Pre-Feasibility Study

DAIRY SHOP

Small and Medium Enterprises Development Authority
Ministry of Industries and Production
Government of Pakistan

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2 EXECUTIVE SUMMARY

Pakistan is the fourth largest producer of milk in the world with 42 million tons of milk produced annually according to various estimates in the year 2020. [1] Buffalo and cows are the main milk-producing animals in Pakistan. Being a highly perishable commodity and produced primarily in the heart of the rural environment, milk reaches the consumer not only with difficulty but also at a high cost.

The potential of dairy is huge but the sector operates mostly in the informal economy and needs a consistent effort to formalize and be able to contribute better to the national economy. Of the total milk production, 97% is marketed through the informal sector[2] which includes the loose milk consumed in the villages and or sold in the cities through "Gawallas" (local milk sellers). In Pakistan, dairy-related businesses have the potential to offer good returns provided business gets the personal attention of the entrepreneur and all the critical factors are incorporated in business operations.

This “Pre-feasibility Document” provides details for setting up “Dairy Shop” business. The shop is proposed to be ideally located in any urban areas around major cities such as Karachi, Lahore, Faisalabad, Hyderabad, Quetta, Peshawar, Okara, Mardan, Jhelum, Gujrat, Sahiwal, Jhang, Multan, Bahawalpur, etc. across the country. As milk and other dairy products constitute the basic need of the people, dairy shop can be located in any city of Pakistan.

The proposed shop is assumed to have a capacity to sell a maximum of 360,000 liters of milk in a year. During the first year of operations, it is assumed that the project will operate at 60% of its total capacity, which is 216,000 liters. The capacity is assumed to increase at a rate of 5% per annum with a cap at 95% of total capacity. High return on investment and steady growth of business is expected with the entrepreneur having some prior experience in the related field of business.

The proposed project will be set up in a rented shop having an area of 400 sq. ft. (1.5 Marla). The project requires a total investment of PKR 4.16 million. This includes capital investment of PKR 3.6 million and working capital of PKR 0.56 million. The project will be established using 100% equity financing. The Net Present Value (NPV) of project is PKR 37.61 million with an Internal Rate of Return (IRR) of 89% and a Payback period of 1.61 years. Further, the proposed project is expected to generate Gross Annual Revenues of PKR 29.40 million in 1st year, Gross Profit (GP) ratio ranging from 18% to 39% and Net Profit (NP) ratio ranging from 8% to 23% during the projection period of ten years. The proposed project will achieve its estimated breakeven point at capacity of 24% (84,475 Liters) with gross revenue of PKR 12.00 million in a year.

The proposed project may also be established using leveraged financing. At 50% financing at a cost of KIBOR+3%, the proposed project provides Net Present Value

[1] Source: https://pide.org.pk/blog/milk-production-in-pakistan
[2] Source: https://pide.org.pk/blog

(NPV) of PKR 42.26 million, Internal Rate of Return (IRR) of 88% and Payback period of 1.65 years. Further, this project is expected to generate Net Profit (NP) ratio ranging from 7% to 23% during the projection period of ten years. The proposed project will achieve its estimated breakeven point at capacity of 25% (85,973 Liters) with breakeven revenue of PKR 12.22 million.

The project will generate direct employment opportunity for 6 to 8 people. As evident from the above financial figures, the proposed project for Dairy Shop shows reasonable profitability and is economically and financially viable. The legal form 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 the objective to provide fresh impetus to the economy through development of Small and Medium Enterprises (SMEs).

With a mission "to assist in employment generation and value addition to the national income, through development of the SME sector, by helping increase the number, scale and competitiveness of SMEs", SMEDA has carried out 'sectorial research' to identify policy, access to finance, business development services, strategic initiatives and institutional collaboration and networking initiatives.

Preparation and dissemination of prefeasibility studies in key areas of investment has been a 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.

National Business Development Program for SMEs (NBDP) is a project of SMEDA, funded through Public Sector Development Program of Government of Pakistan.

The NBDP envisages provision of handholding support / business development services to SMEs to promote business startup, improvement of efficiencies in existing SME value chains to make them globally competitive and provide conducive business environment through evidence-based policy-assistance to the Government of Pakistan. The Project is objectively designed to support SMEDA's capacity of providing an effective handholding to SMEs. The proposed program aimed at facilitating around 314,000 SME beneficiaries over a period of five years.

4 PURPOSE OF THE DOCUMENT

The objective of this 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 establishing a Dairy Shop by providing a general understanding of the business with the intention of supporting them in 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 setup and its successful management.

Apart from carefully studying the whole document, one must consider critical aspects provided later on, which form the basis of any investment decision.

5 BRIEF DESCRIPTION OF PROJECT & PRODUCT

Dairy sector is an important contributor to Pakistan's economy. The value of milk alone exceeds the combined value of wheat, rice, maize and sugarcane in the country.

A dairy shop sells milk and the products made from milk, which include yogurt, butter, cream, cheese, khoya, Lassi and other products.

The unit is proposed to be started in a rented shop having covered area of 400 sq. ft. The proposed project shall operate at 60% of the total selling capacity during the first year of operations. The proposed business will create employment opportunities for 6 to 8 persons. The main cost of the proposed project includes PKR 1.0 million for buying the required machinery and equipment and PKR 1.6 million as advance for purchasing milk.

5.1 Production Process Flow

Dairy shop process flow is shown in Figure 1.

Figure 1 Diary Milk Shop Process Flow

Brief description of process flow is as follows:

Procurement of Milk

Buffalo milk nutritional value is higher than cow milk, therefore buffalo milk is the preferred choice of the local consumer. In Pakistan, 100% of milk sold commercially is sold as buffalo milk. However, as per industry practice, 40% cow milk is mixed in buffalo milk. Cow milk is less costly compared to buffalo milk. Milk can be procured directly from small farmers in surrounding villages, dairy farms and milk can also be purchased from middle man (commonly known as Dhodi). Purchasing milk from middle man will be costly compared to purchasing it directly from small farmers and dairy farms. The dairy farms directly deliver the milk at the dairy shop in their chilling vehicles, which maintains the quality of milk. In case of purchase of milk from middle man or small farmer, the dairy shopkeeper will have to go to the location of middle man early in the morning. For the proposed project, milk supply from dairy farms is recommended.

The supply of milk is secured by paying advance for the milk supply of one month to the milk supplier. The quality of milk can be ensured by purchasing milk only from dairy farms, rather than the middle man.

