Detailed Project Report

on

Ice Cream Unit

Under MKUY

Name of the Entrepreneur/Entity:

Address:

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1. Project Summary

1	Name of the Enterprise (as per the Illustrative List of Enterprises)	Ice Cream Manufacturing Unit
2	Sector (as per the Illustrative List of Enterprises)	AH&VS
3	Project Capacity[1]	500 lit/Hr
4	Key components of the project	Processing, packaging and sales
5	Project Address (Village/Ward, Gram Pranchayat/Municipality, Block, District)	
6	Products/Output from the project	Ice Cream
7	Total Project Cost	Rs. 1,54,39,860
8	Fixed Capital Cost	Rs. 99,99,860
9	Working/Recurring capital	Rs. 54,40,000
10	Bank Finance/ Self Finance	Bank Loan
11	Bank Loan Amount	Rs. 1,17,19,874
12	Promoter Contribution (min 10% in case of bank loan)	Rs. 37,19,986
13	Assumed Rate of Interest	11%
14	Subsidy Eligibility (40%, 50%)	
15	Repayment Terms (Tenure, Moratorium, Frequency, Mode of Repayment: equal principal/equal instalment)	Equal Monthly Instalment
16	Key Financial Indicators:	
	1. Average Annual Net Profit	Rs. 39,60,578
	2. Debt Service Coverage Ratio (DSCR)	2.28
	3. Internal Rate of Return	21.02%
	4. Break Even Point (BEP)/Year	3 Year 11 Month
17	Estimated employment to be generated (nos.)	19

Note: The price quoted in the DPR is indicative. Final CIS will be calculated as per the Rate in MKUY guideline.

[1] Capacity can be in terms of area or quantity

2. Project Profile

2.1 Entrepreneur/Entity Profile

1	Name of the Entrepreneur/Entity	
2	Legal status (Individual/ Group/ FPO/ FPC/ Proprietorship/ Partnership firm/ Company/ Cooperative/ Federation/ Society/ Trust)	
3	Name of Representative[2] in Ease of entity	
4	Gender (Male/ Female/ Third Gender/ Not Applicable)	
5	Date of Birth of Individual/Representative of Entity	
6	Date of Incorporation/Registration of Entity	
7	Category opted for (Women/ ST/ SC/ Differently Abled/ Third gender/ Agri & Allied Graduate)	
8	Educational Qualification of Individual/Representative of Entity	
9	Passport size photograph of the Individual/ Representative of entity	
10	Local Address for Correspondence of the Individual/ Representative of entity	
11	Registered Address of Entity	
12	Main Office/Branch Address of Entity	
13	Phone no. of Individual/Representative of Entity	
14	Email Id of Individual/Representative of Entity	
15	AADHAR No. of Individual/Representative	
16	PAN of Individual/Representative of Entity, if available	
17	Farmer Id of Individual, if available	
18	Details of other Partner/Director/ President/Secretary	
19	Registration No./ CIN of the Entity[3]	
20	PAN/TAN of Entity	
21	GSTIN of Entity, if available	
22	Details of experience and exposure relevant to the proposed enterprise/project (family business, work experience, e-learning/certificate courses, trainings undertaken etc.)	

[2] Representative should be authorized by the board/governing body of the entity.

[3] Registration document:
Groups (SHG/PG/: FPO: Proprietorship firm: Registration Certificate under Shops & Establishment Act, Partnership firm: Registration Certificate from IGR of state, Company (Pvt. Ltd., Public Ltd., LLP, OPC, FPC): Certification of Incorporation, Cooperative/ Federation: Certificate of Registration from Registrar of Cooperative Societies, Sciety/Trust: Darpan Unique Id

2.2. Project Consultant Details

DPR prepared by:

Please provide further details of the consultant:

2.3. Concept and Scope of the Project

Ice cream is a mixture of milk, cream, sugar, and sometimes other ingredients that has been frozen into a soft, creamy delight using special techniques. Ice cream has been a popular treat for hundreds of years but has only become commonplace since the widespread use of refrigeration.

Ice-cream is one of the fastest growing food categories in India. Notably, the business is seasonal in nature with April to June being the peak season and November to January the lean months. Sales slacken during the monsoons also. India is the most rapid growing ice cream market globally, with ice cream treats fast becoming a part of Indian culture. Indian consumers are turning into regular patrons of ice cream parlours, helping to fuel greater interest in packaged offerings in the country. Ice cream parlours are a booming business in India, and this popularity is making its way to retail.

The fat content of ice cream typically determines the category to which it belongs. In some countries fat content has to exceed 9% to "qualify" for the ice cream category. Below this level, the product is typically called milk ice, whereas ice cream with more than 12 to 13% fat is often categorized as either luxury or premium.

