DETAILED PROJECT REPORT

FISH PROCESSING UNIT

UNDER PMFME SCHEME

National Institute of Food Technology Entrepreneurship and Management

Ministry of Food Processing Industries

Plot No.97, Sector-56, HSIIDC, Industrial Estate, Kundli, Sonipat, Haryana-131028

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1. PROJECT SUMMARY

1. Name of the proposed project	:	Fish Processing Unit
2. Nature of proposed project	:	Proprietorship/Company/Partnership
3. Proposed project capacity	:	114000 Kg/annum (60,65,70,75&80% capacity utilization in 1st to 5th Year respectively)
4. Raw material	:	Rohu Fish
5. Major product outputs	:	Processed Fish
6. Total project cost	:	Rs. 34.63 Lakh
• Land development, building & Civil Construction	:	Nil
• Machinery and equipment's	:	Rs. 26.40 Lakh
• Miscellaneous Fixed Assets	:	Rs. 2.00 Lakh
• Working capital	:	Rs. 6.23 Lakh
8. Means of Finance		
• Subsidy (max 10lakhs)	:	Rs. 9.94 Lakh
• Promoter's contribution (min10%)	:	Rs. 3.45 Lakh
• Term loan	:	Rs. 15.62 Lakh
• Working Capital Requirement	:	Rs. 5.61 Lakh
9. Profit after Depreciation, Interest & Tax		
• 1stYear	:	Rs. 2.36 Lakh
• 2ndyear	:	Rs. 4.14 Lakh
• 3rd year	:	Rs. 5.79 Lakh
• 4th year	:	Rs. 7.93 Lakh
• 5th year	:	Rs. 10.18 Lakh
11. Average DSCR	:	Rs. 2.49
12. Term loan repayment	:	5 Years with 6 months grace period

2. ABOUT THE PRODUCT

2.1. PRODUCT INTRODUCTION:

Fish is a common source of protein since fish is rich in good fats such as omega 3 and 6, and plenty of B-vitamins, in addition to being comparatively lower in calories, saturated fats and cholesterol. Reducing the risk of coronary heart disease and helping to preserve mental and sensory control is correlated with eating fish as a daily part of the diet. Fresh fish, though, are often pricey and need to be used fast, so frozen fish or flash-frozen fish become safer alternatives. Freezing is commonly used in seafood reservations at varying temperatures. Methodologies for processing and freezing vary not only for different commodities, but for the form of commodity. In order to maintain the flavor and nutritious value of the food, the use of an effective technique is important. Proper handling and protection of the product is also necessary for compliance with the necessary quality requirements expected for the product to be sold, especially in developing countries. Since prior to recorded history, fish from the world's aquatic and freshwater bodies have been a significant source of food for humanity. Ancient Egyptians, Greeks, and other Mediterranean cultures practiced collecting wild fish from fresh and sea waters and cultivating cultured fish in ponds. These ancient groups used primitive processing methods including sun-drying, salting, and smoking to stabilize the stock of fish. The consumption of several species of fish that are common in the world has been promoted by modern processing and preservation practices. Because of its nutritious and health benefits, seafood has become important worldwide. Almost 90 percent of marine commodity shipments are in frozen form. Shrimp, lobster, mackerel, tuna etc. are the most common products. During some growth cycles and annual spawning or migration periods, the composition of fish can differ considerably, particularly in their fat content. Moreover, the composition of captive-bred fish (i.e. aquaculture fish) will vary based on their artificial diet. Fish freezing is a preservation process.

2.2. MARKET POTENTIAL:

India is the world's second largest fish producer with a harvest of about 10.8 million MT. Marine food production rate in India are currently at 23 percent. India has ample geographical opportunities suitable for both coastal and freshwater fisheries, such as long coastlines (7,517 km), abundant rivers and canals, wetlands, dams and tanks, and brackish water. Currently, the export sector is estimated at USD 5.8 Bn/ 1 Mn MT. Currently, most exports are frozen and there is enormous scope for value-added goods to be exported. The table size of rohu, catla, mrigal fish has an edible portion of 60-70 percent while carps over 3 kg have an edible portion of 75-80 percent. Freshwater carps are typically sold in an iced state and only have a quality of 7 to 10 days. India world's second-largest producer of fish, ranking second in both aquaculture and inland catch fisheries. For the year 2013-14, gross provisional fish output was expected to be around 96 lakh tonnes, with a CAGR of around 4% over the previous five years and an annual growth rate of around 6%. Over the last five years, the coastal fishery has been expanding at a CAGR of 2%, while the inland fishery has been growing at a CAGR of about 5%. In the years 2014–2015, India's seafood exports hit an all-time peak of US$ 5.5 billion.