Figure 2 Milk Procurement

Milk Receiving and Storing Steps

The diary shop owner shop should purchase milk from suppliers, who transport milk through chilled milk tankers. These chilled tankers help in preserving the milk nutritional content and milk quality. In case milk is purchased from sellers who use milk containers filled with ice, the quality of milk received is compromised. This happens because of the water quality of ice and mixing of melted ice water in the milk impacts the natural composition of milk. The quality of milk received can be tested by using “Milk Slip Test”. In this test, a drop of milk is placed on a polished vertical surface. If the drop of milk stops or flows slowly, leaving a white trail behind, it is pure milk. Milk mixed with water or other agents will flow down immediately without a trace.

Milk delivered by chilled tanks is directly transferred to milk chiller (Figure 3) tankers kept in the dairy shop through pipes or through traditional milk containers. The milk received is primarily measured by the gauge or measurement meter placed on the delivery vehicle of the supplier. The milk chillers kept in the dairy shop are already equipped with measuring scale, this scale is used by the shop owners to measure the quantity of milk received. Additionally, dairy shopkeepers have conventional (Figure 3) milk tanks in their shops. The measuring capacity of these tanks is already known by the diary shopkeepers. These tanks are also used by dairy shopkeepers for measuring the quantity of milk received.

Milk is received in the morning; however, based on the demand, milk is also delivered during day times and sometimes also in evening (especially in Ramadan),

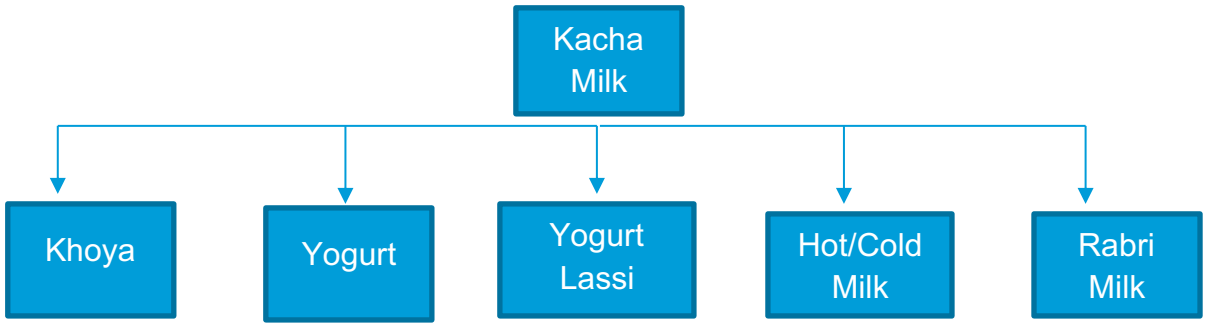
Figure 3-Milk Chillers and Conventional Milk Containers

	
Milk Chiller	**Conventional Milk Container**

Selling of Milk Products

Figure 4 represents the milks products of the proposed project.

Figure 4 Proposed Product List



A brief description of milk products is given as under:

Kacha Milk

Based on our business model, majority (47%) of our daily milk procurement will be sold as kacha milk (milk directly received from sellers and stored in milk chillers). The customer will approach the shop counter and request the shopkeeper to provide him the required quantity of milk. The shopkeeper will put the required quantity of milk in the polythene bags from the milk chillers, and give the bag of milk to the customer and receive payment from the customer.

Yogurt

The milk required for yogurt, needs to be boiled. This milk is boiled at 180°F for 30 minutes. Based on his personal experience, the diary shopkeeper assesses that the

milk is boiled and has been boiled at the required temperature. Heated milk is then poured into different Koondas (local name of the utensils used to make yogurt) and let it cool till it reaches 46˚C. When the milk cools down to 46˚C, it's time to add yogurt starter. It is stirred until yogurt is fully mixed with the milk. After around eight to ten hours, yogurt reaches the desired consistency and is ready for selling. Normally, the diary shop owners do not use any temperature measuring instrument to measure the temperature. Therefore, all the assessment of temperature as mentioned above is based on the personal judgment of the dairy shopkeeper.

The yogurt Koondas are placed into the freezers for cooling and for making further thick and sweeter. The yogurt is also sold in polythene bags.

Figure 5 Milk Processing

	
Boiling of Milk	Koondas

Yogurt-Lassi

Yogurt-Lassi (whey) is another popular product made from milk. Lassi is a blend of yogurt and water. It is mostly consumed in summer season. The process of lassi making includes following steps:

The quantity of milk and yogurt is set for making yogurt lassi.

To make lassi 50% milk and 50% yogurt and sugar (as per taste) are added in the required quantity in a tank or any utensil that will be put on the electric madhani.

After 10 to 15 minutes of churning the ingredients in the electric madhani, the yogurt lassi is ready to be served. After churning, the churning spindle is detached and washed in hot water. Lassi is put in glasses for serving to the customers.

Figure 6 Electric Madhani

5.2 Hot Milk

Hot milk is served in the winter season. Hot milk helps in better sleep as it contains amino acids which helps is inducing better sleep. It also cures common cold.

Figure 7 Hot Milk

5.3 Rabri Milk

Rabri is thickened sweetened milk having layers of malai or cream in it. It is flavored with cardamoms (Ilaichi), saffron (Zaafraan) and dry fruits like almonds and pistachios are added into it. Rabri milk is a rich source of calcium, essential minerals and vitamins.

Rabri is prepared from milk by simmering the whole milk for a prolonged period and adding sugar after achieving the desired concentration. The milk is kept in hot condition (near to boiling temperature) in a shallow karahi (name of utensil) with deep bottom to avoid spillage. The formation of a thin skin (malai) on the hot milk and air interface repeatedly takes place in this undisturbed condition. When a customer comes to buy milk, the milk seller removes malai (cream) from the surface

with a ladle to the cooler side of the karahi and sell the bottom portion of milk. This practice is continued for a long time (several hours). When the amount of milk is considerably reduced, it is boiled and concentrated to about 3-4 folds. Then sugar is added and finally the malai, which was collected on cooler side of the karahi is remixed with concentrated sweetened milk. This product is called rabri milk.

Figure 8 Rabri Milk

5.4 Khoya

Khoa, khoya, or mawa is a dairy food is widely used in the cuisines of the Indian subcontinent. It is made of either dried whole milk or milk thickened by heating in an open iron pan. In Pakistan, Khoya recipe is made by heating milk or by drying milk. It is serves as an ingredient to be used in Pakistani sweets like Halwa, Barfi and especially in Gulab Jamun. It can be stored for 2-3 days at room temperature and for a week in refrigerator.

Figure 9 Khoya

5.5 Installed and Operational Capacities

The total selling capacity of the proposed Dairy Shop is 360,000 liters annually. However, during the first year of operations, the shop is expected to sell milk only up to 60% of its total capacity. The shop would operate in a double shift of 16 hours per

day. Based on 360 working days in a year, the shop shall consume 216,000 liters of milk during initial year at 60% capacity for producing different dairy products.