The fat can be either of animal or vegetable origin. If the latter, legislation in a number of countries dictates that the product cannot then be called ice cream, but must be labelled, for example, non-dairy ice cream or frozen dessert.

Type of Ice Cream	Fat % wt.	MSNF % wt.	Sugar % wt.	E/S % wt.	Water % wt.	Overrun % Vol.
Dessert Ice	15	10	15	0.3	59.7	110
Ice Cream	10	11	15	0.5	63.5	100

Fat: Milk, cream, butter or vegetable fat

MSNF: Milk solids-non-fat (protein, lactose, salts)

Sugar: Sucrose, glucose/dextrose or syrups

E/S: Emulsifier and stabilizer, e.g., monoglycerides, locust bean gum (LBG), guar gum or carrageenan

Overrun: Amount of air added to the product

Other ingredients: Flavours, colours, fruit, nuts and chocolate pieces may be added during processing

Manufacturing Process

Depending on the filling method, ice cream products fall into one of the following categories:

MOULDED

Ice cream or water ice mix is filled into moulds and frozen to produce stick novelties. After extraction, the products can be dipped in chocolate or other coatings.

FILLED

Ice cream is filled into cups, cones or containers/tubs, often combined with more flavours and may be decorated with chocolate, cream, ripple and dry materials.

EXTRUDED

Ice cream is typically extruded onto a tray by means of extrusion with a cutter. A wide variety of products can be produced including stick novelties, sandwiches, desserts, ball-top cones and so on. Extrusion technology provides the possibility to work with ice cream drawn at much lower temperature where the viscosity of the ice cream is high due to more water being frozen into ice crystals. This generates ice creams that are both smoother due to smaller ice crystals and creamier due to higher churning of fat compared to moulding and filling technologies. The higher viscosity also offers the possibility to work with detailed forms and flavours, decorations and coatings.

Preparing the Ice Cream Mix

The ingredients used in ice cream production are:

a. Fat
b. Milk solids non-fat (MSNF)
c. Sugar/non-sugar sweetener
d. Emulsifiers/stabilizers
e. Flavours
f. Colours
g. Other ingredients

FAT

Fat makes up about 10 to 15% of an ice cream mix and may be milk or vegetable fat. The fat gives creaminess and improves melting resistance by stabilising the air cell structure of the ice cream.

Milk fat is used in the form of whole milk, cream, butter or anhydrous milk fat (AMF). Milk fat can be replaced by vegetable fat, where refined or hydrogenated (hardened) coconut oil and palm kernel oil are most commonly used. The use of vegetable fat in ice cream is regulated by legislation in many countries.

MILK SOLIDS-NON-FAT (MSNF)

MSNF consist of proteins, lactose and mineral salts derived from whole milk, skim milk, condensed milk, milk powders and/or whey powder. In addition to its high nutritional value, MSNF helps to stabilize the structure of ice cream due to its water-binding and emulsifying effect. The same effect also has a positive influence on air distribution in the ice cream during the freezing process, leading to improved body and creaminess.

In a well-balanced recipe, the quantity of MSNF should always be in proportion to the water content. The optimal level is 17 parts MSNF to 100 parts water.

SUGAR

Sugar is added to increase the solids content of the ice cream and give it the level of sweetness consumers prefer. Ice cream mix normally contains between 12 to 20% sugar. Sugar is the common description for the saccharides, including the monosaccharides (i.e., glucose/dextrose and fructose), disaccharides (i.e., sucrose and lactose (milk sugar)) and starch derivates (i.e. glucose syrup, glucose/fructose syrup and high fructose syrup).

The consistency of the ice cream can also be adjusted by selecting different types of sugar. This makes it possible to produce ice cream that is easy to scoop.

In the production of sugar-free ice cream, sweeteners are used to replace sugar. Aspartame, acesulfame K and sucralose are the most commonly used sweeteners in ice cream and are applied in conjunction with a bulking agent such as malto-dextrin, poly-dextrose, sorbitol, lactitol, glycerol or other sugar alcohols.

EMULSIFIERS AND STABILIZERS

Emulsifiers and stabilizers are typically used as combined products at dosages of 0.5% in the ice cream mix. Traditionally, these products were produced by dry blending, but today integrated products are preferred due to the improved dispersion and high storage stability.

