

FEASIBILITY STUDY
ON
MAZARI AGRI-BUSINESS COMPLEX

Prepared By

NATIONAL DEVELOPMENT FINANCE CORPORATION

PD&C DIVISION

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MAZARI AGRI-BUSINESS COMPLEX

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S U M M A R Y

The project envisages re-activating the existing Karachi Milk Plant capable of processing 25,000 litres of fresh milk per day. Other products to be produced shall be Ice Cream, Yogurt and butter.

Mr. A.K.M. Mazari and his family will be the sponsors of this project.

Total cost of the proposed project is estimated at Rs.78.18 million including foreign exchange component of Rs.31.49 million equivalent. The project is proposed to be financed through Debt/Equity ratio of 70:30.

<u>Cost of the Project</u>	<u>Rs. in Million</u>
Local Currency	46.69
Foreign Currency	31.49
Total	<u>78.18</u>

Financial Plan

Equity	23.45
<u>Loan</u>	
Long term local currency	23.24
Long term foreign currency	31.49
	<u>54.73</u>
Total	<u>78.18</u>

It is **expected** that 8 months will be needed for full commercial operations. Assuming completion of lease by May 15, 1984, full production shall commence by January 30, 1984.

To achieve 100% capacity utilization, 25,000 litres of milk per day shall be required which shall be procured from the vicinity of Sadiqabad and partly from the Dairy Farm being set up the sponsors in that area. The milk shall be chilled at the Dairy Farm and then transported to Karachi Milk Plant for further processing. No shortage of milk is anticipated.

Milk and its products shall be marketed through wholesale and retail marketing channels at Karachi. The management shall provide cabinets at the Supermarkets to store the milk and its products. Milk and its products shall be of high quality and will compare favourably with the existing products now available in the market.

PROFITABILITY

The project is commercially and financially feasible. However, during the first two years the project shall incur losses of Rs.14.02 and Rs.4.25 million respectively. In the subsequent years it is expected to earn an average annual profit of Rs.27 million.

The sponsors will receive substantial return on their investment and the project shall pay itself in 5 years. Financial analysis has been carried out for 10 years and excepting first two years the project is

not expected to run into liquidity problems and shall serve debt adequately.

The project will provide employment opportunities to 134 persons in addition to indirect employment to a large number of persons.

MAZARI AGRI BUSINESS COMPLEX

Leasing Karachi Milk Plant

G E N E R A L

The Karachi Milk Plant was established in the year 1965. The plant and equipment was donated to the Government of Sind by WHO for producing pasteurised milk. The plant operated till 1980 but thereafter due to heavy losses its operations came to an end. Since then the plant is lying closed.

In early 1982, a local businessman Mr. A.K.M. Mazari contracted with M/s. IDC (International Development Corporation, USA) who have rich experience of running similar milk plants in the world, to provide necessary consultancy services for leasing existing Karachi Milk Plant or establishing a new milk and milk products plant. The NDFC remained closely associated while this report was being prepared and shared a part of the consultancy expenses incurred on the preparation of this feasibility report.

IDC consultants visited Pakistan in February 1982, May, 1982 and then in October, 1982. The consultants along with officials of NDFC and Mr. Mazari visited the Karachi Milk Plant, and held discussions with the Sind Government officials so as to collect necessary information and assess the condition of the plant. On the basis of discussions held and plant visits they submitted their feasibility studies on both the above alternatives.

This paper comprises feasibility study prepared by the consultants on the first alternative i.e. leasing of Karachi Milk Plant to NDFC.

THE PROJECT

The project shall be capable of processing 25,000 litres of milk per day (7.5 million litres per annum (300 days) and other products as shown below:

25,000 litres of fluid milk products per day (Single shift) reconstituted products, production capacity shall increase in keeping with increase in demand.

3,500 litres of frozen products (ice cream) per day which include ice cream bulk, cones, cups and stick novelties.

1,500 litres of yogurt

250 kilograms of butter

COST OF THE PROJECT

Cost of the project shall be as under:

(Rs. in 000)

	<u>Local Currency</u>	<u>Foreign Currency</u>	<u>Total</u>
Building & Improvement	2,638	250	2,888
Existing Equipment Repairs	475	750	1,225
<u>New Equipment</u>			
Fluid	-	8,575	8,575
Frozen	2,750	13,937	16,687
Marketing Programme	21,338	3,350	24,688
Leasehold Improvement	4,700	-	4,700
Milk Collection Vehicles	-	4,625	4,625
Working Capital	14,787	-	14,787
	<u>46,688</u>	<u>31,487</u>	<u>78,175</u>

Means of Financing

(Rs. in 000)

Loans

Long term FCY	31,487	
LCY	<u>23,235</u>	
		54,722
Equity		<u>23,453</u>
		<u>78,175</u>
Debt Equity Ratio	70:30	

FACILITIES FOR THE PROJECT

Karachi Milk Plant is situated on a plot of land covering about 7 acres of land within boundry walls, in the heart of the city. The building has constructed area of 5,500 square yds. The existing plant and equipment is capable to receive and process 25,000 litres of milk per day. Auxiliary equipment for making butter is also available. The plant is lying closed since 1980 and to make it operational, the following expenses shall be incurred initially.

(Rs. in 000)

	<u>L C Y</u>	<u>F C Y</u>	<u>TOTAL</u>
Building Improvement	2,638	250	2,888
Repair, Existing Equipment	475	750	1,225
Leasehold Improvement	4,700	-	4,700
	<u>7,813</u>	<u>1,000</u>	<u>8,813</u>

Water is available at the project. However, Gas and Electricity connections shall have to be made available for the project.

CORPORATE SET UP

In the event of leasing the plant to NDFC, the plant shall be subleased to Mr. A.K.M. Mazari who is an experienced business man. The project shall be implemented in two stages. In the first stage

Mr. A.K.M. Mazari shall form a private Limited Company which shall operate the Karachi Milk Plant. As soon as necessary formalities are completed, it shall be registered as a Joint Stock Comapany.

IDC shall provide technical and support services to the Company for which a technical assistance agreement shall be signed between Mr. A.K.M. Mazari and the consultants. IDC has also arranged participation of US AID in the project consisting of participation in feasibility financing and expressed their willingness to provide US\$ 2 million for the project.

PRODUCTION CAPACITY

Production capacity during year 1 to 10 shall be as under:

	<u>Year</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5-10</u>
Production Capacity (%)		33	61	109	152	198
Shifts of 8 hours 300 days per annum	(nos)	1	1	1	2	2

The plant shall operate on single shift basis in the earlier 3 years of its operations. In year 4 it shall operate on 2 shifts in view of time required for cleaning of equipment. In subsequent years 5-10 it shall also operate on 2 shifts.

Production

Projected production of the plant shall be as under:

<u>Capacity Utilization</u>	<u>Shifts</u>	<u>Milk $\frac{1}{2}$ L</u>	<u>Yogurt $\frac{1}{4}$ L</u>	<u>Butter 250 gm</u>	<u>Frozen Ice Cream</u>
33%	1	6.6	1.8	0.30	13.0
61%	1	12.6	3.6	0.45	15.6
109%	1	23.4	5.4	0.60	18.7
152%	2	33.2	6.5	0.78	22.5
198%	2	43.6	7.8	0.96	27.6

Sales

Based on above figure, the value wise sales shall be as under:

	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
Pak Rs. in million	23.25	80.73	120.73	160.55	203.40

The details are provided in Annexure VI.