Table 1 shows the installed and consumption of milk at 60% capacity of dairy shop and Table 2 shows milk consumption for the proposed products.

Table 1 Installed and Operational Capacity

Machinery	Unit of Measurement	Daily Storage Capacity	Annual Working Days	Maximum Annual Capacity	Capacity @ 60%
Chiller (D Shaped)	Liters	1,000	360	360,000	216,000

Table 2 Proposed product and Respective Milk Consumption

Product	Unit	Milk Consumption @ 60% (A)	Milk Consumption Ratio (B)	Product wise Milk Consumption (C=A*B)	Milk Consumption per Liter/KG of Product (D)	Production (KG/Liter) (E=C*B)
Fresh Milk	Liters	216,000	47%	101,520	1	101,520
Yogurt	KG		20%	43,200	1.10	39,273
Yogurt Lassi	Liters		11%	23,760	0.95	24,980
Hot Milk / Cold Milk	Liters		15%	32,400	1.10	29,455
Rabri Milk	Liters		5%	10,800	1.0	10,800
Khoya	KG		2%	4,320	5.0	864
Total						**206,891**

6 CRITICAL FACTORS

The following factors should be taken into account while making the investment decision:

- Availability of uninterrupted milk supply
- Availability of milk at minimum price
- Ensuring milk purity
- Ensuring hygiene of milk products and overall shop environment
- Consistent marketing of shop
- Reliable storage facility for milk and related products
- Uninterrupted power supply

7 GEOGRAPHICAL POTENTIAL FOR INVESTMENT

Pakistan is the 4h largest milk producing country in the world. According to Economic Survey of Pakistan 2018-19, milk is the largest single commodity within the livestock sector.

Target customers for the proposed Dairy shop will be the end consumers i.e., mainly household shoppers (families with children) residing in the urban areas of Pakistan such as Karachi, Lahore, Faisalabad, Hyderabad, Quetta, Peshawar, Okara, Mardan, Jhelum, Gujrat, Sahiwal, Jhang, Multan, Bahawalpur, etc. 32% of total population of Pakistan lives in urban areas. The province wise distribution of urban population (Census of 1998) is given in Table 3.[3] The cities mentioned earlier for establishing the diary business is due to higher milk demand in these cities, mainly due to their large populations. Therefore, the said project offers good investment opportunities for potential investment in all provinces of country.

The areas around major cities with road infrastructure, water and electricity supply represent a better choice for establishment of shop.

Table 3: Pakistan's Urban/Rural Population

Particulars	%	
	Urban	Rural
Pakistan	32.5	67.5
KPK	19.6	180.4
Punjab	31.3	68.7
Sindh	48.8	51.2

[3] Source: www.pbs.gov.pk/

Balochistan	23.9	76.1
Islamabad	65.7	34.3

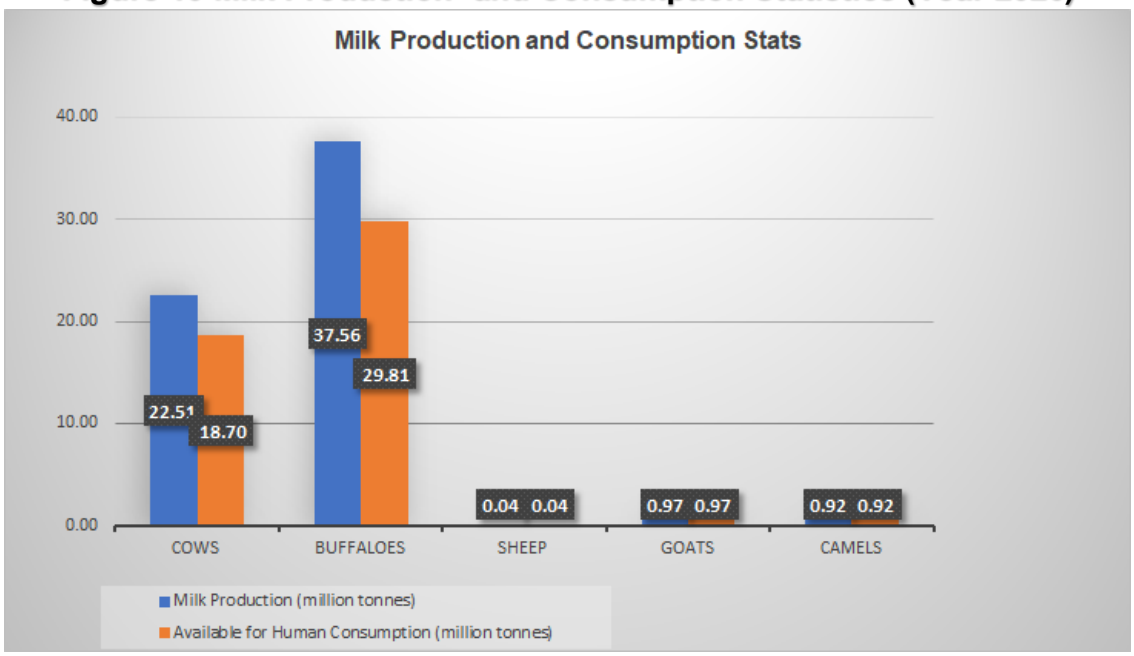
8 POTENTIAL TARGET CUSTOMERS / MARKETS

The milk and milk related products sold by the proposed shop shall be bought by the families living in urban areas and by other local shopkeepers and small hotels. Usually, demand for milk and yogurt increases during summer months due to increased consumption of whey (Lassi). There is also an increase in demand of milk and related products during the holy month of Ramadan.

Urban usage of milk is only 30% with the formal milk processing industry handling only 2-3% (around 42 million tons) of total milk production of the country. For the other 97%, a multilayered distribution system of middlemen has evolved for milk supply. With population of around 200 million, the per capita milk consumption in Pakistan reached 231 liters (231 Kg) in 2019[4]. It grew at an average rate of 3.2% a year in the last decade from 2009 to 2019[5] and almost doubled from 119 liters per person in 2011. Milk production in Pakistan is the second highest in Asia and the third highest in the world

The size of the opportunity for selling dairy products in Pakistan has attracted significant investments from European giants like Nestle, Fries Land Campina and Unilever and Commercial dairy farms like JK Dairy.

Figure 10 Milk Production[6] and Consumption Statistics (Year 2020)



[4] Research Report: Asia – Whole Fresh Milk – Market Analysis, Forecast, Size, Trends and Insights
[5] South Asia Investor Review
[6] Source: Economic Survey of Pakistan

The data presented in Figure 10 Milk Production and Consumption Statistics highlights those 48.51 million tons of milk is annually available for local consumption in Pakistan.