Emulsifiers

Emulsifiers are substances that assist emulsification by reducing surface tension between two phases. There exist several different emulsifier types utilized in ice cream production, but the far most dominant and probably most effective emulsifier is the mono-/diglyceride of fatty acids. The mono-/diglyceride is often derived from a a vegetable fat (triglyceride) where fatty acid chains have been removed, creating a molecule that has a lipophilic end (fat loving) and a hydrophilic part (water loving). The mono-/diglyceride has two main functions during ice cream processing, where it assists the dairy protein displacement from the fat surface membrane, in order to improve the churning during the freezing process. The mono-/diglycerides also seed the crystallization of fat, which is essential for avoiding over-churning of the fat during the freezing process. Egg yolk is a well-known emulsifier but is expensive and less effective than the most commonly used types.

Stabilizers

A stabilizer is a substance that has the ability to bind water when dispersed in a liquid phase. This is called hydration and means the stabilizer forms a matrix that prevents the water molecules from moving freely. Most of the stabilizers utilized for ice cream are large molecules derived from seeds, wood or algae/seaweed. Stabilizers are used in ice cream production to increase the viscosity of the mix and create body and texture. They also control the growth of ice crystals and improve melting resistance.

FLAVOURS

Flavours are a very important factor in the customer’s choice of ice cream and can be added at the mixing stage or after pasteurization. The most popular flavours are vanilla, chocolate and strawberry.

In the EU, flavours are classified in three groups: natural, nature-identical and artificial. Nature-identical flavours are the most commonly used. The most common ice cream flavours are vanilla, nougat, chocolate, strawberry and nut.

COLOURS

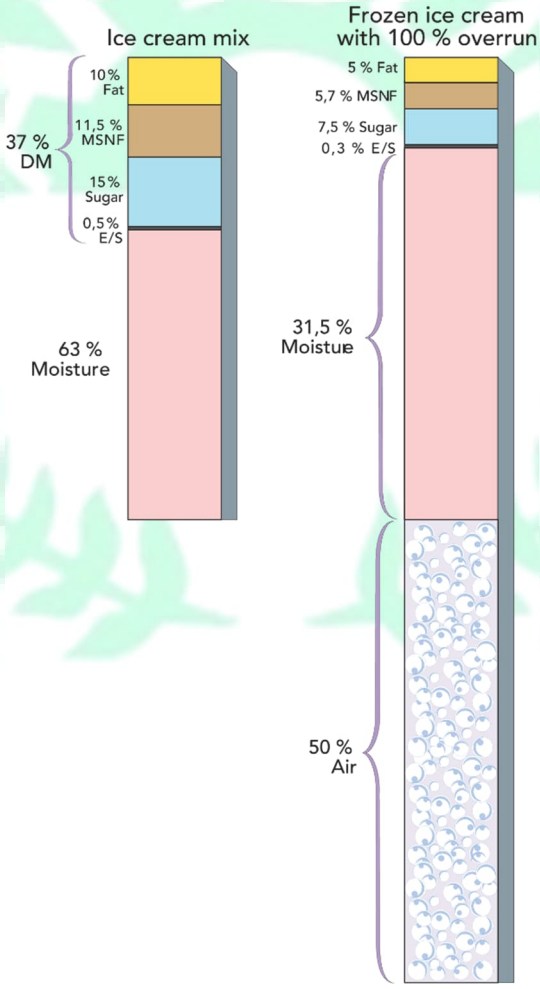
Natural or artificial colours are added to the mix to give the ice cream an attractive appearance. Local legislation exists in most countries regarding the use of colours in food.

OTHER INGREDIENTS

Many moulded and extruded ice cream products are coated with chocolate. Two types of chocolate coatings are used: real chocolate and chocolate compound. The cocoa mass and butter are replaced with a blend of cocoa powder and vegetable fat in the chocolate compound.

