria Complex II, M.T. Khan Road, Karachi. Tel: (021) 111-111-456 Fax: (021) 5610572 Helpdesk-khi@smeda.org.pk		Ground Floor State Life Building The Mall, Peshawar. Tel: (091) 9213046-47 Fax: (091) 286908 helpdesk-pew@smeda.org.pk		Bungalow No. 15-A Chaman Housing Scheme Airport Road, Quetta. Tel: (081) 2831623, 2831702 Fax: (081) 2831922 helpdesk-qta@smeda.org.pk	

January, 2011

DISCLAIMER

The purpose and scope of this information memorandum is to introduce the subject matter and provide a general idea and information on the said area. All the material included in this document is based on data/information gathered from various sources and is based on certain assumptions. 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 does not assume any liability for any financial or other loss resulting from this memorandum in consequence of undertaking this activity. Therefore, the content of this memorandum should not be relied upon for making any decision, investment or otherwise. The prospective user of this memorandum is encouraged to carry out his/her own due diligence and gather any information he/she considers necessary for making an informed decision. The content of the information memorandum does not bind SMEDA in any legal or other form.

DOCUMENT CONTROL

Document No.	PREF-
Revision	-
Prepared by	SMEDA-Balochistan
Issued by	Library Officer
Issue Date	January, 2011

Table of Contents

1. INTRODUCTION TO SMEDA	4
2. PURPOSE OF THE DOCUMENT	4
3 PROJECT PROFILE.....	4
3.1 PROJECT BRIEF	4
3.2 HISTORICAL BACKGROUND	5
3.3 DEFINING THE PRODUCT	5
3.4 RAW MATERIAL	6
3.5 OPPORTUNITY RATIONALE	6
3.6 PROPOSED PRODUCT MIX	6
3.7 MARKET ENTRY TIMING	7
3.8 PROPOSED LOCATIONS	7
3.9 PROPOSED BUSINESS STATUS	7
3.10 PROJECT CAPACITY	7
3.11 VIABLE ECONOMICS SIZE	7
4. CRITICAL FACTORS IN DECISION MAKING	7
4.1 KEY SUCCESS FACTORS	7
4.2 OPPORTUNITIES	8
4.3 THREATS	8
5. MARKET ANALYSIS	8
5.1 TARGET CUSTOMER.....	8
5.2 GLOBAL MARKET	8
5.2.1 Major Producers	9
5.2.2 Major Exporters	9
5.2.3 Major Importers	10
5.3 NATIONAL MARKET	10
5.3.1 Demand & Supply.....	11
5.3.2 Market Structure.....	12
6. PRODUCTION PROCESS	12
6.1 CLEANING & STORING	12
6.2 WASHING & SORTING	12
6.3 CONDITIONING	12
6.4 GRISTING	12
6.5 MILLING	12
6.6 PACKAGING & DISPATCHING	13
7. PROJECT INPUTS.....	14
7.1 EQUIPMENT REQUIREMENT.....	14
7.2 OFFICE EQUIPMENT REQUIREMENT	14
7.3 HUMAN RESOURCE REQUIREMENT	14
7.4 VEHICLE REQUIREMENT	15
7.5 LAND & BUILDING REQUIREMENT	15
7.6 FURNITURE & FIXTURE REQUIREMENT	15
8. PROJECT ECONOMICS.....	16
8.1 TOTAL CAPITAL REQUIREMENT	16
8.2 CAPITAL STRUCTURE OF THE PROJECT	16

9. FINANCIAL ANALYSIS..... 17
10. KEY ASSUMPTIONS..... 21



1. INTRODUCTION TO SMEDA

The Small and Medium Enterprise Development Authority (SMEDA) was established with the objective to provide fresh impetus to the economy through the launch of an aggressive SME support program.

Since its inception in October 1998, SMEDA had adopted a sectoral SME development approach. A few priority sectors were selected on the criterion of SME presence. In depth research was conducted and comprehensive development plans were formulated after identification of impediments and retardants. The all-encompassing sectoral development strategy involved recommending changes in the regulatory environment by taking into consideration other important aspects including financial aspects, niche marketing, technology up gradation and human resource development.

SMEDA has so far successfully formulated strategies for sectors including, fruits and vegetables, marble and granite, gems and jewelry, marine fisheries, leather and footwear, textiles, surgical instruments, urban transport and dairy. Whereas the task of SME development at a broader scale still requires more coverage and enhanced reach in terms of SMEDA's areas of operation.

Along with the sectoral focus a broad spectrum of business development services is also offered to the SMEs by SMEDA. These services include identification of viable business opportunities for potential SME investors. In order to facilitate these investors, SMEDA provides business guidance through its help desk services as well as development of project specific documents. These documents consist of information required to make well-researched investment decisions. Pre-feasibility studies and business plan development are some of the services provided to enhance the capacity of individual SMEs to exploit viable business opportunities in a better way.

This document is in the continuation of this effort to enable potential investors to make well-informed investment decisions.

2. PURPOSE OF THE DOCUMENT

The objective of pre-feasibility study is primarily to facilitate entrepreneurs in project identification for investment. The project pre-feasibility may form the bases of an important investment decision, in order to serve this objective, the document/study covers various aspects of project, concept development, start-up, production, finance and business management.

3 PROJECT PROFILE

3.1 Project brief

The proposed project is about establishing a Mini Flour Mill Plant. The subject project is strongly recommended to be established in the adjoining of the major cites or urban areas with high wheat production/consumption. The prevalence of such facility would add economic benefits in the country and would number of direct and indirect employment. Moreover features like low cost & less complexity associated with installation of Mini flour mill makes it more attractive project as compare to normal sized flourmill. Currently the project is being designed /

proposed for major cities with potential wheat production but the same can be proposed for other cities which can fulfill input and logistic requirements of the project.

Initially project focus would be on customers from neighboring communities, whereas at maturity domestic market would be preferred. The main feature of the project would include hygienically produced flour processed according to international quality and standards.

3.2 Historical Background

Flour has been made & eaten since the prehistoric times of Egyptian era over 6000 years before. The earliest method used for producing flour involved grinding grain between stones, which is usually operated by hands. These were named as “hand stones”. A revolution comes in the process by the advent of “Milestones” over 2,000 years back. The milestones are simply rough rolls made by rocks for grinding wheat. They were driven by slaves or cattle. For 400 years the millstone was the only system in use.