Figure 11 Province Wise[7] Milk Production

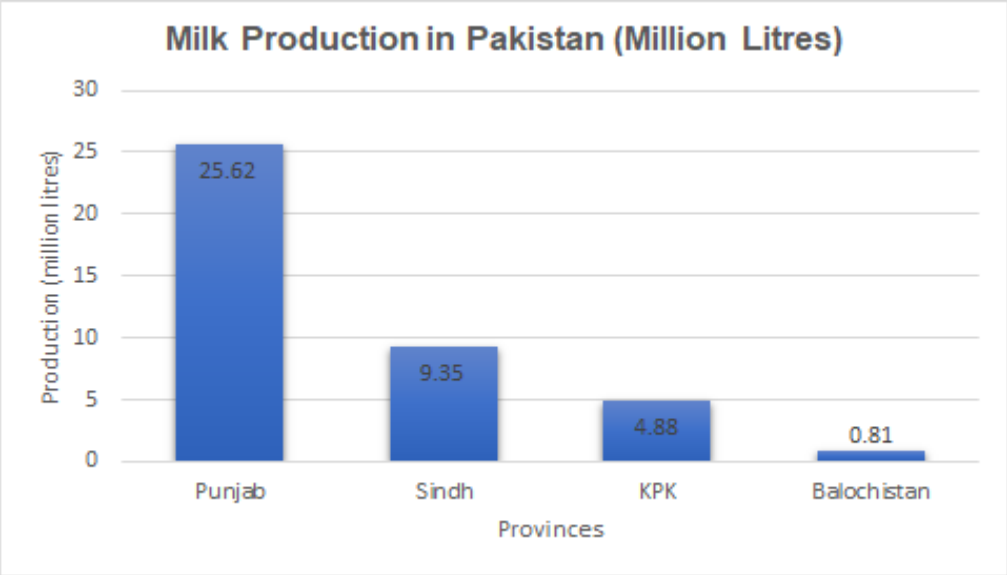


Figure 11 Province Wise Milk Production identifies that major share of the milk is produced in the province of Punjab.

9 PROJECT COST SUMMARY

A detailed financial model has been developed to analyze the commercial viability of Dairy Shop. Various assumptions relevant to revenue and costs, along with the results of the analysis, are outlined in this section.

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

All the figures in this financial model have been calculated after carefully taking into account the relevant assumptions and target market.

9.1 Project Economics

The financial feasibility analysis provides the information regarding projected Internal Rate of Return (IRR), Net Present Value (NPV) and Payback period of the study, which is shown in Table 4.

[7] Source: https://pide.org.pk/blog/milk-production-in-pakistan

Table 4: Financial Feasibility Analysis

Description	Project
IRR	89%
NPV (PKR)	37,613,257
Payback Period (years)	1.61
Projection Years	10
Discount rate used for NPV	15%

9.1.1 Financial Feasibility Analysis with 50% Debt

The financial feasibility analysis provides the information regarding projected IRR, NPV and payback period of the study on the basis of Debt: Equity Model (50:50), which is shown in Table 5.

Table 5 Financial Feasibility Analysis with 50% Debt

Description	Project
IRR	88%
NPV (PKR)	42,258,388
Payback Period (years)	1.65
Discount rate used for NPV	13%

9.2 Initial Project Cost Estimates

Table 6 provides fixed and working capital requirements for establishment and operations of the Dairy Shop business.

Table 6: Initial Project Cost

Cost Item	Cost (PKR)
Land	-
Renovation Cost	176,000
Machinery & equipment	605,000
Shop Equipment	533,000
Furniture & fixtures	177,000
Vehicles	242,400
Pre-operating costs	45,211
Advance for Milk	1,620,000
Security against Building Rent	180,000

Licenses, Permits	25,000
Total Capital Cost	**3,603,611**
Working Capital	
Upfront building rent	60,000
Cash	500,000
Total Working Capital	**560,000**
Total Project Cost	**4,163,611**

9.2.1 Land

The dairy shop will be established in a rented building to avoid the high cost of land. Suitable location for setting up of shop like this can be easily found on rent. Therefore, no land cost has been added to the project cost. Total space requirement for the proposed dairy shop has been estimated as 400 sq. feet.

The breakup of the space requirement is provided in Table 7.

Table 7 Land Area Breakup

Description	% Break-Up	Area Sq. Ft.
Shop Area	100%	400
Total		**400**

9.2.2 Building

There will be no cost of building since the shop will be rented. However, there will be a renovation cost required to make the shop ready to use for the business. The proposed shop requires estimated electricity load of 2-3 KW for which an electricity connection under the General Supply Tariff-Commercial single phase will be required. Cost of such electricity connection has not been included in the capital cost, since such electricity connections are normally available in such rented shops. Building rent of PKR 40,000 per month has been included in the operating cost.

Table 8 provides details of building renovation cost.

Table 8 Renovation Cost Details

Cost Item	Unit of Measurement	Total Liter / Area / Number	Cost/Unit/ Sq. Feet	Total Cost (PKR)
Paint Cost	Liters	40	500	20,000
Labor Cost-Paint	Feet	4,000	8	32,000
Tiles	Sq.Feet	400	120	48,000

Labour Cost-Tiles Fixing	Sq.Feet	400	40	16,000
Wall Racks	Units	4	15,000	60,000
Total Renovation Cost				**176,000**

9.2.3 Machinery and Equipment Requirement

Table 9 provides details of machinery and equipment required for the project.

Table 9 Machinery and Equipment Requirement

Cost Item	Unit(s)	Unit Cost (PKR)	Total Cost (PKR)
Chiller (D-shape) (1000 Liters)	1	375,000	375,000
Deep Freezer (18 Cubic Feet)	2	60,000	120,000
Electric Madhani	1	10,000	10,000
Stove	2	15,000	30,000
Gas Cylinder (20 Kg)	2	35,000	70,000
Total Cost			**605,000**

9.2.4 Shop Equipment Requirement

Table 10 presents the shop equipment requirement proposed for the unit.

Table 10 Shop Equipment Requirement

Cost Item	Units	Unit Cost (PKR)	Total Cost (PKR)
Air Conditioners (1.5 Ton Invertor)	2	90,000	180,000
Water Dispenser / Water Cooler	1	20,000	20,000
UPS with installation (3,000 watt)	1	90,000	90,000
Electronic Cash Register	1	20,000	20,000
Digital Weighing Scale (120 KG)	1	10,000	10,000
Milk Tanks (160 Liters)	2	15,000	30,000
Milk Tanks (40 Liters)	6	8,000	48,000
Wok (Día 2 meter, 100 liters Capacity)	2	20,000	40,000
Utensils for Yogurt	40	1,000	40,000
Serving and other Utensils		(Ref. Table 11)	55,000

Total	**533,000**

Table 11 presents the detail of serving and other utensils.