Manufacturing Process

The processing of raw and reconstituted milk and the production of milk products require a very high degree of maintenance of sanitary conditions and quality control. Modern production of foodstuffs to meet consumer and health standards require technology, training and close management control.

a. Collection and receiving

Raw milk produced at the dairy farm and collection from local producers will be shipped under chilled and sanitary conditions to the Karachi Plant.

b. Initial Processing

The received milk is first weighted, chilled and put into temporary storage tanks.

c. Fluid Milk Products

Pasteurization will be accomplished 12 hours after storage in chilled tanks and then further processed by the UHT system for sterilisation and long life. This finished product is then packaged in various sizes and then moved to storage for ultimate distribution to city depots and through the in-house distribution organization.

d. Butter

The quantity of butter production is in direct relationship to the amount of milk received and the utilization of the milk fat in fluid form such as cream. The surplus cream will be pasteurised and stored until churning. The butter from the churn will be packaged in 250 gram cubes and stored at 40°C until marketed.

e. Yogurt

Yogurt base will be processed and immediately cultured, packaged and placed in an incubator. After the base has developed the desired acidity the product will be cooled to stop the culture activity and held at 40°C until marketed.

f. Ice Cream

The Ice Cream mix will be blended and held for a period to allow for complete hydration of the dry ingredients. The mix is then processed and stored in refrigerated tanks until the freezing process begins, the mix is flavoured and then pumped into the ice cream freezer which discharges a semi-solid product that can be flavoured as desired with fruit and other food ingredients and then packaged. The product is then stored at 32°C for further hardening and then stored until marketed.

IMPLEMENTATION SCHEDULE

It is assumed that the lease on the KMP will be finalised by May 15, 1983 and that approval to proceed with project development of stage one of Phase-1 will be granted by May 30, 1983. It is therefore, planned to have KMP in operation and distribution and marketing functions operating by December 15, 1983.

Experiment orders would be placed in May, 1983. This would include those orders for imported equipment such as packaging equipment, as well as fabrication of plant and marketing equipment locally such as cabinets, wire cases, distribution and marketing vehicles.

Concurrent with the above, clearing and leasehold improvements on the existing plant would commence in May, 1983, as well as repairs on existing equipment. This will require approximately three to four months so that by September 30, 1983 the plant will be ready to receive the new equipment for installation. During this same period the waste water treatment facility will be installed as well as all grounds as outside work.

During the remaining two months period operating personnel will be trained and during December various trial equipment runs will be accomplished. It is anticipated therefore, that full milk plant and marketing operations can commence by January 30, 1984

Equipment re-arrangement, construction, and equipment order time and delivery associated with ice cream production will require additional time. The above plus start up operations, training etc. therefore, indicate full ice cream production by March 30, 1984. Therefore, the entire plant and product line should be fully operable by March 30, 1984.

RAW MATERIAL

Raw buffalo and cow milk is the main raw material required for the project. The project would require 25,000 litres of milk per day at full capacity operations. The milk for the project will be collected from areas comprising Sadiqabad, Rahim Yar Khan and Khanpur (Punjab) The milk shall be collected at different milk collection centres to be established for the purpose and then transported to the Dairy Farm at Bungla Ichha (Sadiqabad). The milk shall then be transported to Karachi Milk Plant in chilled and sanitary conditions for further processing.

To determine the milk availability for the project an NDFC official undertook the survey of these areas. In this connection he held discussions with various Government

officials in Rahim Yar Khan, Sadiqabad and local milk producers. According to his findings (detailed report is produced as annexure III Page: these areas are rich in milk and continuous and un-interrupted supply of milk shall be available from there during the life of the project. Besides, the sponsors shall be able to meet one third of their daily requirements of milk by raising a herd of imported animals at their own dairy farm at Bungla Ichha Farms (Sadiqabad)

The other materials required by the project are packing materials chemicals and dry milk powder which are locally available No difficulty in meeting the project's raw material requirements is anticipated.

MARKET

Milk

Milk is one of the basic items of human food. Although Pakistan is rich in cattle resources, yet the supply of milk in big cities is generally inadequate and unhygienic There are very few dairies using scientific methods of producing milk and other milk products.

The proposed project at Karachi aims at supplying sterilised milk and high quality ice cream. Marketing prospects for sterilised milk in Karachi and adjoining areas are discussed below:

Sterilized Milk

The major part of the requirements of milk in Karachi is met by the traditional suppliers of milk who often supply adulterated milk which is not always free from harmful bacteria. To substitute the adulterated

milk many middle and high class families have diverted to use milk powder of foreign origin. The import of such milk powder have recorded an appreciable increase during the past few years and major part of the milk is consumed in the Karachi market alone. The details of the import of the milk powder in the country over the past few years are given below:

IMPORT OF MILK POWDER IN
PAKISTAN

(Qty. & Value in million)

	<u>Quantity</u> Kg	<u>Value</u>
1977-78	30.9	223.6
1978-79	18.7	172.3
1979-80	35.0	296.0
1980-81	27.6	329.3
1981-82	23.8	344.8

Source: C.S.O.

Since past few years the import of milk in Pakistan in terms of value is showing gradual increase and foreign exchange equivalent of Rs.344.8 million were spent on import of milk powders during 1981-82. The increase dependence upon milk can also be visualised from the fact that a tin of 1800 grams milk which was sold in retail market at Rs.55/- to Rs.60/- in 1981 is being sold at Rs.105-110 per tin in 1983.

In view of consumers preference for good quality milk specially in the higher income bracket, it is estimated that presently 20% of Karachi's population and adjoining areas (or 1,050,000 persons) can be the potential buyers of sterilized milk. The requirements of the group for milk (on the basis of national per capita consumption of 90 litres per annum, as reported by Joint Secretary, Livestock Department, Government of Pakistan) shall be about 94.5 million litres per annum or 259,000 litres per day.

C A P A C I T Y

Milk

Presently there are 20 milk processing plants in the country with an installed capacity of processing 550,000 litres of milk per day. However, excepting Milkpak Lahore, with an installed capacity of processing 100,000 litres of sterilised milk per day and other plants are engaged in processing pasteurised milk. Pasteurized milk has relatively short span of life and is sold in the local markets only. Sterilised milk on the other hand has long shelf life of about six (6) months and can be sold in distant markets of the country without any refrigeration facility.

Sterilized Milk

	<u>Installed</u>	<u>Capacity under installation</u> litres per day	<u>Total</u>
Milkpak Ltd. Lahore	100,000	-	100,000
3 Milk Plants of Sind Government	-	144,000	144,000
1 Milk Plant by a private party at Kotri	-	30,000	30,000
	<u>100,000</u>	<u>174,000</u>	<u>274,000</u>

Milkpak Lahore is in production and reliable quarters are of the opinion that it is selling about 30,000 litres of milk in Karachi. Three milk plants which are being set-up by Sind Government with the assistance of ADBP with combined capacity of 144,000 litres per day shall be located at Hyderabad, Sukkur and Nawabshah. The fourth plant is being set-up at Kotri by a private party with the ADBP assistance and shall have the capacity to process 30,000 litres of milk per day.