The Greeks were the first to introduce a mechanically driven water mill in about 450 - 400 B. C. A hundred years later the Romans invented a vertical water wheel with gearing to stones. About 600 A. D. the wind mill was invented. For a long time the flour milling industry progressed very slowly but with start of industrialization era, swift improvement has been seen in the said industry. The use of steam for flour milling was started in 1784 in London, however the first fully automatic flour mill working on rollers principle for grinding wheat was established in 1878 in Minneapolis, Minnesota. During the nineteenth century numerous improvements were made in mill technology. These new types of mills used metal rollers, rather than millstones, to grind wheat. Roller mills were less expensive, more efficient, more uniform, and cleaner than millstones. The concept was further furnished till the modern versions of purifiers and roller mills, which are used to make flour today.

3.3 Defining the Product

Flour is the product mainly obtained by grinding wheat kernels or “berries.” The kernel consists of three distinct parts: **bran** (14.5% of kernel weight), the outer covering of the grain; **germ** (2.5% of kernel weight), the embryo contained inside the kernel; and **endosperm** (83% of kernel weight), the part of the kernel that makes white flour. During milling, the three parts are separated and recombined accordingly to achieve different types of flours. The major types of flour include White flour, Bread Flour, All purpose flour, Cake flour and Semolina etc.

However, keeping in view the market demand and characteristics “All purpose flour” is recommended to be the final product of the proposed prefeasibility. All-Purpose Flour is white flour, milled from hard wheat or a blend of hard and soft wheat. It gives the best results for many kinds of products, including some yeast breads, quick breads, cakes, cookies, pastries and noodles etc. All-purpose flour is usually enriched having protein varies from 8 to 11 percent. Globally some flour producers bleach the all purpose flour for quality enhancement however the bleaching don't affect nutrient value.

3.4 Raw Material

Wheat has been used as primary source for making flour, however flour can also be made from other starchy plant foods. These include barley, buckwheat, corn, lima beans, oats, peanuts, potatoes, soybeans, rice, and rye. The proposed prefeasibility is based on the assumption of wheat as primary raw material. There are basically six different classes of wheat: ***Hard Red Winter, Hard Red Spring, Soft Red Winter, Hard White, Soft White and Durum***. The end products are determined by the wheat's characteristics, especially protein and gluten content. The harder the wheat, the higher the protein content in the flour. Soft or low protein wheat having 8 – 11 percent protein are used in flour making ideal for cakes, pastries, cookies, crackers and Oriental noodles. Hard flour containing 11 – 18 percent proteins are made from high protein wheat, used in breads and quick breads. Durum is used in pasta and egg noodles.

In addition, mixing of small amount of additives is also practiced globally. Bleaching agents such as benzoyl peroxide are added to make the flour whiter. Oxidizing agents (also known as improvers) such as potassium bromate, chlorine dioxide, and azodicarbonamide are added to enhance the baking quality of the flour. These agents are added in a few parts per million. Self-rising flour contains salt and a leavening agent such as calcium phosphate. It is used to make baked goods without the need to add yeast or baking powder. Beside this, some producers add vitamins and minerals to replace those lost during milling. The most important of these are iron and the B vitamins, especially thiamin, riboflavin, and niacin.

3.5 Opportunity Rationale

Flour has been used for centuries as vital ingredient of daily diet. Wheat flour is an important source of complex carbohydrates with a balance mixture of calories, proteins B-vitamins, calcium, folacin, iron, magnesium, phosphorus, potassium, zinc, minimal amounts of sodium and other trace elements. It is used in variety of the modern & traditional baked dishes both at home and commercial level. The common practices for flour are yeast breads, quick breads, cakes, cookies, pastries and noodles etc. The products made by flour can be eaten by hand or mixed with other traditional and modern dishes. Such all factors contribute to make it the most nutritious food for the individual and commercially very importance for any economy.

Pakistan has been characterized as densely populated country. Over the past years, people preference is changed towards more quality food. However, Roti & other wheat products remain essential items in daily diet. Hence factors like high demand, diversified uses and people preferences indicate a strong potential market for quality producers. Introduction of a Mini Flour Mill as compare to a traditional large scale structure would be much easier to manage for small scale investors due to low capital and operational cost. Moreover, characterization of modern technology, hygiene environment, standardized processed product and professional staff would create a difference.

3.6 Proposed Product Mix

The Proposed product mix for the project will be standardized All-purpose flour, processed in accordance with quality accepted standards. Value addition will be done in shape of quality processing & standardize packaging.

In addition to flour, many by products such as Maida, Suji, Choker & Bran etc. can also be prepared through installation of additional machinery from the said facility. Although utilizing the proposed facility for such purposes is the sole desire of the entrepreneur, however the proposed prefeasibility is based on the assumption of All-Purpose Flour as sole final product.

3.7 Market Entry Timing

The proposed project can be established any time due to the high demand. But keeping in view the harvesting season, the project is proposed to establish in any time between March to June or bulk purchases of raw material should be done during harvest season to exploit cost benefit. However, round the year processing will be done using store raw material.

3.8 Proposed Locations

The proposed location for the establishment of the unit will primarily be near wheat producing areas. In Balochistan, it is suggested that the said unit may be established in Quetta, Sibi, Loralai and Zhob.

3.9 Proposed Business Status

The proposed legal structure of the business entity is either sole proprietorship or partnership. Although selection totally depends upon the choice of the entrepreneur, whereas the financial of this project feasibility study is based on Sole Proprietorship.

3.10 Project Capacity

The capacity of the proposed project would be 900 tons (0.9 millions kgs) on annual basis, assuming 300 working days a year, producing 3 tons of flour per day.

3.11 Viable Economics Size

The total investment required for this project is Rs.10.49 millions. This investment mainly covers capital costs of Rs. 7.89 millions and working capital requirement of Rs. 2.15 millions.

Table 1: Project Investment

Description	Amount (Rs)
Total Fixed Cost	7,890,000
Working Capital	2,152,452
Total	10,042,452

4. CRITICAL FACTORS IN DECISION MAKING

Following are the key factors recommended for initiating a successful business.

4.1 Key Success Factors

- Selection of proper location, equipment and staff would be required to run project successfully.
- Continuous efforts should be made for up-gradation of the processing techniques.
- To attract large number of customers the product must be processed on quality standards.

4.2 Opportunities

The proposed project will be having following opportunities:

- Escalating demand based on rapidly growing population.
- Availability of raw material.
- Availability of labor at low price.
- Established market & growing demand.