Table 11 Serving and Other Utensils

Cost Item	Units	Unit Cost (PKR)	Total Cost (PKR)
Plastic Drum	3	4,000	12,000
Aluminium Bowls for Measurement	5	500	2,500
Porcelain Bowls - For Service of Milk Products	40	250	10,000
Stainless Steel Glass - Lassi Service	40	300	12,000
Table Spoon - Stainless Steel	60	100	6,000
Stainless Steel Jugs	10	500	5,000
Milk Glass (Rabri + Cold Milk Service)	20	300	6,000
Silver Cups (Milk Measurement)	5	300	1,500
Total			**55,000**

9.2.5 Furniture and Fixture Requirement

Table 12 gives details of the furniture and fixture required for the project.

Table 12 Furniture and Fixtures Requirement

Cost Item	Units	Unit Cost (PKR)	Total Cost (PKR)
Counter	1	15,000	15,000
Executive Chairs	1	20,000	20,000
Ceiling Fan	4	4,500	18,000
Plastic Square Tables	4	11,000	44,000
Plastic Chairs	16	2,000	32,000
Waste Bins	4	2,000	8,000
Customer Service Counter	1	40,000	40,000
Total			**177,000**

9.2.6 Vehicle Requirement

Details of vehicles required for the project is given in Table 13.

Table 13 Vehicle Requirement

Cost Item	Unit(s)	Unit Cost (PKR)	Registration fee @ 1%	Total Cost (PKR)
Motorcycle (100 cc)	2	120,000	2,400	242,400
Total Cost				**242,400**

9.2.7 Pre-Operating Cost Requirement

Details of pre operating cost required for the project is given in Table 14.

Table 14 Pre-Operating Cost Requirement

Staff	No.	Hiring Before Year 0 (Months)	Unit Cost (PKR)	Total (PKR)
Salaries	1	1	25,000	25,000
Utilities Cost for One month			20,211	20,211
Total Cost				**45,211**

9.2.8 Advance for Milk

It is norm of the industry that suppliers of milk require advance against supply of milk. This is usually a handsome amount of money which a milk shop owner must arrange in advance to get uninterrupted supply of milk. Sector norms show that such amount is provided for up to 30 days of milk requirements of a milk shop. However, this amount may vary due to seasonal effect; which means that in summer, the amount of advance against milk may also be based on more than 30 days of milk requirement. Because of the significance of the amount, the advance against milk also sometimes becomes a barrier for new entrants.

Details of advance for milk for the project is given in Table 15.

Table 15 Advance for Milk

Cost Item	Volume per day (Liter)	No. of Days of advance	Total Milk (Liter)	Cost /Liter (PKR)	Total Cost (PKR)	Advance @ 60% (PKR)
Advance Security	1,000	30	30,000	90	2,700,000	1,620,000
Total Cost						**1,620,000**

9.2.9 Advance against Building Rent

Details of advance against building rent for the project are given in Table 16.

Table 16 Advance against Building Rent

Cost Item	Months	Monthly Rent	Total Cost (PKR)
Advance Security	3	60,000	180,000
Total Cost			**180,000**

9.2.10 Licenses, Permits

Details of licenses, permits for the project are given in Table 17.

Table 17 Licenses, Permits

License, Permits	No	Unit Cost (PKR)	Total Cost (PKR)
Punjab Food Authority	1	25,000	25,000
Total Cost			**25,000**

9.3 Breakeven Analysis

Table 18 shows calculation of break-even analysis.

Table 18 Break-Even Analysis

Description	Amount First Year (PKR)	Ratios
Sales (PKR)	29,400,060	100%
Variable Cost (PKR)	25,030,819	85%
Contribution (PKR)	4,369,241	15%
Fixed Cost (PKR)	1,783,993	6%
Contribution Margin	15%	
Breakeven Revenue	12,004,255	
Contribution Margin Per Unit	21	
Breakeven Quantity (Liters)	84,475	
Breakeven Capacity	24%	

9.4 Revenue Generation

Based on 60% capacity utilization, sales revenues, obtained by selling milk and its products during the first year of operations are shown in Table 19.

Table 19 Revenue Generation

Product	Sales Quantity (liters/kg)	Sale Price (per liters/kg)	Total Revenue (PKR)
Fresh Milk (Liters)	101,520	110	11,167,200
Yogurt (kg)	39,273	120	4,712,760
Yogurt Lassi (Liters)	24,980	150	3,747,000
Hot / Cold Milk (Liters)	29,455	180	5,301,900
Rabri Milk (Liters)	10,800	350	3,780,000
Khoya (kg)	864	800	691,200
Total Cost (PKR)			**29,400,060**

9.5 Variable Cost Estimate

Variable costs of the project have been provided in Table 20.

Table 20 Variable Cost Estimate

Description of Costs	Amount (PKR)
Material Cost	21,730,685
Operation costs 1 (Direct Labor)	2,040,000
Operating costs 3 (Electricity Bill)	242,533
Operating costs 4 (Gas Cost)	144,000
Operating costs 5 (Water cost)	36,000
Travelling expense	225,600
Communications expense (phone, internet, etc.)	169,200
Shop vehicles running expense	330,000
Shop expenses (stationery, janitorial services, etc.)	112,800
Total (PKR)	**25,030,819**

Table 21 Material Cost Estimate

Fresh Milk	Unit of Measurement	Consumption	Cost per KG (PKR)	Total Cost (PKR)
Fresh Milk	Liters	101,520	90	9,136,800
Yogurt	Grams	39,273	99	3,888,000
Yogurt Lassi	Grams	24,980	77.1	1,925,940
Hot / Cold Milk	Liters	29,455	125.5	3,696,545
Rabri Milk	Liters	10,800	249.5	2,694,600
Khoya	Grams	864	450	388,800
Total (PKR)				**21,730,685**

Table 22 Yogurt Cost Estimate

Yogurt	Unit of Measurement	Quantity	Cost/Kg (PKR)	Total Cost (PKR)
Fresh Milk	Liters	1.1	90	99
Total (PKR)				**99**

Table 23 Yogurt Lassi Cost Estimate

Yogurt Lassi	Unit of Measurement	Quantity	Cost/Kg (PKR)	Total Cost (PKR)
Fresh Milk	Milk Liters	250	90	22.5
Yogurt	Grams	400	99	39.6
Sugar @ Rs. 150/ Kg	Grams	100	15	15.0
Water	Grams	250		
Total (PKR)				**77.1**