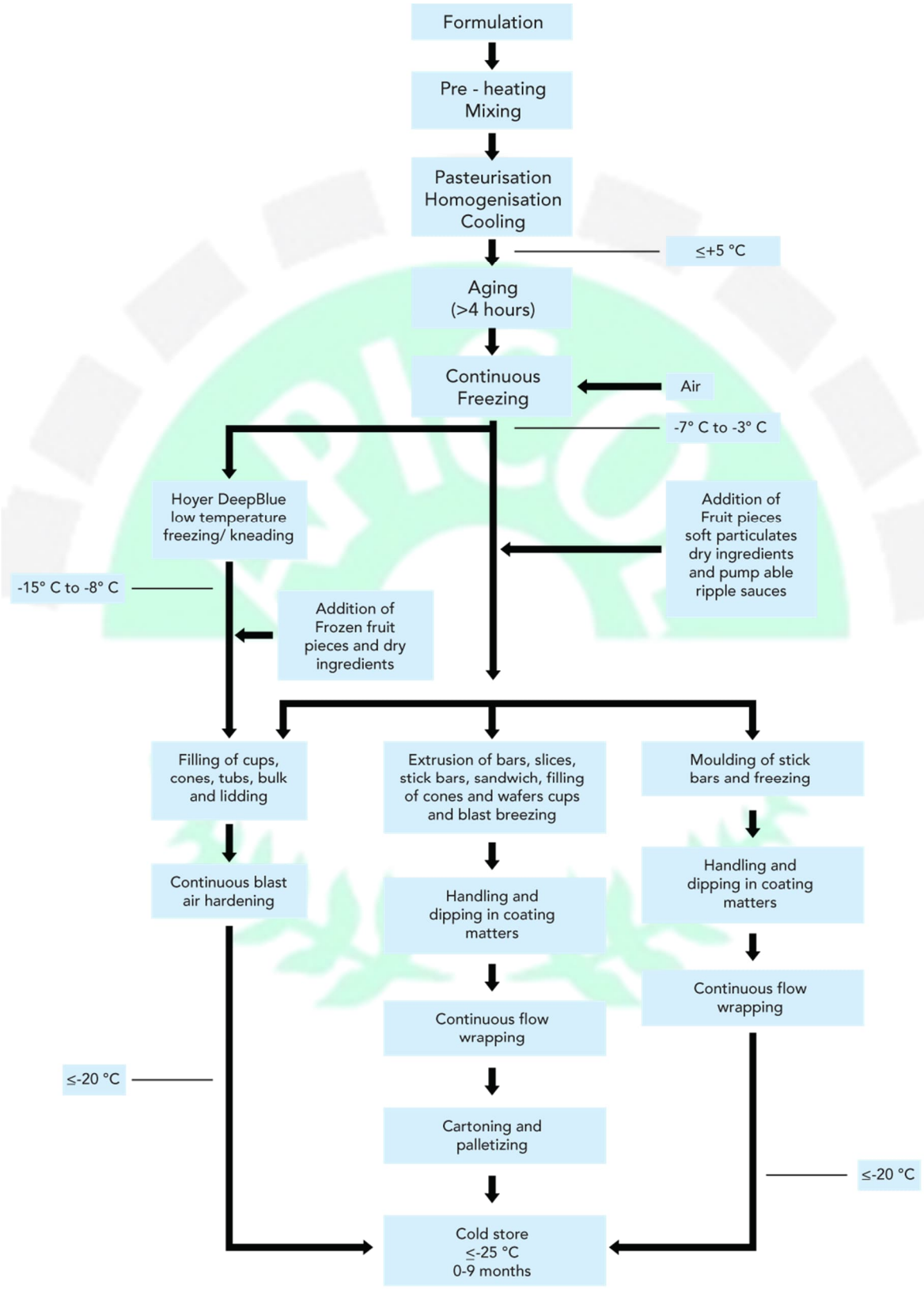
Ripples (sauces) are incorporated in ice cream for taste and appearance. They can also be applied for pencil filling and top decoration.

Dry ingredients are either added through an ingredient doser or as top decoration matter on cones, cups and bars. A great variety of products are used: chocolate, nuts, dried fruit pieces, candies, cookies, Smarties, caramel pieces, etc.



Ref: Dairy processing handbook (Tetrapak)

Process Flow



Ref: Dairy processing handbook (Tetrapak)

Mixing

The tank-stored raw materials are heated and blended to form a homogenous mix that is pasteurized and homogenized. Large production plants often have two mix tanks for each flavour with a volume corresponding to the hourly capacity of the pasteurizer, in order to maintain a continuous flow to the freezers. The dry ingredients, especially the milk powder, are generally added via a mixing unit, through which water is circulated, creating an ejector effect that sucks the powder into the flow. Before returning to the tank, the mix is normally heated to 50 to 60°C to facilitate dissolution. Liquid ingredients such as milk, cream, liquid sugar, etc. are measured into the mix tank.

Homogenization and Pasteurization

In large-scale production the ice cream mix flows through a filter to a balance tank. From there it is pumped to a plate heat exchanger, where it is pre-heated to 73-75°C. After homogenization at 14 to 20 MPa (140-200 bar), the mix is returned to the plate heat exchanger and pasteurized at 83 to 85 °C for about 15 seconds. The pasteurized mix is then cooled to 5°C and transferred to an ageing tank.

The purpose of pasteurization is to destroy bacteria and dissolve additives and ingredients.

The homogenization process results in uniformly small fat globules which improves the whipping property and texture of the ice cream mix.