Due to long life of sterilized milk, it can be sold in all urban areas, viz. Karachi, Hyderabad, Lahore, Sukkur, Faisalabad, Islamabad etc. However, Karachi shall be the biggest single market for milk and each one of them shall endeavour to capture maximum share of the market. Assuming that 75% production of the milk ~~for~~ Lahore and other plants under installation is directed to Karachi market (or about 206,000 litres per day by December, 1983) there shall still remain a gap between the demand and supply of milk of about 53,000 litres per day and it is anticipated

that the gap between potential demand and supply of milk shall widen at the rate of 10 percent per annum, so as to reach 70,543 litres of milk per day by December 1986 as shown below:

Gap in Supply & Demand for
Milk in Karachi

<u>End</u>	<u>Litres per day</u>
December-83	53,000
December-84	58,300
December-85	64,130
December-86	70,543

By December, 1986 the gap will be more than double of the present project which envisages production of 25,000 litres of milk per day. Therefore, the project is not likely to face any marketing problem.

ICE CREAM

The report for Ice Cream market prepared by our Market Research Division is enclosed as Annexure III (A). Although there is surplus capacity for the ice cream, marketing opportunity exists for high quality ice cream for high income segment of the market.

ECONOMIC JUSTIFICATION

The project aims at producing basic items of daily consumption in more hygienic, nutritive and lasting form. The project shall process and market sterilised milk in aseptic disposable packing. In this packing the sterilised milk can be kept upto 6 months at room temperature i.e. without any refrigeration. As such, climate and

distance no longer limit the milk distribution. At present a large quantity of milk in area surrounding Sadiqabad is wasted each year for want of proper preservation and sterilisation facilities. It is expected that with the implementation of the proposed project, maximum advantage would be gained from the available milk resources, thus also enhancing the income of the farmers. The project shall provide direct employment to 167 persons and in-numberable indirect job opportunities shall be created with the implementation of the project. Therefore, the project is also justified from economic angle.

FINANCIAL PROJECTIONS

Assumptions

The financial appraisal has been based on the following assumptions:

1. Life of the project shall be 10 years.
2. The project shall have tax holiday during the life of the project.
3. Debt Equity Ratio shall be 70:30.
4. Plant shall operate 300 days per annum.
5. Raw material components viz, raw milk, dry milk and packing expenses are assumed to be 50 percent of gross sales. Other input costs i.e. utilities, chemicals, insurance, selling expenses, repair and maintenance costs are on the basis of actual experience of other similar milk plants in the world.

G. Depreciation

Depreciation has been taken at 10 percent per annum on straight line basis for buildings, marketing equipment, plant and equipment. Vehicles have been depreciated at 20 percent per annum, whereas marketing research and advertising has been charged to first year of operations.

b. Profitability

On the above mentioned assumptions, the profit has been projected for 10 years. First two years of operations show a net loss of Rs.14.02 and Rs.4.25 million respectively. In the third year it earns a profit of Rs.7.98 million which increases to Rs.19.71, Rs.32.93, Rs.38.12, Rs.38.35, Rs.38.59, Rs.38.64 and Rs.38.56 million respectively in the subsequent years viz years 4 to 10.

Other statements such as detailed cost of project, sale projection statement, schedule of working capital, schedule of financial rate of return, cost of production per unit are given as annexure to this brief.

OTHER ASSUMPTIONS:

1. Salary & wages and Admin expenses to increase by 10 percent per annum (Annuxure VII & VIII)
2. Allowances & Commissions
 - Trade Allwoances 1.5 percent of gross sales
 - Sales Commissions 12 percent of gross sales
3. Advertising Expenses 3.5% of gross sales per annum
4. Interest costs have been assumed at 14 percent per annum and Rs.12.50 have been assumed to be equivalent to US \$ 1.00.
5. Management contract costs for milk processing operations have been assumed to be 25 percent of the total management costs.
6. Unit Cost of Production

Raw milk will be the main raw material required for milk processing operations. It is available in sufficient quantities in the District Rajanpur from where it shall be purchased at Rs.2.44 per litre. The breakdown of cost of production of milk is given follows:

MILK COST OF PRODUCTION

(½ litre milk)

	<u>Rupees</u>
Milk ½ Litre	1.22
Less: Fats and addition of milk solid	0.22
	<hr/>
Ingredients cost	1.00
Transport 200/ton	0.10
Labour	0.15
Package	0.40
	<hr/>
	1.65
Sales expenses 20%	0.33
	<hr/>
	1.98
Administration expenses	1.139
	<hr/>
	2.119
Distribution expenses 5%	0.110
	<hr/>
	2.229
Retail commission 6%	0.140
	<hr/>
	2.369
	<hr/>
	or Rs.2.37
	=====

7. PRICES

Presently milk-pak is marketing milk in Karachi @ Rs.3/- per ½ litre pack. Butter is being marketed by different suppliers @ Rs.10/- per 250 gram. However, the following net selling prices have been assumed for the project.

Milk white & flavoured ½ litre Rs. 2.75

F r o z e n

Bulk 12-L	Rs.144.00
Cones	Rs. 3.50
Stick Novelties	Rs. 2.00
Cups	Rs. 2.00

Working capital requirements have been worked out as under:

	(Rs. in 000)
Raw milk 2 months at 60% capacity at Rs.2.44 per litre	3,514
Milk sales 2 months at 60% capacity @ Rs.5.50 per litre	7,920
Chemicals-1 year	450
Pakaging Material-4 months	2,310
One month salary	
Labour	344
Admin	250
	<hr/>
	594
	<hr/>
	14,788
	<hr/>

At the end of 10th year the salvage value of working capital shall be Rs.14.788 million.