Table 24 Hot/Cold Milk Cost Estimate

Hot/Cold Milk	Unit of Measurement	Quantity	Cost/Kg (PKR)	Total Cost (PKR)
Fresh Milk	Milk Liter	250	90	94.5
Sugar @ Rs. 150 per KG	Grams	400	150	15.0
Cardamom	Grams	100	8,000	16.0

Total (PKR)				**125.5**

Table 25 Rabri Milk Cost Estimate

Rabri Milk	Unit of Measurement	Quantity	Cost/Kg (PKR)	Total Cost (PKR)
Fresh Milk	Liters	0.7	90	63
Sugar @ Rs. 150/ Kg	Grams	200	150	30
Khoya	Grams	30	8,000	24
Custard	2 Table Spoon			20
Illaichi	Grams	2		16
Ispaghool @ Rs. 2 per Gram	Grams	2.5		5
Goond Katira	Half table spoon			10
Takhum Bilanga	Half table spoon			10
Rooh Afza @ Rs. 300 per Liter	ml	45		14
White Vermisilles @ Rs. 120 per 50Grams	Liters	20		48
Ice	Grams			10
Total (PKR)				**249.5**

Table 26 Khoya Cost Estimate

Khoya	Unit of Measurement	Quantity	Cost/Kg	Total Cost (PKR)
Fresh Milk	Liters	5	90	450
Total (PKR)				**450**

Table 27 Operation Costs – Direct Labor

Post	No of personnel	Monthly Salary (PKR)	Annual Salary (PKR)
Cook-Skilled	1	25,000	600,000
Cook-Helper	1	20,000	480,000
Waiter	1	20,000	480,000

Delivery Boy	1	20,000	480,000
Total (PKR)	**4**	**85,000**	**2,040,000**

Table 28 Operation Costs – Gas Cost

Cost Item	No of months	Cost per month	Total (PKR)
Gas	12	12,000[8]	144,000
Total (PKR)			**144,000**

Table 29 Operation Costs – Water Cost

Cost Item	No of months	Cost per month	Total (PKR)
Water	12	3,000	36,000
Total (PKR)			**36,000**

Table 30 Office Vehicle Running Expense

Particulars	Cost of Motorcycle (for Shop) (PKR)	Cost of Motorcycle for Delivery (PKR)	Total Cost (PKR)
Fuel cost	9,000	15,000	24,000
Service Charges	500	1,000	1,500
Oil & Tuning	1,000	1,000	2,000
Monthly expenses/ Motorcycle	**10,500**	**17,000**	**27,500**
No of Vehicles	1	1	2
Monthly vehicle running cost	10,500	17,000	27,500
Total (PKR)	**126,000**	**204,000**	**330,000**

Table 31 Variable Cost Assumptions

Description of Costs	Details
Travelling expense	40% of administration expense
Communications expense (phone, internet, etc.)	30% of administration expense
Office expenses (stationery, janitorial services, etc.)	20% of administration expense

[8] 3 Gas cylinder of 16 Kg each is required per month for proposed shop. (3,000*4=12,000)

9.6 Fixed Cost Estimate

Table 32 shows the estimated fixed cost of the project.

Table 32 Fixed Cost Estimate

Description of Costs	Amount (PKR)
Administration expense	564,000
Administration benefits expense	78,120
Building rental expense	720,000
Depreciation expense	263,330
Amortization of pre-operating costs	9,042
Amortization of legal, licensing, and training costs	2,500
Bad debt expense	147,000
Total	**1,783,993**

Table 33 Fixed Cost -Management Staff Salary

Post	No of personnel	Monthly Salary (PKR)	Annually Salary (PKR)
Shop Incharge / Cashier	1	25,000	300,000
Sale Counter Persons	1	22,000	264,000
Total	**2**	**47,000**	**564,000**

Table 34 Fixed Cost Assumptions

Description of Costs	Details
Administration benefits expense	3% of administration expense
Bad debt expense	0.5% of renvenue
Depreciation expense	
Renovation	10% of renovation cost
Machinery	15% of machinery cost
Equipment	15% of equipment cost

9.7 Human Resource Requirement

For the 1st year of operations, the Dairy Shop shall require the workforce at a salary cost shown in Table 35.

Table 35 Human Resource Requirement

Post	No. of Employees	Monthly Salary (PKR)	Annual Salary (PKR)
Shop Incharge / Cashier	1	25,000	300,000
Sale Counter Persons	1	22,000	264,000
Cook-Skilled	1	25,000	600,000
Cook-Helper	1	20,000	480,000
Waiter	1	20,000	480,000
Delivery Boy	1	20,000	480,000
Total	**6**	**132,000**	**2,604,000**

10 CONTACT DETAILS

Names of some relevant suppliers of machinery and equipment are provided in Table 36.

Table 36 Suppliers of Machinery and Equipment

Cost Item	Supplier Name	City	Contact Number	Email/Web Address
Chiller (1000 Liters)	Al-Madina Engineering and Dairy Equipment	Okara	9244-2700718	al-madina75@hotmail.com
Deep Freezer (18 Cubic Feet)	Waves Singer Pakistan Factory	Lahore	042 111313233	www.wavessinger.com
Gas Cylinder (20 Kg)	Awan Gas Suppliers	Lahore	042 35154564	
Stove	Admiral Home & Commercial Kitchen Appliances	Lahore	0300 4156602	www.admiral-appliances.com.pk
Electric Madhani	ST International	Lahore	92-61-65378778	www.suretrust.com.pk
Bismillah Milk Shop		Karachi	0315 5181501	www.bismillahmilkshop.com.pk
Mushtaq Milk Shop		Peshawar	(091) 2211680	

11 USEFUL WEB LINKS

Table 37 Useful Web Links

Name of Organization	Website
Small and Medium Enterprises Development Authority (SMEDA)	www.smeda.org.pk
National Business Development Program	www.nbdp.org.pk
Government of Pakistan	www.pakistan.gov.pk
Ministry of Industries and Production	www.moip.gov.pk
Government of Punjab	www.punjab.gov.pk
Trade Development Authority of Pakistan	www.tdap.gov.pk
Security and Exchange Commission of Pakistan	www.secp.gov.pk
State Bank of Pakistan	www.sbp.gov.pk
Federation of Pakistan Chambers of Commerce and Industry (FPCCI)	www.fpcci.com.pk
Punjab Small Industries Corporation	www.psic.gop.pk
Pakistan Agricultural Research Council	www.parc.gov.pk
Pakistan Dairy Association	www.pda.com.pk
Pakistan Agriculture & Dairy Farmers Association.	www.padfapak.org
Punjab Livestock & Dairy Development Board	https://www.plddb.pk/
Livestock & Dairy Development Research(KPK)	http://livestockres.kp.gov.pk/
Livestock & Fisheries Department Sindh	http://www.livestocksindh.gov.pk/
Livestock & Dairy Development Department AJK	https://livestock.ajk.gov.pk/
Dairy Solution Pvt Ltd	dairysolution.com
Cattlekit	cattlekit.com.pk
Dairy House Pakistan (Pvt) Ltd.	www.dairyhousepakistan.com