4.3 Threats

The proposed project will be facing the following threats:

- Price fluctuations and macroeconomic instability.
- High Competition.
- Complex regulatory environment.

5. MARKET ANALYSIS

5.1 Target Customer

The target customers for the proposed product would primarily be individuals, whole sellers & retailers, confectionary and home users. Initially the project will be focusing on neighboring communities, and opportunity for expansion could be capitalize depending successful marketing of product.

5.2 Global Market

Wheat production in the world has been increasing dramatically fast due to the massive demand and increase in population. As per statistics provided by FAO in 2000/2001, the world's total wheat output was estimated at 586 million tons, while by the end of 2008-09 it has reached to remarkable figure of 685 millions tons. Table 2 describes the statistics on world wheat Production, Consumption, Trade & Supply as below.

Figure 2: World Wheat Production, Trade, Consumption & Supply

	2004-05 Million tons	2005-06 Million tons	2006-07 Million tons	2007-08 Million tons	2008-09 Million tons (Est)	2009-10 (forecast) Million tons
Production	632	625	597	610	685	656
Trade	110	110	113	113	124	114
Consumption	620	620	621	618	645	655
Food	438	439	442	447	452	456
Feed	111	116	113	102	120	127
Other uses	71	65	65	69	73	72
Year-end stocks	174	180	160	152	191	192
Supply	793	806	776	768	832	n/a

Source: FAO

5.2.1 Major Producers

As per statistics provided by FAO, China is the leading country in wheat grain production. It produces 112 millions tons out of total world production of 683 millions tons. India is the second largest producer with a production of 78 millions tons recorded in year 2008. Pakistan comparatively stands at 7th Position, by contributing 20 millions tons of wheat grains in the total world production as described in table 3. However, none of the Asian giants contribute in the world export of wheat flour mainly due to the reason of high local demand.

Table3: Major Producers of Wheat in Year 2008

Rank	Country Name	Production (\$1000)	Production (MT)
1	China	15,805,966	112,463,296
2	India	11,671,546	78,570,200
3	United States of America	9,301,602	68,016,100
4	Russian Federation	6,670,506	63,765,140
5	Canada	4,462,759	28,611,100
6	France	4,388,762	39,001,700
7	Pakistan	3,023,994	20,958,800
8	Australia	2,653,403	21,420,177
9	Ukraine	2,618,186	25,885,400
10	Turkey	2,428,920	17,782,000
	World	82,992,471	683,406,527

Source: FAO

5.2.2 Major Exporters

In relevance to statistical figure provided by FAO, Kazakhstan is the world leader in export of wheat flour. In year 2008, Kazakhstan has exported 1.8 million tones of wheat flour with dollar value amounting to 0.85 thousands dollars. Turkey ranks second in world exports while France is the third largest exporter of wheat flour. Table 4 describes the major exporters as follows.

Table 4: Major Exporters of Wheat Flour in Year 2008

Rank	Name	Quantity (tones)	Value (1000 \$)	Unit value (\$/tones)
1	Kazakhstan	1,800,640	849,281	472
2	Turkey	1,239,120	640,674	517
3	France	786,480	449,431	571
4	Argentina	995,085	444,201	446
5	Belgium	758,568	410,554	541
6	Germany	567,793	321,408	566
7	Russian Federation	453,399	201,099	444
8	Canada	191,123	153,865	805
9	United States of America	267,765	148,223	554
10	Ukraine	274,396	124,473	454

Source: FAO

5.2.3 Major Importers

Afghanistan is biggest consumer of world wheat flour as per statistics provided by FAO. It has imported 0.86 million tons of wheat flour in year 2008. Uzbekistan & Brazil are other leading importers of wheat flour by importing 0.76 & 0.69 millions tones respectively in the year 2008. Table 5 illustrates the statistical data regarding the major wheat flour importers of the world.

Table 5: Major Importers of Wheat Flour in year 2008

Rank	Country Name	Quantity (tones)	Value (1000 \$)	Unit value (\$/tones)
1	Afghanistan	865,333	524,621	606
2	Uzbekistan	767,394	353,136	460
3	Brazil	695,253	304,603	438
4	Libyan Arab Jamahiriya	460,551	292,705	636
5	Iraq	489,000	276,155	565
6	Indonesia	532,649	271,422	510
7	Netherlands	389,729	203,598	522
8	Angola	345,555	189,030	547
9	France	247,433	161,960	655
10	United States of America	200,637	156,962	782

Source: FAO

5.3 National Market

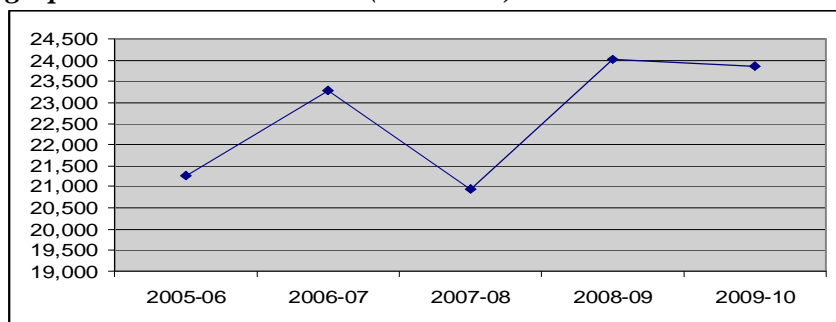
Wheat (*Triticum aestivum* L.) is Pakistan's largest food grain crop, and accounts for 40% of the total cultivated area. Probably 80% of farmers in Pakistan cultivate wheat. The country ranks within the top-10 (about seventh) of the world's wheat producers with the majority of wheat grown in the Punjab. Wheat is the leading food grain of Pakistan and use as a staple diet by the people. In year 2009-10, it contributed 14.4 percent to the value added in agriculture and 3.1 percent to GDP. Area and production of wheat for the year 2009 10 are 9042 thousand hectares and 23 million tons, respectively. The Area, Production and Yield per hectare of wheat for the last five years are given in table 6 & Fig 1 as below.