Miscellaneous expenses have been assumed
as under:

(Rs. in Million)

	Y e a r s				
	<u>1</u>	<u>2</u>	<u>2</u>	<u>4</u>	<u>5-10</u>
Tax & Licence	225	300	375	375	375
Allowance for bad debts	1,000	1,000	1,450	2,000	2,538
Misc. expenses	150	188	225	263	375
Wire cases	<u>500</u>	<u>625</u>	<u>750</u>	<u>875</u>	<u>1,000</u>
	<u>1,875</u>	<u>2,113</u>	<u>2,800</u>	<u>3,513</u>	<u>4,288</u>

MAZARI AGRI BUSINESS COMPLEX (Rs. in 000)
Internal Financial Rate of Return

Year	Cash Outlay	Cash Generation	Disocunted 20%	Cash flows 23%
0	(73,550)	-	(73,550)	(73,550)
1.	(1,500)	(6,131)	(6,359)	(6,204)
2.	(750)	3,017	1,574	1,498
3.	(1,625)	15,241	7,880	7,317
4.	(750)	26,974	12,647	11,457
5.	-	40,191	16,152	14,276
6.	-	43,404	14,536	12,534
7.	-	43,633	12,177	10,244
8.	-	43,874	10,204	8,375
9.	-	43,923	8,513	6,816
10.	-	58,635	9,470	7,398
			(+) <u>13,244</u>	(-) <u>1,839</u>

Salvage Value (Rs. in 000)

Working Capital 14,788

$$\begin{aligned} \text{IFRR} &= 20 + \left(3 \times \frac{13,244}{13,244 + 1,839} \right) \\ &= 20 + 3 \times \frac{13,244}{19,083} = 22.08\% \end{aligned}$$

MAZARI AGRI-BUSINESS COMPLEX
Leasing Karachi Milk Plant

Annexure II

PROJECTED INCOME STATEMENT

(Rs. in 000)

	1	2	3	4	5	6	7	8	9	10
Gross Sales	53,250	80,730	120,730	160,550	203,400	203,400	203,400	203,400	203,400	203,400
Less trade discount @ 1.5%	799	1,211	1,811	2,408	3,051	3,051	3,051	3,051	3,051	3,051
	52,451	79,519	118,919	158,142	200,349	200,349	200,349	200,349	200,349	200,349
Less:										
Raw Material @ 50%	26,625	40,635	60,365	80,275	101,700	101,700	101,700	101,700	101,700	101,700
Wages and Salaries	2,829	3,112	3,423	3,765	4,142	4,556	5,012	5,513	6,064	6,670
Utilities	3,125	3,713	4,713	5,813	6,250	6,250	6,250	6,250	6,250	6,250
Chemicals	225	300	375	450	450	450	450	450	450	450
Repair & Maintenance	300	450	600	750	1,050	1,050	1,050	1,050	1,050	1,050
Insurance	150	225	225	225	225	225	225	225	225	225
Depreciation	7,889	7,264	7,264	7,264	7,264	5,288	5,288	5,288	5,288	5,288
Miscellaneous	1,875	2,113	2,800	3,513	4,288	4,288	4,288	4,288	4,288	4,288
Lease Payment	2,668	2,668	2,668	2,668	2,668	-	-	-	-	-
Cost of Sales	45,686	60,480	82,433	104,723	128,037	123,807	124,263	124,764	125,315	125,921
<u>OPERATING EXPENSES</u>										
Admn. Expenses	509	559	615	676	744	818	900	990	1,089	1,198
Consultants	3,025	2,250	2,250	2,250	2,250	2,250	2,250	2,250	2,250	2,250
Interest	8,997	7,963	6,930	5,898	4,864	3,831	3,064	2,232	1,533	894
Advertising 3.5%	1,864	2,826	4,226	5,619	7,119	7,119	7,119	7,119	7,119	7,119
Sales Commission	6,390	9,688	14,488	19,266	24,408	24,408	24,408	24,408	24,408	24,408
Total Operating Expense	20,785	23,286	28,509	33,709	39,385	38,426	37,741	36,999	36,399	35,869
Total Expenses	66,471	83,766	110,942	138,432	167,422	162,235	162,004	161,763	161,714	161,790
Profit/(Loss)	(14,020)	(4,247)	7,977	19,710	32,927	38,116	38,345	38,586	38,635	38,559
Depreciation	7,889	7,264	7,264	7,264	7,264	5,288	5,288	5,288	5,288	5,288
CASH GENERATION	(6,131)	3,017	15,241	26,974	40,191	43,404	43,633	43,874	43,923	43,847

BEST AVAILABLE DOCUMENT

Raw MaterialsMilk

Raw milk is the basic raw material for the project. Adequate quantities of milk are available in the District Rajanpur which comprises four Tehsils namely Sadiqabad, Khanpur, Rahimyar Khan and Liaquatpur. Milk will be procured from three Tehsils of the District viz. Sadiqabad, Khanpur and Rahimyar Khan which are within the distance of 50 miles from the Bungla Ichha Farm. The quantity of the milk available from these area can be calculated on the basis of animal population data provided by the Department of Livestock, Government of Punjab, Rahimyar Khan. This data is based on Animal Population Census carried out during 1970 and 1976, as shown below:

<u>Y e a r s</u>	<u>Buffalows, Cows (female)</u> Nos.
1970	148,460
1976	244,406
1982*	327,528

Source: Dr. S.A. Rahim
Assistant Director Livestock,
Rahimyar Khan

*Estimated

During 1970-76 the female animal population grew at the rate of 8.6% per annum. However, animal population growth during (1977-82) has been assumed conservatively at 5% per annum. As Licutpur Tehsil of District Rajanpur is at a distance of more than 50 miles from Bungla Ichha Dairy Farm, and it shall not be suitable to serve as a milk pocket, for this project, therefore, after deduction of estimated population of 81,882 animals in this region, the areas from where the milk shall be collected shall be left with an estimated female population of 245,646 animal heads.

Livestock Department has estimated that availability of milk per head of animal is 5 litres per day for 215 days (150 days are assumed to be dry period per animal per annum). However, to eliminate any chance of over-estimation of milk supply, it has been assumed that 2.5 litres of milk shall be available per day per annum. Therefore, the supply of milk is estimated to be around 132 million litres of milk per annum or 362,000 litres per day as shown below:

Present Availability of Milk

No. of animal	Daily milk per animal (litre)	Annual supply of milk 215 days, year (Miln. Litre)	Daily Milk availability (000 litre)
245,646	2.5	132.0	362

As against the estimated availability of 362,000 litres of milk per day, the project shall require 25,000 litres per day which constitutes (7%) or a negligible part of total supply of milk in the area. In addition, sponsors shall be meeting 30% of their requirements of milk from imported animals at Bungla Iccha Dairy Farm. Therefore, no shortage of milk is anticipated for the project in near future.

DAIRY FARM AT BUNGLA
ICCHA & MILK COLLECTION STATIONS

It is proposed to establish a modern Dairy Farm at Bungla Iccha (Sadiqabad). The Dairy Farm shall be located 23 kilo meters from Sadiqabad and 600 kilo meters from Karachi. The sponsors plan to produce about one third of plant requirements of milk at the Dairy Farm by raising imported milking animals at the Farm. Additional requirements of milk shall be met from local producers by establishing collecting Stations near the milk pockets. The milk so collected shall be transported to the Dairy Farm, chilled and then sent to Karachi plant under hygienic conditions for further processing.

The supply position of milk during the initial years shall be as under:

Year	<u>Quantity of Milk Daily</u> (Litres)			Total Milk (Litres)
	<u>Dairy Farm at Bungla Iccha</u>	<u>Second Dairy Farm</u>	<u>Collection Stations</u>	
1.	1,736	2,170	3,000	6,906
2.	1,736	2,170	7,000	9,170
3.	2,344	2,170	11,000	15,514
4.	2,980	2,170	16,000	21,150
5.	3,906	2,170	21,000	27,076

It is also proposed to establish a second dairy farm of 150 cows to be established on 400 acres of land about 40 miles from Karachi. Farm operations would also be established on these 400 acres providing for the bulk of the required feed base, which would be supplemented by purchase of grains concentrates and other items from market. Any additional requirement of milk shall be met by purchasing the milk from local market.