Andhra Pradesh, West Bengal, Gujarat, Karnataka and Kerala are the top five fishing states in India, with a combined share of about 50 percent of the overall fish production. Inland Fish Production: Andhra Pradesh, West Bengal, Uttar Pradesh, Bihar and Odisha are the top five states that contribute almost 68% to freshwater aquaculture. Development of Marine Fish: Gujarat, Andhra Pradesh, Tamil Nadu, Maharashtra and Kerala are the top five states, contributing almost 72% of the overall production. Frozen shrimp contributes 38 percent in quantity and 65 percent in value terms to exports. India exported marine products worth USD 5.8 Bn in 2016-17. The second largest export commodity was frozen cod, representing a share of 26 percent in quantity and 12 percent in volume. Marine goods are exported throughout the country through 30 separate sea/air/land ports.

2.3. RAW MATERIAL DESCRIPTION:

Indian rivers are the primary source of food for the irrigation scheme, drinking water and fish. There is a list of freshwater fish present in Indian rivers, with Rohu, Katla, Mahseer, Magur and Vaam being some of India's most common names for freshwater fish.

Here in this project we have taken Rohu fish for processing which would be the whole raw material.

3. PROCESS FLOW CHART

The processing of fish can be categorized in the following steps:

- Handling of freshwater fish before Processing:
  - The fish capture approach has an effect on the consistency of the raw material and its suitability for further processing.
  - Producers should keep in mind that not all fish can be transported alive. As a result, fish should be sorted immediately after fishing, with only those in excellent shape, stable, and undamaged destined for sale as live fish.
  - The conditioning mechanism lowers discomfort and inhibits digestion while also removing food remnants from the alimentary ducts and lowering oxygen demand. Fish are not fed during the conditioning period, which slows digestion and reduces ammonia and carbon dioxide excretion.
  - Raw material is graded during the pre-processing stage based on its suitability for different processing methods. The species of fish, the manufacturing processes, and the desired finished product all influence how the fish (raw material) is handled during processing.

- Preliminary Processing of freshwater Fish: Preliminary processing of freshwater fish usually consists of the following steps or unit processes: evisceration, de-heading, scaling, cutting of fins and belly flaps, slicing of whole fish into steaks, filleting, skinning, grinding of skinned fillets
    - Stunning of fish: Electric current is the fastest way to stunning newly captured fish or fish shipped live to a manufacturing facility. The fish are first put in a water tank, and then an electric current is transmitted through the water to shock or kill the fish. When mechanical or ceremonial factors demand the removal of blood from the tissue before further processing, live fish are often slaughtered by cutting the aorta and bleeding to death.

    - Grading: The rating of the fish by species and scale is the first step in the processing chain. Sorting by organisms, freshness, and physical damage are still manual operations, but rating fish by scale can be achieved quickly and efficiently with mechanical equipment.

    - Removal of Slime: Slime builds up on the surface of dying fish's skin as a protection mechanism against unhealthy environments. Eel, trout, and other freshwater animals can be cleaned of slime by soaking them in a 2 percent baking soda solution and then washing them in a cylindrical circular washer.

    - Scaling: Many freshwater organisms are scaled on a regular basis, which is a time-consuming process when performed manually. According to some sources, manual scaling of larger species takes about half the time it takes to produce heads and gutted fish without fins. The scales are removed from the body of the fish by moving tools from the tail fin to the head.

- Washing: The aim of washing is to clean the fish and remove any bacteria that has collected. The kinetic energy of the water stream, the ratio of fish volume to water volume, and the water temperature all influence the efficacy of the washing process.

- De-heading: Larger fish take more effort to de-head, and automatic heading devices are required. De-heading machines use disc, contoured, cylindrical blades, band saws, or guillotine cutters as cutting elements. The location of the cutting factor is adjusted by a machine operator based on the size of the fish. As a result, the amount of meat lost during the de-heading process is determined not only by the method of head cut, but also by the operator's expertise and ability.

- Gutting: Gutting is used to extract the areas of the fish that are most likely to degrade product consistency, as well as the gonads and, in some cases, the swim bladder. Freshwater fish evisceration is a time-consuming process that is normally done by hand. Gutting involves chopping off the abdomen (the fish may or may not be de-headed), scraping internal organs, and, if desired, washing the peritoneum, kidney tissue, and blood from the body cavity. The fish were sliced longitudinally from the anal opening to the anal opening, with great care taken to prevent cutting the gall bladder.

- Cutting Fins: When handling larger fish, manually chopping away the fins with a knife, special mechanized scissors, or spinning disc knives is a labor-intensive and strenuous process. During the processing of de-headed whole fish and fish steaks, this procedure is most often performed after gutting.

- Slicing of whole fish into steak: A traditional fish processing technique is to slice de-headed whole fish into steaks with a cut perpendicular to the animal's backbone. This processing technique is common in retail markets and the canning industry due to its high technical performance as compared to filleting and automated cutting into parts.

- Filleting: In the retail market, a fillet, which is a piece of meat made up of the dorsal and abdominal muscles, has long been a popular fish food. Filleting performance is determined by the type of fish, its sex, age, and nutritional status. Manual filleting is time-consuming and heavily reliant on the employees' abilities.