Ageing

The mix must be aged for at least 4 hours at a temperature of 2 to 5°C with continuous gentle agitation. Ageing allows the milk proteins and water to interact and the liquid fat to crystallize. This results in better air incorporation and improved melting resistance.

Market Potential

The ice-cream market has been through an evolution wherein the category has grown in shape and form right from consumer perception to the products and services being offered. Ice-cream, which was considered an indulgent category in the past, has now evolved to a stage where it is largely and happily perceived as a snacking option by consumers. This change in perception has come about thanks to increasing disposable incomes and greater discretionary spending. Also, the growing reach of the media has allowed operators in this category to expand their range and recall value. The change in the perception of consumers has allowed the category to grow in volume. Ice-cream, as a category, has been growing at a healthy CAGR of ~10-15%.

The overall ice cream market is estimated at over 250 mn litre valued at around Rs. 17 bn. Nearly a fourth of the market by volume at 50 mn litres is in the organized sector with players like Amul, Hindustan Unilever (HUL), Mother Dairy, Vadilal having a major share. In value terms, the organised sector has an overall market of over Rs. 10 bn.

3. Techno-commercial Assumptions

Sl. No.	Parameter	Value	Unit
1	Increase in Rate of Product	5	%
2	Increase in Electricity consumption	3	%
3	Collection from Debtors (First Year)	10	Days
4	Collection from Debtors	10	Days
5	Payable to Creditors	15	Days
6	Drawing By Promoter	30	%
7	Increase in Staff Salary	5	%
8	Rate of Interest on TL	11	%
9	Rate of Interest on WC	9	%
10	Loan Repayment (in year)	7	Years
11	Raw Material in Stock (on sales)	7	Days
12	Finished Goods in stock (on sales)	3	Days
13	Promoter's Contribution (Term Loan)	10	%
14	Promoter's Contribution (Working Capital)	50	%
15	Working Capital Requirement	15	Days
16	Working Capital Utilisation	100	%
17	No of working days	290	Days

1. Financial Details

4.1. Project Fixed Capital

Sl. No.	Particulars	Unit	Qty.	Cost per unit	Total
A	**Land**				
1	Land Development	sq. ft	5000	LS	3,500
2	Fencing (Barbed wire/Green Fencing)	ft	300	60	18,000
	Sub Total				**21,500**
B	**Civil Construction**				
1	Processing area	sq ft	2500	950	23,75,000
2	RM Store	sq ft	500	400	2,00,000
3	FG Store (Frozen Room)	sq ft	500	400	2,00,000
4	office	sq ft	400	950	3,80,000
	Sub Total		3000		**31,55,000**
C	**Water Supply**				
1	Water Supply with overhead tank and pump				**2,50,000**
D	**Electrification**				
1	Electrical Installation with transformer and DG				**5,00,000**

E	**Plant & Machinery**				
Sl. No.	**Particulars**	**Specification**	**Qty**	**Unit Price**	**total**
1	Milk pasteurizer unit	500 LPH, skid mounted, MOC: SS304	1	5,30,000	5,30,000
2	Homogenizer	500 LPH, 2 Stage	1	4,80,000	4,80,000
3	Milk transfer pump		1	27,000	27,000

E	Plant & Machinery				
Sl. No.	**Particulars**	**Specification**	**Qty**	**Unit Price**	**total**
4	Ageing Vat	With agitator, Temp. controller, Cap: 600 Ltr.	1	3,00,000	3,00,000
5	Flavour Tank	With agitator, Temp. controller, Cap: 100 Ltr.	1	50,000	50,000
6	Continuous Freezer	With refrigeration unit and water-cooled condenser, electrical pannel board. Capacity 400 lit, (-5˚C)	1	8,50,000	8,50,000
7	Milk powder blending machine	With welded rod mesh, MOC: SS304	1	2,75,000	2,75,000
8	Fruit Feeder	Cap. 400 lit	1	2,60,000	2,60,000
9	Hot Water Boiler	2KLPH, Coal, wood fired	1	3,00,000	3,00,000
10	Cold room (frozen)		1	8,00,000	8,00,000
11	FION ice bank tank (IBT)	2 KL, puff insulated tank and 4 TR- refrigeration system	1	4,50,000	4,50,000
12	RO water plant and ETP		1	5,30,000	5,30,000
13	Pipelines and fittings	1 Set	1	1,00,000	1,00,000
	Total				**49,52,000**
	GST@18%				**8,91,360**
	Total Plant and Machinery Cost				**58,43,360**
F	**Miscellaneous Expenditure**				
1	Insurance premium of assets				30,000
	DPR Cost				
	Other Misc. Exp.				
	Total Miscellaneous Expenditure				**30,000**