MARKET INFORMATION ON
CAPACITY AND PRODUCTION
OF ICE-CREAM

Prepared by

AJMAL KHAN

MARKET RESEARCH DIVISION

NATIONAL DEVELOPMENT FINANCE CORPORATION

December 26, 1982

MARKET INFORMATION ON CAPACITY
AND PRODUCTION OF ICE-CREAM

A survey was initiated to ascertain the capacity and production of packaged ice-cream in Karachi. Presently two units are engaged in the manufacture of packaged ice-cream. These are:

- a) Mehran International Ltd. (POLKA)
- b) K. Rehman & Sons* (IGLOO)

* : (Now it is taken over by Gul Ahmed Group)

Capacity and Production

The capacity and production of ice-cream obtained from the units, is presented below:

<u>P O L K A</u>		<u>I G L O O</u>	
<u>Capacity (3 Shift Basis) (Litres)</u>	<u>Production 1981-82 (Litres)</u>	<u>Capacity (3 Shift Basis) (Litres)</u>	<u>Production 1981-82 (Litres)</u>
6,000,000	750,000	6,000,000	450,000

The capacity utilisation of ice-cream for Polka and Igloo based on single shift capacity and single shift production comes as under:

	<u>Capacity (1 Shift Basis) (Litres)</u>	<u>Production (Litres)</u>	<u>Capacity Utilisation (%)</u>
Polka	2,000,000	750,000	38
Igloo	2,000,000	450,000	23

As shown above the capacity utilisation of Polka and Igloo on single shift capacity comes to 38% and 23% respectively. The above capacity utilisation has been worked out on the average daily production reported by the management.

The original installed capacity of these two units based on three shifts come to 12,000,000 litres per annum. The units however, operate on single shift because of lack of demand for ice-cream. It was reported by the management of ice-cream units that the capacity utilisation even on single shift basis is not utilised fully throughout the year. It reaches minimum of 10% during off season and maximum of 90% during peak season.

Present & Future Demand for Ice-cream

Discussions with the management of the ice-cream units revealed that the demand for ice-cream is on the lower side, because it is not considered by consumers as a nourishing item but as a luxury item. It was also reported that efforts are being made through advertising and sales promotion techniques to make the people aware to use ice-cream as a nutrient food and not as a luxury item.

The overall demand for ice-cream at present is sluggish. But the management of the units is of the view that the demand for ice-cream will pick up in future. However,

it was reported that during the next 3/4 years the present level of demand will be doubled.

Based on present production of ice-cream by these two units the total requirements by 1985 would be around 2,400,000 litres. The capacity utilisation in that year will be 60%. Despite this increase, surplus capacity would be available with the industry to meet the future demand for ice-cream.

Profitability

In the absence of any adequate financial data/break-up of fixed and variable costs, the profitability of the ice-cream units (Polka and Igloo) can not be determined accurately. However, during the course of discussions, the management of the ice-cream units apprised that despite low capacity utilisation, the profit margin is reasonable.

It may be mentioned here that since the launching of packaged ice-cream products by Igloo, it has utilised to maximum of 30 to 35% capacity on single shift basis, while it has been breaking even at 25% as reported by the management. Presently the capacity utilisation of Igloo has declined to 23%. This low capacity utilisation is chiefly attributable to lack of demand, irregular production and inadequate marketing organisation.

On the basis of production figures supplied by Polka, it appears that the operating performance of Polka is relatively better than of Igloo. But the management was reluctant to provide any requisite financial data which could be used to evaluate its profitability. The management, however, said that they are making profit. This is also apparent from the fact that the company is paying four bonuses to their employees in a year.

In view of the above facts that presently the package ice-cream plants are operating at 30% single shift capacity. Even if the demand increases in a near future, there would still be a surplus capacity. This means that there is hardly any marketing opportunity for a new plant aiming to sell ice-cream of the quality which is presently marketed by the existing producers. However, marketing opportunity appears to exist for high quality ice-cream for high income group segment of the market.

PLAN - ACOST OF THE PROJECT.BUILDINGS.(5,500 sq,yds).

(Rs. in 000)

	<u>LOCAL</u>	<u>FOREIGN</u>	<u>TOTAL</u>
Paint	325.0	-	325.0
Repair Windows & Screen	62.5	-	62.5
Repair Roof	312.5	-	312.5
New Partiation walls to seperate for Ice Cream processing	62.5	-	62.5
Tile Floor in processing rooms	125.0	-	125.0
Floor for office area (2)	187.5	-	187.5
Truck was facility	37.5	-	37.5
Convert part of High Temp. to low temp storage	437.5	-	437.5
Ground clean	87.5	-	87.5
Waste water treatment facility (USA)	<u>1,000.0</u>	<u>250.0</u>	<u>1,250.0</u>
	<u>2,637.5</u>	<u>250.0</u>	<u>2,887.5</u>
<u>EQUIPMENT (Existing).</u>			
Repair existing process equipment (Sweden, Denmark Germany, UK.)	-	312.5	312.5
Reparing piping, insulation etc (Germany)	-	312.5	312.5
Repair Trucks	225.0	-	225.0
Replacement of existing pumps (USA, Sweden,Holland)	-	125.0	125.0
A/C for office (chilled water system)	<u>250.0</u>	<u>-</u>	<u>250.0</u>
	<u>475.0</u>	<u>750.0</u>	<u>1,225.0</u>
<u>NEW EQUIPMENT</u>			
<u>Fluid</u>			
5000 litre/hr UHT processing Unit.(USA, Sweden, holland)	-	1,700.0	1,700.0
New packaging Equipment (Sweden)	<u>-</u>	<u>6,875.0</u>	<u>6,875.0</u>
	<u>-</u>	<u>8,575.0</u>	<u>8,575.0</u>

(Rs. in 000)

	<u>LCY</u>	<u>FCY</u>	<u>TOTAL</u>
<u>FROZEN</u>			
Two stage NH ₃ system, Compressors, controls etc (USA,EEC)	312.5	625.0	937.5
Mix storage 100 gallone	187.5	-	187.5
Flavour tanks	125.0	-	125.0
Ice Cream Freezer. USA, Denmark, Italy	-	750.0	750.0
Cone Baker USA	-	937	937.5
Fillers-Cones (Equip. Under lease) (USA, Denamrk, Italy)	-	-	-
Fillers-Cups (USA, Denamrk, Italy)	-	625.0	625.0
Stick Novelties (800 day/hr) 1600 each hr	-	3,750.0	3,750.0
Overwrap for novelties. (USA, Denamrk, Engalnd)	-	625.0	625.0
Fruit Feeder (USA, Denmark)	-	250.0	250.0
Pump, pipes, value (USA, Sweden)	-	250.0	250.0
Wire milk cases - 20,000	1,500.0	-	1,500.0
Ice Machine (USA)	-	250.0	250.0
Dry Ice - CO2 generator. (USA, New Zeland)	-	2,500.0	2,500.0
Electric system generator (USA, Germany, England)	-	1,250.0	1,250.0
Switch gear (USA,EEC)	-	187.5	187.5
Spare Parts Machine purchase origin	-	625.0	625.0
Ocean Freight, inland freight	-	1,000.0	1,000.0
<u>OFFICE EQUIPMENT.</u>	-	312.5	312.5
Materials Handling (USA, Germany, Japan)	<u>312.5</u>	<u>312.5</u>	<u>625.0</u>
	<u>2,750.0</u>	<u>13,937.5</u>	<u>16,687.5</u>
<u>MARKETING PROGRAME</u>			
Cabinets for Super Market	12,500.0	-	12,500.0
Distr. & Marketing Vehicls.. (England, Germany)	2,275.0	1,000.0	3,275.0
Contractors Vehicls	1,975.0	-	1,975.0
Depots-Compressors, Stanless steel pipes etc. (USA,EEC)	2,500.0	500.0	3,000.0
	<u>19,250.0</u>	<u>1,500.0</u>	<u>20,750.0</u>