12 ANNEXURES

12.1 Income Statement

Calculations **SMEDA**

Income Statement

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Revenue	29,400,060	34,493,445	40,229,970	46,681,133	53,926,045	62,052,025	71,155,423	81,342,507	88,093,935	95,405,732
Cost of sales										
Cost of Goods sold - Fresh Milk	9,136,800	10,393,110	11,752,209	13,221,235	14,807,783	16,519,933	18,366,279	20,355,959	21,373,757	22,442,445
Cost of Goods sold - Yugort	3,888,000	4,422,600	5,000,940	5,626,058	6,301,184	7,029,759	7,815,438	8,662,110	9,095,216	9,549,976
Cost of Goods sold- Yogurt Lassi	1,925,940	2,190,757	2,477,240	2,786,895	3,121,323	3,482,226	3,871,415	4,290,819	4,505,360	4,730,628
Cost of Goods sold - Hot/Cold Milk	3,696,545	4,204,820	4,754,682	5,349,017	5,990,899	6,683,596	7,430,587	8,235,567	8,647,345	9,079,713
Cost of Goods sold - Rabri Milk	2,694,600	3,065,108	3,465,929	3,899,170	4,367,071	4,872,013	5,416,533	6,003,324	6,303,490	6,618,664
Cost of Goods sold - Khoya	388,800	442,260	500,094	562,606	630,118	702,976	781,544	866,211	909,522	954,998
Subtotal	21,730,685	24,718,655	27,951,094	31,444,981	35,218,378	39,290,503	43,681,795	48,413,989	50,834,689	53,376,423
Operation costs 1 (direct labor)	2,040,000	2,188,920	2,348,711	2,520,167	2,704,139	2,901,541	3,113,354	3,340,629	3,584,495	3,846,163
Operating costs 3 (Electricity Bill)	242,533	263,876	287,098	312,362	339,850	369,757	402,295	437,697	476,215	518,122
Operating costs 4 (Gas Cost)	144,000	156,672	170,459	185,460	201,780	219,537	238,856	259,875	282,744	307,626
Operating costs 5 (Water cost)	36,000	39,168	42,615	46,365	50,445	54,884	59,714	64,969	70,686	76,906
Total cost of sales	24,193,219	27,367,291	30,799,977	34,509,334	38,514,593	42,836,222	47,496,014	52,517,160	55,248,829	58,125,240
Gross Profit	5,206,841	7,126,154	9,429,993	12,171,798	15,411,452	19,215,803	23,659,408	28,825,348	32,845,107	37,280,492
General administration & selling expenses										
Administration expense	564,000	605,172	649,350	696,752	747,615	802,191	860,751	923,586	991,007	1,063,351
Administration benefits expense	78,120	83,823	89,942	96,508	103,553	111,112	119,223	127,926	137,265	147,285
Building rental expense	720,000	792,000	871,200	958,320	1,054,152	1,159,567	1,275,524	1,403,076	1,543,384	1,697,722
Travelling expense	225,600	242,069	259,740	278,701	299,046	320,876	344,300	369,434	396,403	425,340
Communications expense (phone, fax, mail, internet, etc.)	169,200	181,552	194,805	209,026	224,284	240,657	258,225	277,076	297,302	319,005
Office vehicles running expense	330,000	357,390	387,053	419,179	453,971	491,650	532,457	576,651	624,513	676,348
Office expenses (stationery, entertainment, janitorial services, etc	112,800	121,034	129,870	139,350	149,523	160,438	172,150	184,717	198,201	212,670
Depreciation expense	263,330	263,330	263,330	263,330	263,330	482,914	417,164	441,193	441,193	441,193
Amortization of pre-operating costs	9,042	9,042	9,042	9,042	9,042	-	-	-	-	-
Amortization of legal, licensing, and training costs	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500
Bad debt expense	147,000	172,467	201,150	233,406	269,630	310,260	355,777	406,713	440,470	477,029
Subtotal	2,621,593	2,830,379	3,057,981	3,306,113	3,576,646	4,082,166	4,338,071	4,712,872	5,072,239	5,462,444
Operating Income	2,585,249	4,295,775	6,372,012	8,865,685	11,834,806	15,133,637	19,321,337	24,112,476	27,772,868	31,818,048
Other income 2										
Gain / (loss) on sale of machinery & equipment	-	-	-	-	-	-	151,250	-	-	
Gain / (loss) on sale of office equipment	-	-	-	-	213,200	-	-	-	-	
Gain / (loss) on sale of office vehicles	-	-	-	-	96,960	-	-	-	-	
Earnings Before Interest & Taxes	2,585,249	4,295,775	6,372,012	8,865,685	12,144,966	15,133,637	19,472,587	24,112,476	27,772,868	31,818,048
Subtotal	-	-	-	-	-	-	-	-	-	-
Earnings Before Tax	2,585,249	4,295,775	6,372,012	8,865,685	12,144,966	15,133,637	19,472,587	24,112,476	27,772,868	31,818,048
Tax	367,501	708,732	1,350,203	2,222,989	3,370,737	4,416,772	5,935,405	7,559,366	8,840,503	10,256,316
NET PROFIT/(LOSS) AFTER TAX	**2,217,748**	**3,587,043**	**5,021,808**	**6,642,696**	**8,774,228**	**10,716,865**	**13,537,182**	**16,553,110**	**18,932,365**	**21,561,732**