Table 6: Area, Production and Yield per hectare of wheat

Year	Area		Production		Yield	
	(000 Hectares)	% change	(000 tones)	% change	(Kgs/Hec.)	% change
2005-06	8,448	1.1	21,277	-1.6	2,576	-1.9
2006-07	5,578	1.5	23,295	9.5	2,716	7.8
2007-08	8,550	-0.3	20,959	-10.0	2,451	-9.8
2008-09	9,046	5.8	24,033	14.7	2,657	8.4
2009-10	9,042	-0.04	23,864	-0.7	2,639	2.1

Source: Economic Survey of Pakistan 2009-10

graph1: Wheat Production (000 tones)



Source: Economic Survey of Pakistan 2009-10

Punjab is the major contributor of wheat in Pakistan economy. It contributed around 80% of the total wheat for milling into flour for years 2000 to 2007 on average basis, whereas Baluchistan province has contributed an average of 3% of wheat over the described time period. Table 7 describes the province wise average production of wheat with in Pakistan from 2000-07.

Table 7: Province wise production of Wheat (000 tones)

Year	Punjab	Sindh	KPK	Baluchistan	Pakistan
2000 – 07	16,060	2,409	1,003	602	20,075
(Average)	(80%)	(12%)	(5%)	(3%)	(100%)

Source: Ministry of Finance & Competitive support fund

5.3.1 Demand & Supply

The wheat flour produced in Pakistan is known as Atta. This is the Hindi word for wheat flour commonly used in South Asian cooking. Wheat is mainly eaten in Pakistan as chapati and roti. Wheat based products are a major part of the diet in Pakistan. A typical meal would consist of daal, meat and bread (roti), and tea or a soft drink. The upper and middle-classes eat quite differently, but Roti is an essential item on the table served fresh baked and eaten hot. There is huge demand of flour within Pakistan due to massive population and eating preferences. Table 8 describes the demand and supply of wheat flour as follows.

Table 8: Demand & supply of Wheat flour

Year	Population (millions)	Total Flour Production (million tons)	Flour Demand (Million Tons)	Surplus / Deficit (million tons)
2001	144.41	9.47	10.417	(0.947)
2002	142.86	8.68	9.548	(0.868)
2003	145.96	8.63	9.493	(0.863)
2004	149.03	9.69	10.659	(0.969)
2005	150.47	11.04	12.144	(1.104)
2006	153.96	11.21	12.331	(1.121)
2007	160.00	11.62	12.782	(1.162)

Source: USAID & Competitive support fund

5.3.2 Market Structure

Pakistan is market with both enriched resources & efficient processing technology for flour. But still the demand always surpasses the supply as depicted by table 8. The Pakistan flour mill industry is characterized by both small and large scale flour mills to capitalize the huge potential existing in the market. There are a total of 950 commercial / large-scale flour mills working in Pakistan¹. These large-scale mills have capacity of around 50 – 200 tons/day. Whereas, it is estimated that there are about 700 Mini flour mills operating in the country with a capacity of 5 to 20 tons/ day. The small flour mills at capacity of less than 5 tons/day is estimated to be 8,000 or more. Ninety percent of the micro flour mills are located in the rural areas.

6. PRODUCTION PROCESS

The production process of flour is mainly subjected to machine/method used particular to the desired output product. However a brief summary of the general operations in any particular production line can be illustrated under the following headings:

6.1 Cleaning & Storing

As wheat arrives in the mill it is passed through a cleaning process to remove coarse impurities and is then stored according to its quality. This is mainly determined by the hardness, protein content and gluten quality of the wheat.

6.2 Washing & Sorting

Washing begins with screening to remove coarse, fine materials and the grain is separated by size, shape and weight. The finished product is then passed into conditioning bins.

6.3 Conditioning

Conditioning takes place before milling to produce uniform moisture content throughout the grain. Moistening helps to prevent break-up of the bran (hard outer layer) during milling and improves separation from the floury endosperm (the mass that forms the white flour of the grain).

6.4 Gristing

After conditioning, different batches of wheat grain are blended together (gristed) to make a mixture capable of producing the desired flour.

6.5 Milling

In the Milling step, flour is produced by a sequence of breaking, grinding and separating operations until the desired flour type is produced. Milling is simply the separation of the bran and

¹ According to the Chairman, All-Pakistan Flour Mills Association Sheikh Mohammad Shabbir (“Dawn” newspaper, September 2007) For more information please visit <http://pfma.com.pk> (Pakistan Flour Mill Association)

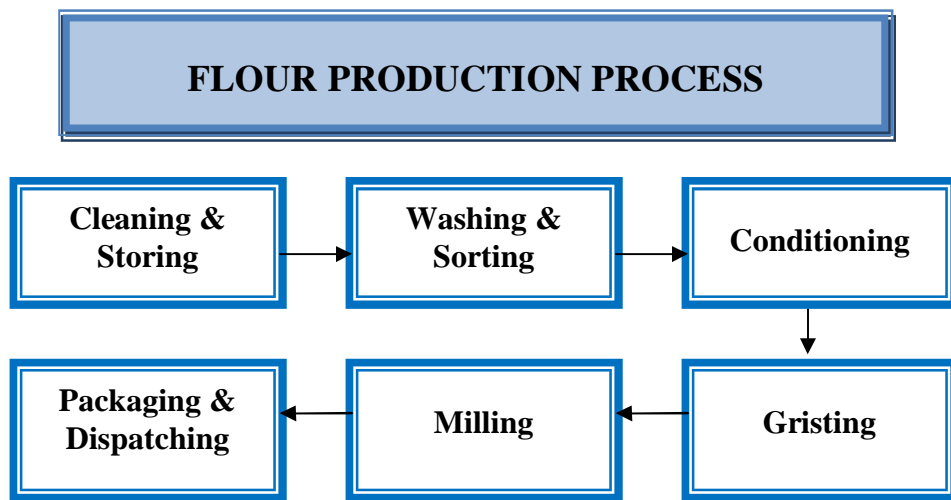
germ from the endosperm and the grinding for producing flour. The quality & type of the wheat grain going into the mill will determine the types of flour to be produced. The whole process is divided into grinding and purification.

In addition to flour, many by products such as Suji, mada can be produced by further processing through installation of required machinery.

6.6 Packaging & Dispatching

The final product is packaged in standards bags of 20 & 100 kgs. Then it is forwarded for either storage & transportation.