Rs. in '000'

	<u>Local</u>	<u>Foreign</u>	<u>Total</u>
B/F	19250.0	1500.0	20750.0
Contingencies 10% on contract & Equipment	1462.5	1850.0	3312.5
Market Research & Advertising	625.0	-	625.0
	<u>21337.5</u>	<u>3350.0</u>	<u>24687.5</u>
Milk Collection Vehicles	-	4625.0	4625.0
<u>TOTAL INVESTMENT COST</u>			
Building Improvements, doors hinges etc. (US, UK.)	2637.5	250.0	2887.5
Equipment Existing - Repair parts	475.0	750.0	1225.0
New Equipment - Fluids	-	8575.0	8575.0
New Equipment - Frozen	2750.0	13937.5	16687.5
Marketing Programme	21337.5	3350.0	24687.5
Leasehold Improvements	4700.0	-	4700.00
Milk Collection Vehicles	-	4625.0	4625.0
Working Capital	14787.5	-	14787.5
	<u>46687.5</u>	<u>31487.5</u>	<u>78175.0</u>

EQUIPMENT SPECIFICATIONS

Mazari Livestock Complex

- TWO STAGE NH₃ SYSTEM, COMPRESSORS, CONTROLS ETC.

Can not be given specifications until system is designed.

- PUMP, PIPE AND VALVES

Must be ordered from the sources of the Equipment

- SPARE PARTS

Must come for equipment supplier.

- VEHICLES

Truck chasis must be selected from those that have service and parts available in Pakistan. The BEDFORD AND BENZ seem to be the most popular followed by FIAT and HINO.

- DRY ICE GENERATOR

Specification to be obtained.

REQUEST FOR PROPOSALS

1. ALFA LAVAL EQUIPMENT IN PLACE AT KMP

- Recommended repair parts and one year spares listed separately.
- Operating manuals and/or Instructions.
- Repair parts manuals.
- Flow diagrams for plate heat exchanger and design temperature conditions.

2. NEW EQUIPMENT REQUIRED

- Machine capacities may vary for those stated decrease Max 10% - Increase 25% Max.
- Volume stated in Leters may be converted to the nearest standard measure i.e. 400 LTR = 100 US. Gallons
- All electric motor to be
Single Phase 180 - 220 v, 50 cycle
Three Phase 380 - 440 v, 50 cycle
- Prices quoted C.F. Karachi
Brochures and technical data to be included for each item quoted.
- Recommended spare parts for one year for each item quoted, separately
- Time period required for aeivery to shipping Dock.
- Payment Term
- Start-up and capacity testing
- Warranties

ALFA LAVAL EQUIPMENT IN PLACE AT KMP

ONE UNIT

- PLATE HEAT EXCHANGER

Type 14RB # 2234-3721 Capacity 5000 L/HR

Plate Sections 6 plates per section 15, 17, 9, 5, 13, 21

ONE UNIT

CONTROL PANEL

AB. Separator - Stockholm

2248 - 239

ONE UNIT

- PLATE HEAT EXCHANGER

Type P14RB # 2234 - 2722

Plate Section - ONE, Plates per Section, 40

ONE UNIT

PLATE HEAT EXCHANGER

Type P141VB # 2434 - 3755

Plate Sections 2, Plates Per Section 31, 12

TWO UNITS

- CREAM CULTURE - STORAGE TANKS

A.B Separator

* 4400 - 51, * 4400 - 50

ONE UNIT

- PLATE HEAT EXCHANGER

Type P5 - VB # 2230 - 3567

Plates Sections - ONE, Plates Per Section 13.

ONE UNIT

- BUTTER CHURN 1000 KG. Capacity
Modle KUG = R, Motor RPM 5-30, 10 Speeds

ONE UNIT

PLATE HEAT EXCHANGER

Type P5R3 # 2230-3558

Control Panel A-B Separator - Stockholm

2248-223

Plate sections - 4 Plates Per Section 6, 14, 17, 26

Vacuum Heater With Pump

Type REV # 114379

Unit was used for Cream Pasteurization

Capacity Not Known exactly - Need Rated

Cream capacity -

What would be the capacity of this Unit if

ICE CREAM mix of 10% Fat and 38-40% Total solid

was processed

With ICE

would need to be added to the system.

TWO UNITS

Separators

Model 3181M

ONE UNIT

PLATE HEAT EXCHANGER

Type P5RB # 2230-6432

Plate Sections - 2, Plate Per Section 16, 16

PRODUCT PUMP (MRK)

Data Not Known

NEED: Operational Manual

Flow Diagrams

Spare Parts Manuals

NEW EQUIPMENT REQUIRED

EQUIPMENT

ONE UNIT

1. MILK RECEPTION FROM ROADS TANKERS

Centrifugal Pump, CIP Unit and Accessory Fittings
Capacity 20,000 LTR/HR

ONE UNIT

2. BLENDING TANK WITH AGITATOR (TRIBLENDER)

For Recombining dry ingredients for milk and
ICE CREAM mix. Tank Capacity 1000 LTR

ONE UNIT

3. HOMOGENIZER TWO STAGE 1000 LTR/HR

ONE UNIT

4. YOGURT CUP FILTER 3600 Cups/HR

Plastic 180 cc Cup with over all LID. Incubation
in cup.

ONE UNIT

5. UHT INTEGRATED UNIT VARIABLE CAPACITY MIN 2500 LTR/HR.

- Max 5,000 LTR/HR. Indirect Heating
- Temperatures 4°C milk in, Sterilizer 135°C, 25°C milk
discharge.

ONE UNIT

6. STERILE MILK HOLDING TANK CAPACITY 5,000 LTR.

ONE UNIT

7. Butter Oil dosing Pump with Manual Speed control
capacity 200-400 LTR/HR. With in line static mixer

ONE UNIT OR INDIVIDUAL UNIT WITH SIZE REQUIRED

8. Aseptic Milk Filler for $\frac{1}{4}$, $\frac{1}{2}$ and 1 LTR Container rectangular or gable top configuration use flexible packaging materials providing a minimum of 120 days product life.