4.2. Project Variable Expenses

	Details of raw material					
Sl. No.	**Items**	**Unit**	**Rate/Unit (Rs)**	**Qty/day (Kg)**	**Qty/annum (kg)**	**Total (Rs)**
1	Milk	Kg	40	671	1,94,590	77,83,600
2	Skim Milk Powder	Kg	300	93	27,086	81,25,800
3	Cream, Butter, AMF	Kg	320	909	2,63,726	8,43,92,320
4	Emulsifier	Kg	1,100	6	1,740	19,14,000
5	Stabilizer	Kg	1,100	8	2,320	25,52,000
6	Flavour	Kg	800	6	1,740	13,92,000
7	Colour	Kg	700	6	1,740	12,18,000
8	Sugar	Kg	50	290	84,100	42,05,000
9	Other Ingredients (nuts etc.)	Kg	600	10	2,900	17,40,000
10	CIP chemicals	Kg	120	50	14,500	17,40,000
11	Packing material	LS	4	6,800	19,72,000	78,88,000
	Total			**2,000**	.	**12,29,50,720**

4.3. Details of Sales

G	Details of sales					
Sl. No.	**Type of products**	**Unit**	**Rate/Unit (Rs)**	**Quantity**	**Quantity**	**Total (Rs)**
1	Ice Cream (Avg. Price of different Flav)	kg	300	1,700	4,92,951	14,78,85,210
	Total					**14,78,85,210**

4.4. Project Balance Sheet

Liabilities	I	II	III	IV	V	VI	VII
Opening Capital	**-**	**46,40,352**	**51,89,692**	**60,63,947**	**71,39,930**	**85,08,271**	**96,63,723**
Add: Introduced	37,19,986						
Add: Profit	13,15,366	27,74,341	34,74,254	41,36,983	50,15,341	52,97,453	57,73,309
Less: Drawing	3,95,000	22,25,000	26,00,000	30,61,000	36,47,000	41,42,000	46,32,000
Closing Capital	**46,40,352**	**51,89,692**	**60,63,947**	**71,39,930**	**85,08,271**	**96,63,723**	**1,08,05,032**
Term Loan from Bank	80,95,993	70,87,516	59,62,339	47,06,958	33,06,306	17,43,572	-
Current Liabilities							
Cash Credit from Bank	27,20,000	27,20,000	27,20,000	27,20,000	27,20,000	27,20,000	27,20,000
Sundry Creditors	30,73,768	48,41,200	57,61,050	64,04,950	70,98,850	74,53,800	78,26,500
Expenses Payable	8,83,600	12,51,300	14,49,700	15,93,600	17,48,100	18,35,600	19,28,100
Current Provisions	2,95,871	9,21,146	12,21,109	15,05,135	18,81,575	20,02,480	22,06,418
Total Current Liabilities	**69,73,239**	**97,33,646**	**1,11,51,859**	**1,22,23,685**	**1,34,48,525**	**1,40,11,880**	**1,46,81,018**
Total Liabilities	**1,97,09,584**	**2,20,10,854**	**2,31,78,145**	**2,40,70,573**	**2,52,63,101**	**2,54,19,175**	**2,54,86,051**
Assets							
Fixed Assets	99,69,860	99,69,860	99,69,860	99,69,860	99,69,860	99,69,860	99,69,860
Less Depreciation	13,12,004	24,45,232	34,24,699	42,71,846	50,05,061	56,40,120	61,90,564
Net Fixed Assets	**86,57,856**	**75,24,628**	**65,45,161**	**56,98,014**	**49,64,799**	**43,29,740**	**37,79,296**
Current Assets							
Sundry Debtors	24,64,800	38,82,000	46,19,600	51,36,000	56,92,400	59,77,000	62,75,900
Inventories	22,48,824	31,02,124	39,85,959	45,25,769	50,21,010	53,64,986	56,33,321
Cash and Bank Balance	4,93,000	7,76,400	9,24,000	10,27,200	11,38,500	11,95,400	12,55,200
Other Current Assets	58,45,104	67,25,703	71,03,425	76,83,590	84,46,392	85,52,048	85,42,334
Total Current Assets	**1,10,51,728**	**1,44,86,227**	**1,66,32,984**	**1,83,72,559**	**2,02,98,302**	**2,10,89,435**	**2,17,06,754**
Total Assets	**1,97,09,584**	**2,20,10,854**	**2,31,78,145**	**2,40,70,573**	**2,52,63,101**	**2,54,19,175**	**2,54,86,051**