Figure 1: Flour production process flow



7. PROJECT INPUTS

7.1 Equipment Requirement

Table 7.1: Equipment & Machinery Details

Description	No	Price/Unit (Dollar-\$)	Total Price (PKR) Assuming \$1=85PKR
Mini Flour Production Plant*	1	21,000	1,785,000
Generator with installation	1		500,000
Transformer with installation	1		500,000
Total			2,785,000

**For details please check annexure A*

7.2 Office Equipment Requirement

Table 7.2: Office Equipment Details

Other Equipment Details	Qty	Cost/Unit	Total Cost (PKR)
Computer	1	25,000	25,000
Printers	1	10,000	10,000
Fax	1	12,000	12,000
Telephone Sets	2	1000x2=2,000	2,000
Total			49,000

7.3 Human Resource Requirement

Table 7.3: Human Resource Requirement Details

Description – HR Requirements	Nos	Salary per month	Salary per year
Manager	1	30,000	360,000
Technician	1	20,000	240,000
Plant Operators	2	15,000	360,000
Helpers	3	8,000	288,000
Guard	1	7,000	84,000
Sweeper	1	6,000	72,000
Driver	1	8,000	96,000
Total			1,500,000

Note: The staff salaries are estimated according to the market trends; however, the investor may set different pay scales.

7.4 Vehicle Requirement

Table 7.4: Vehicle Requirement Details

Vehicle	Nos	Cost
Vehicle - Shehzor	1	900,000
Registration	3%	27,000
Total Cost		927,000

7.5 Land & Building Requirement

Table 7.5: Land & Building Requirement Details

Description – Land & Building	Cost/Sq. Ft	Area in Sq. ft	Total Cost
Land	200	3,000	600,000
Office Building	1,200	240	288,000
Warehouse	1,000	1,400	1,400,000
Factory	1,700	1,000	1,700,000
Total			3,988,000

7.6 Furniture & Fixture Requirement

Table 7.6: Furniture & Fixture Details

Description	Total Cost
Furniture & Carpeting Requirement	80,000

8. PROJECT ECONOMICS

8.1 Total Capital Requirement

Table 8.1: Total Capital Requirements

Capital Investment	Rs. in actual
Land	600,000
Building/Infrastructure	3,388,000
Machinery & equipment	2,785,000
Furniture & fixtures	80,000
Office vehicles	927,000
Office equipment	49,000
Pre-operating costs	61,000
Total Capital Costs	7,890,000

Working Capital	Rs. in actual
Equipment spare part inventory	4,3521
Raw material inventory	1,462,500
Upfront insurance payment	185,600
Cash	500,000
Total Working Capital	2,152,452

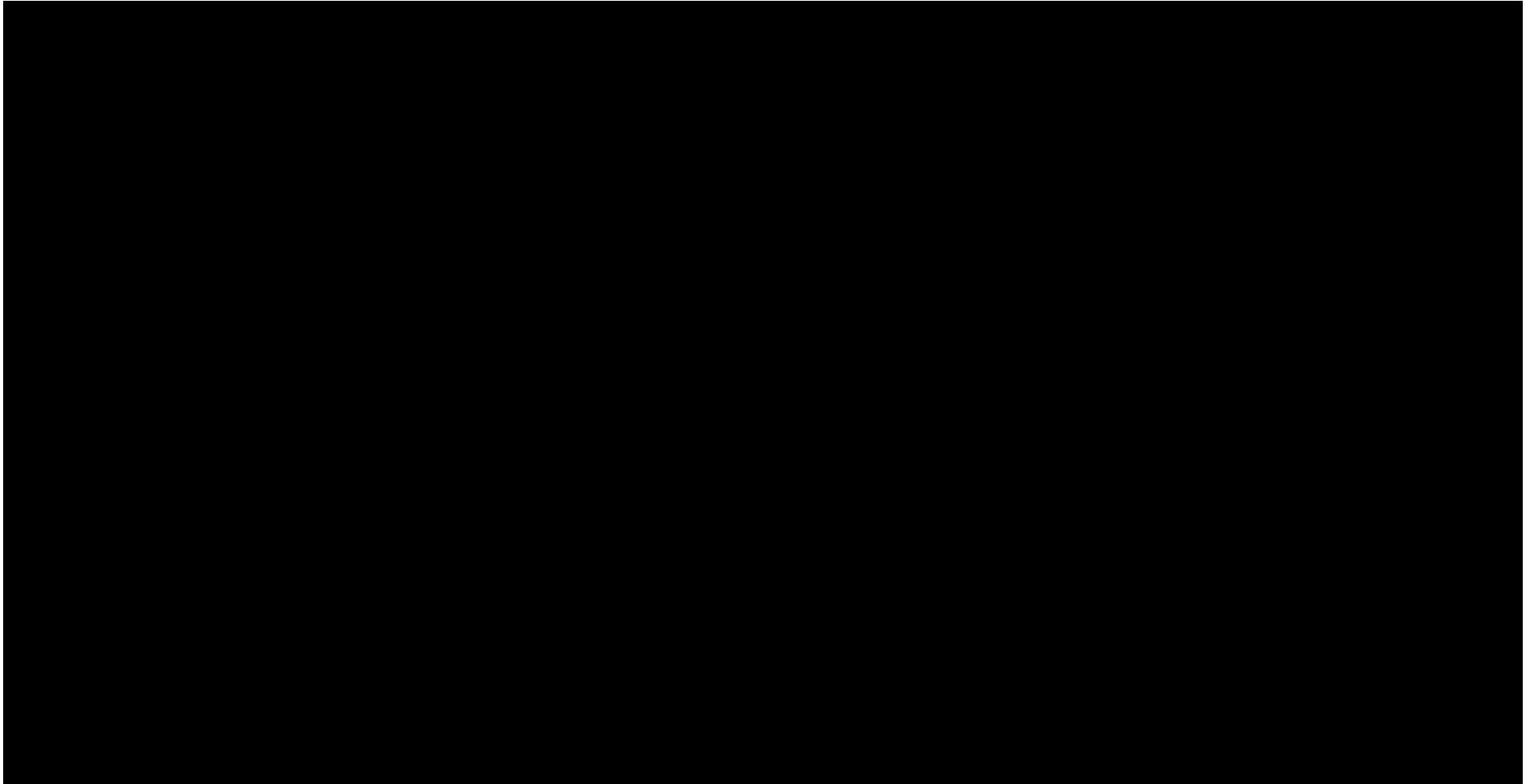
Total Investment	10,042,452
-------------------------	-------------------