12.2 Balance Sheet

Statement Summaries **SMEDA**

Balance Sheet

Rs. in actuals

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Assets											
Current assets											
Cash & Bank	500,000	1,339,816	2,624,333	3,878,712	5,236,354	12,107,774	22,824,531	35,207,539	51,810,283	70,735,425	96,187,810
Accounts receivable	-	1,208,222	1,312,880	1,535,413	1,785,845	2,067,271	2,383,111	2,737,139	3,133,519	3,481,571	3,770,541
Pre-paid building rent	60,000	66,000	72,600	79,860	87,846	96,631	106,294	116,923	128,615	141,477	-
Total Current Assets	560,000	2,614,038	4,009,813	5,493,984	7,110,045	14,271,675	25,313,935	38,061,601	55,072,417	74,358,472	99,958,351
Fixed assets											
Land	-	-	-	-	-	-	-	-	-	-	-
Machinery & equipment	605,000	514,250	423,500	332,750	242,000	151,250	60,500	1,036,864	881,334	725,805	570,275
Furniture & fixtures	177,000	150,450	123,900	97,350	70,800	338,497	267,810	205,973	161,836	117,699	562,720
Office vehicles	242,400	193,920	145,440	96,960	48,480	402,968	322,375	241,781	161,187	80,594	-
Office equipment	533,000	453,050	373,100	293,150	213,200	916,402	718,979	548,206	430,734	313,261	195,788
Advance payment milk supply	1,620,000	1,842,750	2,083,725	2,344,191	2,625,494	2,929,066	3,256,432	3,609,213	3,789,673	3,979,157	-
Rennovation Cost	176,000	158,400	140,800	123,200	105,600	346,602	303,142	259,681	216,221	172,761	129,301
Security against Building Rent	180,000	180,000	180,000	180,000	180,000	180,000	180,000	180,000	180,000	180,000	180,000
Total Fixed Assets	3,533,400	3,492,820	3,470,465	3,467,601	3,485,574	5,264,784	5,109,237	6,081,717	5,820,985	5,569,275	1,638,084
Intangible assets											
Pre-operation costs	45,211	36,169	27,127	18,084	9,042	-	-	-	-	-	-
Legal, licensing, & training costs	25,000	22,500	20,000	17,500	15,000	12,500	10,000	7,500	5,000	2,500	-
Total Intangible Assets	70,211	58,669	47,127	35,584	24,042	12,500	10,000	7,500	5,000	2,500	-
TOTAL ASSETS	4,163,611	6,165,527	7,527,405	8,997,170	10,619,660	19,548,960	30,433,172	44,150,819	60,898,402	79,930,248	101,596,435
Liabilities & Shareholders' Equity											
Current liabilities											
Accounts payable	-	893,042	1,015,835	1,148,675	1,292,259	1,447,331	1,614,678	1,795,142	1,989,616	2,089,097	2,193,552
Export re-finance facility	-	-	-	-	-	-	-	-	-	-	-
Total Current Liabilities	-	893,042	1,015,835	1,148,675	1,292,259	1,447,331	1,614,678	1,795,142	1,989,616	2,089,097	2,193,552
Other liabilities											
Total Long Term Liabilities	-	-	-	-	-	-	-	-	-	-	-
Shareholders' equity											
Paid-up capital	4,163,611	4,163,611	4,163,611	4,163,611	4,163,611	4,163,611	4,163,611	4,163,611	4,163,611	4,163,611	4,163,611
Retained earnings	-	1,108,874	2,347,958	3,684,883	5,163,790	13,938,018	24,654,883	38,192,065	54,745,175	73,677,540	95,239,272
Total Equity	4,163,611	5,272,485	6,511,569	7,848,494	9,327,401	18,101,629	28,818,494	42,355,677	58,908,786	77,841,151	99,402,883
TOTAL CAPITAL AND LIABILITI	4,163,611	6,165,527	7,527,405	8,997,170	10,619,660	19,548,960	30,433,172	44,150,819	60,898,402	79,930,248	101,596,435

12.3 Cash Flow Statement

Statement Summaries **SMEDA**

Cash Flow Statement

Rs. in actuals

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Operating activities											
Net profit	-	2,217,748	3,587,043	5,021,808	6,642,696	8,774,228	10,716,865	13,537,182	16,553,110	18,932,365	21,561,732
Add: depreciation expense	-	263,330	263,330	263,330	263,330	263,330	482,914	417,164	441,193	441,193	441,193
amortization expense	-	11,542	11,542	11,542	11,542	11,542	2,500	2,500	2,500	2,500	2,500
Deferred income tax	-	-	-	-	-	-	-	-	-	-	-
Accounts receivable	-	(1,208,222)	(104,659)	(222,532)	(250,432)	(281,426)	(315,840)	(354,028)	(396,380)	(348,052)	(288,970)
Finished good inventory	-	-	-	-	-	-	-	-	-	-	-
Equipment inventory	-	-	-	-	-	-	-	-	-	-	-
Raw material inventory	-	-	-	-	-	-	-	-	-	-	-
Pre-paid building rent	(60,000)	(6,000)	(6,600)	(7,260)	(7,986)	(8,785)	(9,663)	(10,629)	(11,692)	(12,862)	141,477
Pre-paid lease interest	-	-	-	-	-	-	-	-	-	-	-
Advance insurance premium	-	-	-	-	-	-	-	-	-	-	-
Accounts payable	-	893,042	122,793	132,840	143,584	155,071	167,348	180,464	194,474	99,481	104,455
Other liabilities	-	-	-	-	-	-	-	-	-	-	-
Cash provided by operations	(60,000)	2,171,440	3,873,449	5,199,728	6,802,735	8,913,961	11,044,123	13,772,652	16,783,205	19,114,626	21,962,386
Financing activities											
Issuance of shares	4,163,611	-	-	-	-	-	-	-	-	-	-
Purchase of (treasury) shares	-	-	-	-	-	-	-	-	-	-	-
Cash provided by / (used for) financ	4,163,611	-	-	-	-	-	-	-	-	-	-
Investing activities											
Capital expenditure	(3,603,611)	(222,750)	(240,975)	(260,466)	(281,303)	(2,042,541)	(327,366)	(1,389,644)	(180,461)	(189,484)	3,489,999
Acquisitions	-	-	-	-	-	-	-	-	-	-	-
Cash (used for) / provided by invest	(3,603,611)	(222,750)	(240,975)	(260,466)	(281,303)	(2,042,541)	(327,366)	(1,389,644)	(180,461)	(189,484)	3,489,999
NET CASH	500,000	1,948,690	3,632,474	4,939,263	6,521,432	6,871,420	10,716,757	12,383,008	16,602,744	18,925,142	25,452,385

13 KEY ASSUMPTIONS

13.1 Operating Cost Assumptions

Table 38 Operating Cost Assumptions

Description	Details
Building rent growth rate	10%
Furniture and fixture depreciation	15%
Vehicle depreciation	15%
Office equipment depreciation	15%
Inflation growth rate	8.3%
Wage growth rate	7.3%
Electricity price growth rate	8.8%
Office equipment price growth rate	8.0%
Office vehicle price growth rate	10.7%

13.2 Revenue Assumptions

Table 39 Revenue Assumptions

Description	Details
Sale price growth rate	8.3%
Initial year capacity utilization	60%
Capacity growth rate	5%
Maximum capacity utilization	95%

13.3 Financial Assumptions

Table 40 Financial Assumptions

Description	Details
Project life (Years)	10
Debt: Equity	0:100
Discount Rate (Used For Equity)	15%
Discount Rate (Used For Debt: Equity 50:50)	13%

13.4 Cash Flow Assumptions

Table 41 Cash Flow Assumptions

Description	Days
Accounts receivable	15
Accounts payable	10