ONE UNIT OF THREE INDIVIDUAL FREEZERS

9. ICE CREAM FREEZER - THREE BARRELS - AMMONIA
Continous Output of 200 - 1000 LTR/HR Per Barrel

ONE UNIT

10. Fruit and Dry matter feeder with capacity of bulk of 10-20% in 200 - 1000 LTR/HR of ICE CREAM.

ONE UNIT

11. ICE CREAM CUP FILLER CAPACITY 3,600 - 5,400/HR
Plastic or paper cup with pluglid in 90, 120, 150 cc sizes
RIPPLE ATTACHMENT ALSO REQUIRED.

ONE UNIT

12. Ice Cream Cone Filler Capacity 3,600 - 5,400/HR
Dry Matter dosing, Chocolate spray.

ONE UNIT

13. Cone Baker, Automatic for sugar cone complete with oil sprayer for the cone. Heated by natural Gas.

ONE UNIT

14. Stick Novelty Bar Freezer with NH₃ Brine Chiller Automatic transfer to overwrap Machine. Capacity 7,000 bars (pieces)/HR., Mold size 75 cc., Two product Filler, One Evacuator Chocolate Dip. and Dry Matter Dispenser.

ONE UNIT

15. FLAKE ICE MACHINE 5TON PER DAY FREON

FREON

TWO EACH

Processing vats 1,500 LTR Capacity Stainless Steel
Two Speed Agitator, Heat and Cool with Water, CIP

TWO EACH

S.S. Single wall tanks with sanitary out value
1,500 LTR. capacity.

TWO EACH

S.S. 1,000 LTR Capacity Single wall tanks with
Agitator, Tank Covers and Sanitary outlet value, CIP.

THREE EACH

3,500 LTR capacity product holding Tanks Horizontal,
NH₃ Direct expansion cooling, Agitator, CIP, Man Hole
Sight Glass, Temperature Drop 2°C in 4 hours.

ONE EACH

2,000 LTR S.S. Product storage Tank with Agitator
and Chilled water cooling capability. Temperature
Drop 2°C in 4 hours, CIP.

ONE EACH

S.S. Three compartment Ice Cream mix Flavour
Tank 400 LTR Capacity per section, with Agitators.

VEHICLE REQUIREMENT

MILK COLLECTION TANKER TRAIN

Including Tractor, 2 Semi Trailer with One Dolly Tanks Sized 9,500 LTR Each, Equipment with CIP, Pump, Man Hole, Vent and Delivery hose.

The Vehicle will be utilized metal (Paved) Highways which has many types of transport vehicles of various speeds. Thus this vehicle will have variable speed to meet local conditions. Thus max speed will be 90 KPH. Either loaded or empty.

FOUR EACH

Trucks 3 ton with insulated van body 10FT Dual Compartment freeze 5ft and chill 5 ft.

FOUR EACH

Trucks 3 ton with Insulated Van Body 10 FD Dual Compartment freeze 4 FT and Ambient 6 FT.

TWO EACH

Truck 3 ton with Insulated Van Body 10 FT

ONE EACH

Truck 3 ton with Insulated Van Body 10 FT

ALL FREEZE

ONE EACH

Truck 1½ ton pickup.

ONE EACH

CAR 1,600 cc. Engine with A/C.

Freeze section maintain temperature of
20°C with Ambient Temperature

Chill section. Maintain temperature of
40°C with Ambient temperature 40°C.

Insulated Vans to be Insulated to Chill
specification Trucks Gas or Diesel
Engine (Diesel preferred).

PLAN - A
SALE PROJECTIONS

Units in million
 Amount = Rs. in million

	Units Sales Price - Rs.	Year 1 Units Amount	Year 2 Units Amount	Year 3 Units Amount	Year 4 Units Amount	Year 5 Units Amount
<u>Fluid Products</u>						
White Milk $\frac{1}{2}$ litre	2.75	3.3 9.08	6.4 17.60	11.7 32.18	16.6 45.70	21.8 60.00
Flavoured Milk $\frac{1}{2}$ litre	2.75	3.3 9.08	6.4 17.60	11.7 32.18	16.6 45.70	21.8 60.00
<u>Frozen</u>						
Bulk 12-L	144.00	0.010 1.44	0.012 1.73	0.014 2.02	0.0174 2.50	.0208 3.00
Cones	3.50	1.00 3.50	1.2 4.20	1.4 4.90	1.7 5.95	2.7 7.35
Stick Novelties	2.00	9.00 18.00	10.8 21.60	13.00 26.00	15.6 31.12	18.7 37.40
Cups	2.00	3.00 6.00	3.6 7.20	4.3 8.60	5.2 10.40	6.2 12.40
<u>Cultured</u>						
Yogurt $\frac{1}{4}$ litre	1.75	1.80 3.15	3.6 6.30	5.4 9.45	6.5 11.38	7.8 13.65
Butter 250	10.00	0.30 3.00	0.45 4.50	0.6 6.00	0.78 7.80	0.96 9.60
		<u>53.25</u>	<u>80.73</u>	<u>120.73</u>	<u>160.55</u>	<u>203.40</u>
\$ Equivalent @ Rs.12.50 per Dollar	Million \$	<u>4.260</u>	<u>6.458</u>	<u>9.658</u>	<u>12.844</u>	<u>16.272</u>

Annexure VII

(Rupees)

SALARY & WAGES

<u>Production</u>		<u>Monthly</u>	<u>Annual</u>
Manager	1	4,000	
Secretary	1	1,800	
Quality Assurance	1	2,500	
Technicians	2	3,600	
<u>Shipping Receiving storage</u>			
Supervisor	1	2,000	
<u>Warehouse men</u>			
Ingredients	2	3,000	
Freeze	4	7,200	
Fluid	2	3,000	
Mfg. products	1.	1,500	
<u>Shiipping</u>			
Fluid	2	3,000	
Frozen	5	6,000	
Others	1	1,300	
Fluid Supervisor	1.	2,000	
Receiving	2	3,000	
Process	2	3,000	
Package	2	3,600	
Package	2	3,000	
Frozen Supervisor	1	2,000	
Freezer Operator	2	3,600	
<u>Package</u>			
Operators	2	3,600	
Packers	8	8,000	

Novelty

Operator	1	2,000		
Sticks	1	1,300		
Wrapper Operator	1	1,800		
Packets	4	4,000		
Butter maker	1	2,000		
Packaging	2	2,000		
Cone Baker	1	2,000		
Packers	3	3,000		
TOTAL	<u>57</u>	<u>87,100</u>	X 12	<u>1,045,200</u>

Engineering

Chief Engineer	1	2,500		
Clerk	1	1,300		
Part room	1	1,500		
Boiler Man	1	1,800		
Electrician	2	3,600		
Machanics	2	3,600		
Carpenter	1	1,800		
Greasers	3	3,900		
Auto Machanics	3	5,400		
Painter	1	1,800		
Body Fender	1	1,800		
Welder	1	1,800		
Machine Wash	4	6,000		
Vehicle Wash	1	1,300		
Sweeper	1	1,000		
	<u>24</u>	<u>39,100</u>	X 12	<u>469,000</u>