4.5. Calculation of Depreciation

Rates of Depreciation		10%	15%	Total depreciation for the year
Year	1	3,60,500.00	9,51,504	13,12,004
	2	3,24,450.00	8,08,778	11,33,228
	3	2,92,005.00	6,87,462	9,79,467
	4	2,62,804.50	5,84,342	8,47,147
	5	2,36,524.05	4,96,691	7,33,215
	6	2,12,871.65	4,22,187	6,35,059
	7	1,91,584.48	3,58,859	5,50,444

4.6. Projected P&L

Description	Year ending March 31st						
	I	II	III	IV	V	VI	VII
Capacity Utilisation	**50**	**75**	**85**	**90**	**95**	**95**	**95**
Revenue							
Sales	7,39,42,605	11,64,60,000	13,85,88,000	15,40,78,000	17,07,70,000	17,93,09,000	18,82,75,000
Opening Stock of Finished Goods	-	(7,64,924)	(12,04,759)	(14,33,669)	(15,93,910)	(17,66,586)	(18,54,921)
Closing Stock of Finished Goods	7,64,924	12,04,759	14,33,669	15,93,910	17,66,586	18,54,921	19,47,672
Total Income (A)	**7,47,07,529**	**11,68,99,835**	**13,88,16,910**	**15,42,38,241**	**17,09,42,676**	**17,93,97,334**	**18,83,67,752**
Expenditure							
Opening stock of Raw Material	**-**	**14,83,900**	**23,37,200**	**27,81,200**	**30,92,100**	**34,27,100**	**35,98,400**
Purchase (Net) of Material	6,14,75,360	9,68,24,000	11,52,21,000	12,80,99,000	14,19,77,000	14,90,76,000	15,65,30,000
Closing Stock of Raw material	**14,83,900**	**23,37,200**	**27,81,200**	**30,92,100**	**34,27,100**	**35,98,400**	**37,78,400**
Raw Material Consumption	**5,99,91,460**	**9,59,70,700**	**11,47,77,000**	**12,77,88,100**	**14,16,42,000**	**14,89,04,700**	**15,63,50,000**
Repair & Maintenance - Machinery (@5% of Cost)	2,98,451	3,13,400	3,29,100	3,45,600	3,62,900	3,81,100	4,00,200
Electricity expense	59,15,408	93,16,800	1,10,87,100	1,23,26,300	1,36,61,600	1,43,44,800	1,50,69,500
Insurance cost	30,000	31,500	33,100	34,800	36,600	38,500	40,500
Administrative salaries and wages	28,80,000	30,24,000	31,75,200	33,34,000	35,00,700	36,75,800	38,59,600
Other Misc. Expenses [@2% of sales]	14,78,852	23,29,200	27,71,760	30,81,560	34,15,400	35,86,180	37,67,355
Total Cost	**7,05,94,171**	**11,09,85,600**	**13,21,73,260**	**14,69,10,360**	**16,26,19,200**	**17,09,31,080**	**17,94,87,155**

Description	Year ending March 31st						
	I	II	III	IV	V	VI	VII
Capacity Utilisation	**50**	**75**	**85**	**90**	**95**	**95**	**95**
Profit Before Depreciation, Interest and Tax	**41,13,357**	**59,14,235**	**66,43,650**	**73,27,881**	**83,23,476**	**84,66,254**	**88,80,597**
Depreciation	13,12,004	11,33,228	9,79,467	8,47,147	7,33,215	6,35,059	5,50,444
Profit Before Interest and Tax	**28,01,353**	**47,81,007**	**56,64,184**	**64,80,734**	**75,90,261**	**78,31,195**	**83,30,153**
Interest on Term Loan	9,45,316	8,40,720	7,24,020	5,93,816	4,48,545	2,86,463	1,05,625
Interest on Working Capital Loan	2,44,800	2,44,800	2,44,800	2,44,800	2,44,800	2,44,800	2,44,800
Total Interest Paid	**11,90,116**	**10,85,520**	**9,68,820**	**8,38,616**	**6,93,345**	**5,31,263**	**3,50,425**
Profit Before Tax	**16,11,237**	**36,95,487**	**46,95,363**	**56,42,118**	**68,96,916**	**72,99,932**	**79,79,728**
Income Tax	2,95,871	9,21,146	12,21,109	15,05,135	18,81,575	20,02,480	22,06,418
Profit after Tax	**13,15,366**	**27,74,341**	**34,74,254**	**41,36,983**	**50,15,341**	**52,97,453**	**57,73,309**