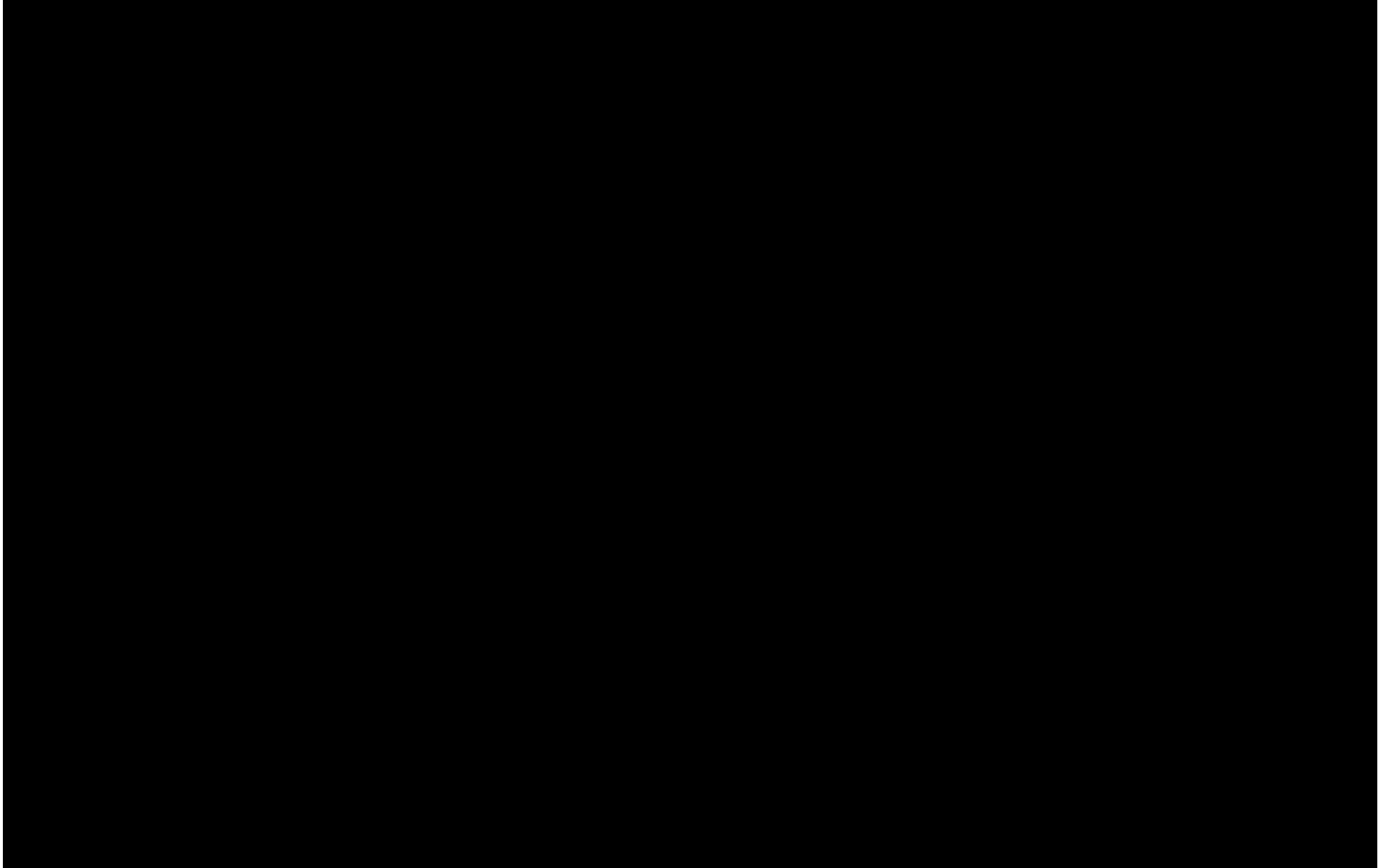
8.2 Capital Structure of the project

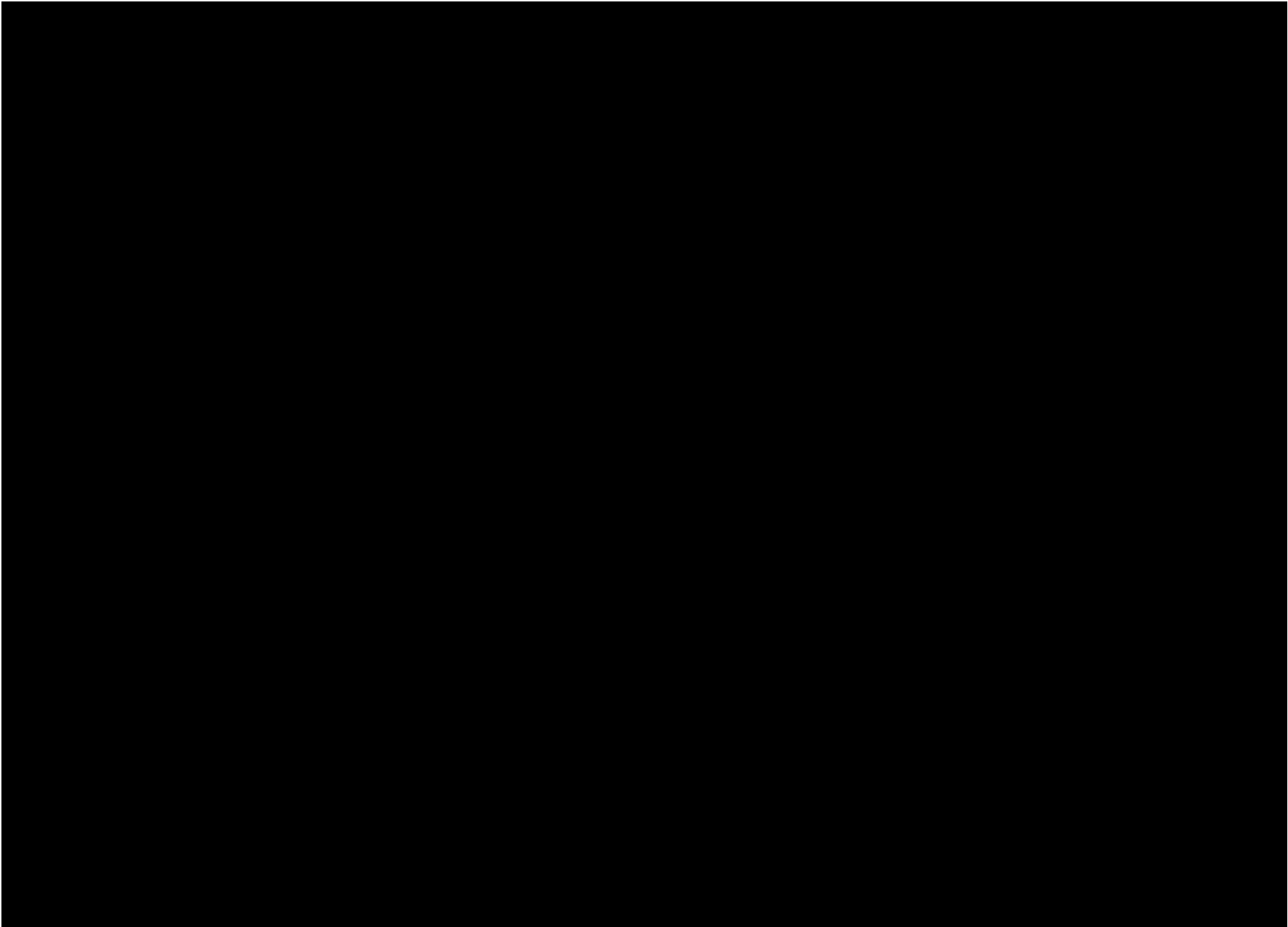
Table 8.2 Project Financing

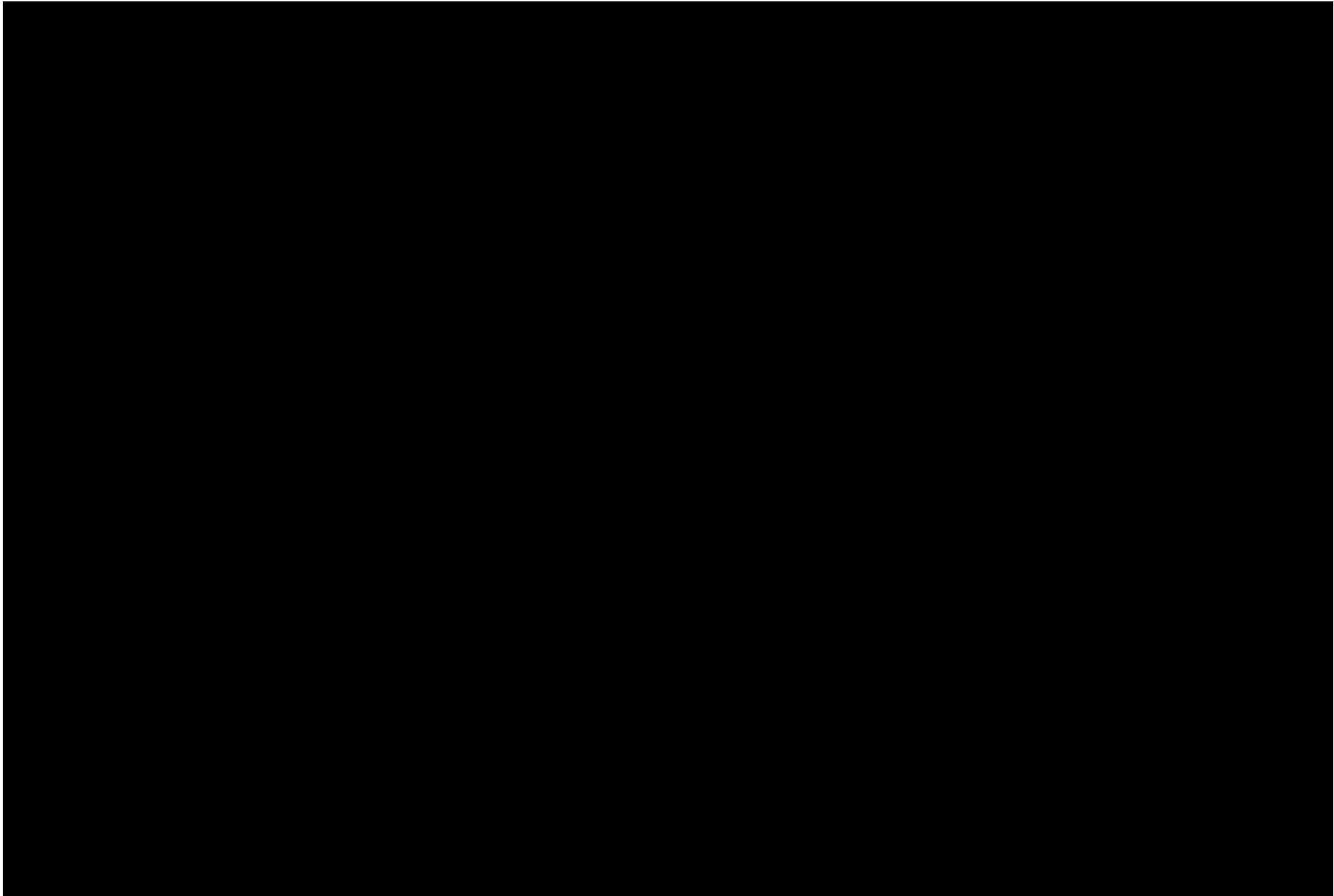
Initial Financing	Rs. in actual
Debt	5,021,226
Equity	5,021,226

9. FINANCIAL ANALYSIS









10. KEY ASSUMPTIONS

Table 10-1 Cost of Goods Sold per Unit of Production

COGS 1 (Raw material per unit)	Rs. 26
COGS growth rate per annum	10%

Table 10-2 Production Related Assumptions

Production capacity per year (kg)	900,000
Sale price per unit in year 1	Rs. 35
Sale price growth rate per annum	10%
Production capacity utilization in first year	75%
Production capacity utilization growth rate	5%
Maximum production capacity utilization	85%

Table 10-3 Economic Related Assumptions

Inflation rate	10%
Wage growth rate	10%
Electricity Growth Rate	10%
Water Price Growth Rate	10%
GAS Price Growth Rate	10%

Table 10-4 Financing Assumptions

Interest rate on long term debt	16%
Project Debt Component	50%
Project Equity Component	50%
Tax rate	22%
Required rate of return on equity	25%
WACC	17%
Owners Withdrawals	50% of available cash

Table 10-5 Expense Assumptions

Administrative benefit expense	3% of administrative expense
Traveling expense	3% of administrative expense
Communication expense	3% of administrative expense
Office vehicle running expense	10% of vehicle cost
Office expense	3% of administrative expense
Promotional Expense	0.3% of revenue
Machinery & equipment insurance rate	1%

Office vehicle insurance rate	3%
Professional Fee (Legal, Audit etc)	0.1% of revenue
Bad debt expense	1% of revenue