Accounting - Finance

Controller	1	5,000
Cost	1	2,500
Clerks	3	3,900

General Accounts

Accountant	1	2,500
Clerks	4	5,200

Internal Audit & System

Auditor	1	2,000
Clerk	1	1,500
Cashier	1	2,500
Clerk	1	1,500
TOTAL	<u>14</u>	<u>26,600</u> X 12

319,200Sales & Distribution

Sales Manager	1	2,500
Secretary	1	1,800
Route Supervisor	1	2,000
Clerks	2	2,600
Area Representative	4	6,000
Route Sales man	4	6,000
Drivers	4	5,200
Super Market and Institutional Sales Representative	2	4,000
Home Delivery Supervisor	1	2,000
Clerks	3	3,900
Route Director	1	2,000
Vender Supervisor	1	2,000

Clerks	3	3,900		
Vender Diretors	5	7,500		
TOTAL	<u>37</u>	<u>56,900</u>	X 12	682,800

WAGES & SALARIES EXPENSESSUMMARY

	<u>No. of Employees</u>	<u>Annual Expenses</u>
Production	59	1,045,200
Engineering	24	469,200
Accounting-Finance	14	319,200
Sale & Distribution	37	682,800
TOTAL:	<u>134</u>	<u>2,516,400</u>
Uniforms		62,500
Meals		250,000
		<u>2,828,900</u>

(Rs. in 000)

Wages & SalareisYears

<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>
2,829	3,112	3,423	3,765	4,142	4,556	5,012	5,513	6,064	6,670

ADMINISTRATION EXPENSES

(Rupees)

		<u>Monthly Salary</u>	<u>Annual Salary</u>
General Manager	1	8,800	96,000
Secretary	1	1,800	21,600
Admin Manager	1	2,500	30,000
Secretary	1	1,500	18,000
Personnel Supervisor	1	1,800	21,600
Recruitment	1	1,500	1,800
Compensation	1	1,500	18,000
Clerks	2	2,600	31,200
Procurement Supervisor	1	2,000	24,000
Clerks	2	2,600	31,200
Government Relation Clerk	2	3,500	42,000
Service Supervisor	1	1,800	21,600
Security Guards	4	5,200	62,400
Janitors	4	1,000	12,000
Messenger	1	1,000	12,000
Gardners	2	2,600	31,200
Swith board	1	1,500	18,000
TOTAL:	27	<u>42,400</u>	<u>508,800</u>

(Rs. in 000)

Admin ExpensesYears

<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>
509	559	615	676	744	818	900	990	1,089	1,198

INTEREST ON FOREIGN
CURRENCY LOANS

Foreign Currency Rs.31.49 million
Interest 14%
Repayment Period 10 Years

(Rs. in Million)

Year	<u>Principal at the beginning of the year</u>	<u>Instalment</u>	<u>Interest @ 14%</u>
	31.490	3.149	4.409
.	28.341	3.149	3.968
.	25.192	3.149	3.527
.	22.043	3.149	3.086
.	18.894	3.149	2.645
.	15.745	3.149	2.204
.	12.596	3.149	1.763
.	9.447	3.149	1.323
.	6.298	3.149	0.882
0.	3.149	3.149	0.441

INTEREST ON LOCAL CURRENCY LOANS

Local Currency Rs.23.24 million
Interest @ 14%

<u>Year</u>	<u>Principal at the beginning of the year</u>	<u>Instalment</u>	<u>Interest @ 14%</u>
1.	23.24	2.324	3.254
2.	20.916	2.324	2.928
3.	18.592	2.324	2.603
4.	16.268	2.324	2.278
5.	13.944	2.324	1.952
6.	11.62	2.324	1.627
7.	9.296	2.324	1.301
8.	6.972	2.324	0.909
9.	4.648	2.324	0.651
10.	2.324	2.324	0.453

INTEREST ON OUTSTANDING
BALANCE OF LEASE AMOUNT

Amount of Lease Rs.13.34
 Repayment period 5 Years
 Interest 10%

(Rs. in million)

<u>Year</u>	<u>Principal at the beginning of the year</u>	<u>Instalment</u>	<u>Interest</u>
1.	13.340	2.668	1.334
2.	10.672	2.668	1.067
3.	8.004	2.668	0.534
4.	5.334	2.668	0.534
5.	2.668	2.668	0.267

INTEREST SCHEDULE

r	Foreign Currency Loan	Local Currency Loan	Local Currency Interest on lease amount outstanding	T o t a l
	_____	_____	_____	_____
	4.409	3.254	1.334	8.997
	3.968	2.928	1.067	7.963
	3.527	2.603	0.800	6.930
	3.086	2.278	0.534	5.898
	2.645	1.952	0.267	4.864
	2.204	1.627	-	3.831
	1.763	1.301	-	3.064
	1.323	0.909	-	2.232
	0.882	0.651	-	1.533
	0.441	0.453	-	0.894
	<u>24.248</u>	<u>17.956</u>	<u>4.002</u>	<u>46.206</u>

KARACHI MILK PLANT

Annexure XII

DEPRECIATION SCHEDULE

(Rs. in million)

	<u>Total Cost</u>	<u>No. of years</u>	<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>	<u>Year 5</u>	<u>Year 6</u>	<u>Year 7</u>	<u>Year 8</u>	<u>Year 9</u>	<u>Year 10</u>
Buildings	2887.5	10	288.7	288.7	288.7	288.7	288.7	288.7	288.7	288.7	288.7	288.7
Existing Equipment	1225.0	10	122.5	122.5	122.5	122.5	122.5	122.5	122.5	122.5	122.5	122.5
New Equipment Fluid	8575.0	10	857.5	857.5	857.5	857.5	857.5	857.5	857.5	857.5	857.5	857.5
Frozen	16687.5	10	1668.7	1668.7	1668.7	1668.7	1668.7	1668.7	1668.7	1668.7	1668.7	1668.7
Marketing Programme	18812.5	10	1881.3	1881.3	1881.3	1881.3	1881.3	1881.3	1881.3	1881.3	1881.3	1881.3
Milk distribution vehicles	5250.0	5	1050.0	1050.0	1050.0	1050.0	1050.0	-	-	-	-	-
Market Resources and Advertising	625.0	1	625.0	-	-	-	-	-	-	-	-	-
Lease-hold improvement	4700.0	10	470.0	470.0	470.0	470.0	470.0	470.0	470.0	470.0	470.0	470.0
Milk collection vehicles	4625.0	5	925.0	925.0	925.0	925.0	925.0	-	-	-	-	-
	<u>63387.5</u>		<u>7888.7</u>	<u>7263.7</u>	<u>7263.7</u>	<u>7263.7</u>	<u>7263.7</u>	<u>5288.7</u>	<u>5288.7</u>	<u>5288.7</u>	<u>5288.7</u>	<u>5288.7</u>
Or Say			<u>7889</u>	<u>7264</u>	<u>7264</u>	<u>7264</u>	<u>7264</u>	<u>5288</u>	<u>5288</u>	<u>5288</u>	<u>5288</u>	<u>5288</u>