4.7. Projected Cash Flow

Period Ending:	I	II	III	IV	V	VI	VII
Cash & Bank Balance at Beginning	-	4,93,000	7,76,400	9,24,000	10,27,200	11,38,500	11,95,400
Cash Inflow during the Period	2,10,21,588	66,67,976	58,71,934	60,55,956	69,73,395	64,95,867	70,02,606
Cash Outflow during the Period	2,05,28,588	63,84,576	57,24,334	59,52,756	68,62,095	64,38,967	69,42,806
Closing Cash & Bank Balance	**4,93,000**	**7,76,400**	**9,24,000**	**10,27,200**	**11,38,500**	**11,95,400**	**12,55,200**

4.8. Projected Loan Repayment

Year	Interest	EMI	Principal
1	9,45,316.25	18,49,197.25	9,03,880.99
2	8,40,720.20	18,49,197.25	10,08,477.05
3	7,24,020.41	18,49,197.25	11,25,176.84
4	5,93,816.25	18,49,197.25	12,55,380.99
5	4,48,545.02	18,49,197.25	14,00,652.22
6	2,86,463.18	18,49,197.25	15,62,734.07
7	1,05,625.41	18,49,197.25	17,43,571.83
Total	**39,44,506.72**	**1,29,44,380.72**	**89,99,874.00**

4.9. Calculation of DSCR, IRR and BEP

Calculation of DSCR							
Year	**I**	**II**	**III**	**IV**	**V**	**VI**	**VII**
Net Sales	7,39,42,605	11,64,60,000	13,85,88,000	15,40,78,000	17,07,70,000	17,93,09,000	18,82,75,000
Net Profit	13,15,366	27,74,341	34,74,254	41,36,983	50,15,341	52,97,453	57,73,309
Interest Paid	11,90,116	10,85,520	9,68,820	8,38,616	6,93,345	5,31,263	3,50,425
Cash Accruals (a)	**25,05,482**	**38,59,861**	**44,43,075**	**49,75,599**	**57,08,686**	**58,28,716**	**61,23,735**
Principal	9,03,881	10,08,477	11,25,177	12,55,381	14,00,652	15,62,734	17,43,572
Interest	11,90,116	10,85,520	9,68,820	8,38,616	6,93,345	5,31,263	3,50,425
Total (b)	**20,93,997**	**20,93,997**	**20,93,997**	**20,93,997**	**20,93,997**	**20,93,997**	**20,93,997**
DSCR	1.20	1.84	2.12	2.38	2.73	2.78	2.92
Average DSCR	**2.28**						

Calculation of Internal Rate of Return (IRR)				
Sl. No.	**Year**	**PAT**	**Depreciation**	**Cash Accrual**
	Cash outflow at beginning			-1,54,39,860
1	31-03-2023	13,15,366	13,12,004	26,27,370
2	31-03-2024	27,74,341	11,33,228	39,07,569
3	31-03-2025	34,74,254	9,79,467	44,53,721
4	31-03-2026	41,36,983	8,47,147	49,84,130
5	31-03-2027	50,15,341	7,33,215	57,48,556
6	31-03-2028	52,97,453	6,35,059	59,32,512
7	31-03-2029	57,73,309	5,50,444	63,23,753
IRR		**21.02%**		
Payback Period		**4 Years 1 Months**		

Calculation of Break-Even Point (BEP)

Sales	**7,47,07,529**	**11,68,99,835**	**13,88,16,910**	**15,42,38,241**	**17,09,42,676**	**17,93,97,334**	**18,83,67,752**
Variable Cost	6,14,70,312	9,82,99,900	11,75,48,760	13,08,69,660	14,50,57,400	15,24,90,880	16,01,17,355
Contribution	**1,32,37,216**	**1,85,99,935**	**2,12,68,150**	**2,33,68,581**	**2,58,85,276**	**2,69,06,454**	**2,82,50,397**
Fixed Cost	1,16,25,979	1,49,04,449	1,65,72,787	1,77,26,463	1,89,88,360	1,96,06,522	2,02,70,669
BEP Sales	**6,56,14,111**	**9,36,73,853**	**10,81,70,342**	**11,69,98,908**	**12,53,96,426**	**13,07,25,430**	**13,51,60,593**
Average BEP sales	**11,08,19,952**						

4.10. Summary of Project Cost

Sl. No.	Name of Assets	Amount
1	Land Development	21,500
2	Civil Construction	33,55,000
3	Irrigation/Water Supply	2,50,000
4	Electrification	5,00,000
5	Plant & Machinery	58,43,360
6	Live Stock	-
7	Insurance	30,000
8	DPR	-
9	Other Misc. Rxp	-
	Total Fixed Cost	**99,99,860**
	Recurring	**54,40,000**
	Cost of Project	**1,54,39,860**