Table 10-6 Depreciation Rates

Building & Infrastructure	5%
Furniture & fixtures	10%
Machinery	10%
Office equipment	10%
Office Vehicle	20%

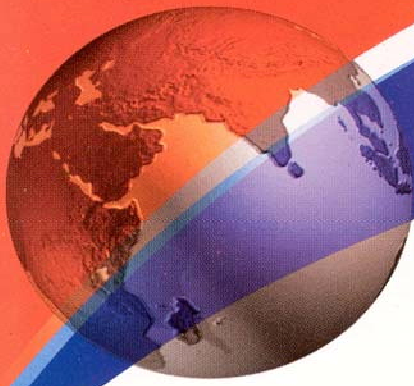
Table 10-7 Cash Flow Assumptions

Accounts Receivables Cycle (In Days)	15
Accounts Payable Cycle (In Days)	15
Initial cash on hand	Rs. 500,000

Annexure

BROCHURE & QUOTATION

**On Mini Flour Milling Line
Model: 6FTS-10**

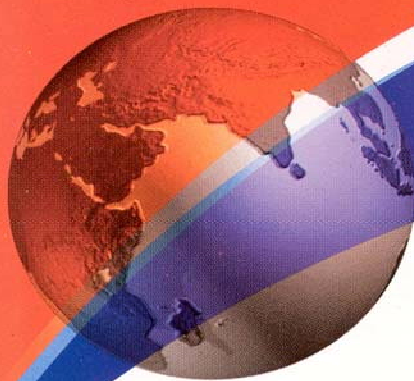


BRIEF INTRODUCTIONS

1. Technology in cleaning part: One screen, one scour, one destoner, One washer, One damper.
2. Technology in milling part: two sets of 6F1820 double roller mill, , consist of the milling technology of four break, two reduction, one bran brusher
3. Production capacity: Processing 8-10 tons of wheat/24H.
4. Power supply: About 33 kW.
5. Used under: Voltage: 380V, Frequency: 50 HZ, below an elevation of 1200m.
6. Workshop style and dimension: Triangle-framed workshop, with 13.2m long and 5.0m wide, and 4.0m under the beam.
7. Building Area for the machine 13m (L) X 5m (W) X 4 (H) m

Mini Flour Milling Line Model: 6FTS-10





**MAIN MACHINE LIST FOR 6FTS-10 TYPE
WHEAT FLOUR MILLING EQUIPMENT**

No	Description	Type	Qua	Power (kW)			Remarks
				model of	Unit powe	Total	
1.	High efficiency vibrating	TQLZ60*100	1		0.25*2	0.5	
2.	Washer	XMS44	1	Y100L1M-4	2.2+0.75	2.95	
3.	Horizontal Scourer	DMW30	1	Y100L1-4	2.2	2.2	
4.	Low pressure fan	4-72No.3.2	1	Y90L-2	2.2	2.2	
5.	High pressure fan	6-30No.4	1	Y90L-2	2.2	2.2	
6.	High pressure fan	6-30No.4	1	Y802-2	1.1	1.1	
7.	mill	6F1820	1	Y132S-4 Y112M-4	5.5+4.0	9.5	
8.	mill	6F1820	1	Y112M-4	4.0	8.0	
9.	Negative pressure round sieve	ZLSF38	2				
10.	Negative pressure round sieve	ZLS38	3				
11.	Motor for round sieve	Y100L-6	1	Y100L-6	1.5	1.5	
12.	Air lock	GFY4	2				
13.	No5.5 Fan	TFD623No.5	1	Y100L-2	3.0	3.0	
14.	Bran brusher	FPW30	1				
15.	Flour receiver		1				
16.	Central control panel	DKG10	1				
17.	Platform & supports		1 set				
18.	Pipes		1 set				
19.	Accessories		1 set				
20.	Cables		1 set				
21.	Spare parts for one year		1 set				
22.	Total					33.15	



QUOTATION

MACHINE : **MINI FLOUR MILLING LINE**

MODEL : **6FTS-10**

PRICE TOTAL : **USD. 21,000.00 FOB / UNIT**
USD TWENTY ONE THOUSAND ONLY PER UNIT FOB

ORIGIN: CHINA

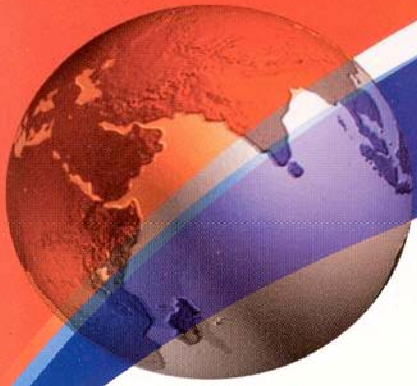
PAYMENT TERMS: 35% Advance
65% before Shipment

DELIVERY: MINIMUM 3 MONTHS FROM
THE DATE OF RECEIPT OF ADVANCE

VALIDITY: 15 DAYS

The above price is FOB subject to final confirmation and acceptance of order by our principal.

ADDITIONAL TERMS AND CONDITIONS APPLICABLE



ADDITIONAL TERMS & CONDITIONS

INSPECTION & TRIALS:

The machine/s can be tried at our factory premises in the presence of the customer's or representative. If they desire so.

PRE-INSTALLATION:

The stabilized power supply, compressed air & water supply (if required) up to the erection site, civil work and labour wherever required for erection etc. Shall be arranged by the customer prior to the scheduled date of delivery.

ERECTION & COMMISSIONING:

The supplied equipment will be erected and commissioned at the customer's site by our Engineers and Technicians.

The total cost will be as per given below:-

- a) To & Fro Air Fare
- b) Boarding & Lodging & Living & Communication expenses.
- c) The customer will arrange local conveyance for the above said period for our engineers.
- d) The out of pocket expenses will be @ USD 100 per day per engineer.



SERVICE:

Every subsequent visit made, against any break down call, will be on chargeable basis as per prevailing rates. The present rate is USD 200 per day per engineer in addition to point no. (a), (b) (c) & (d) above.

Local service is also available at a cost of Rs. 2,500/- per visit (for Karachi city limits) other then components charges & labour charges which will be billed separately. The charges are subject to change without prior notice.

**FORCE
MAJEURE:**

Any delay in delivery due to Strike, Lock out, Riots, War, Fire & other natural calamities for the reasons beyond our control will be considered as Forced Majeure circumstances and hence the delivery period of the contract shall be extended accordingly.