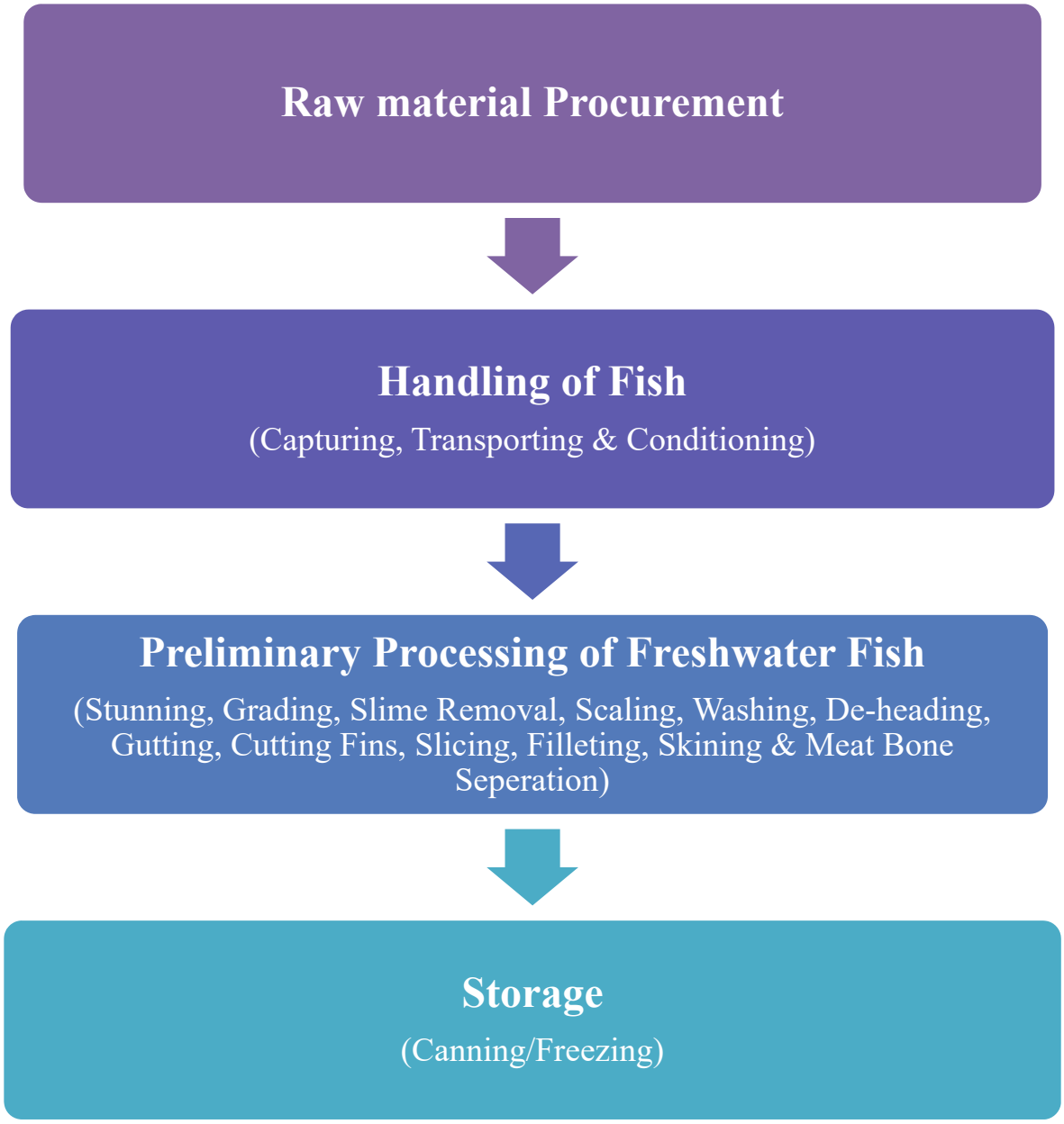
- Skinning: Manual fillet skinning is time-consuming and difficult; a sharp knife and a flat metal or plastic board are needed. The fillet is put skin-down on the sheet, the meat is held in the left hand, and the knife is drawn between the skin and the meat.

- Meat bone separation: Minced meat is often made from less valuable fish species after de-heading, cleaning their body cavities, and removing kidney tissue. Meat is removed from bones, clothing, and scales using separators, which are automatic machines.

➢ Storage:

- Canning- A wide variety of fish and shellfish suitable for canning. Sardine, mackerel, salmon, sardines, and shellfish such as lobster, clams, oysters, mussels, crab, and other shellfish are ideal for canning. When it comes to canning, the consistency of the raw materials is crucial. Canning should only be done for fresh seafood. Since heat processing is uniform in relation to a defined amount of microbial spore population, an excess will result in microorganism destruction failure. As a result, it's important to keep the bacterial load in the fish as minimal as possible before canning. This can be accomplished by using very fresh seafood, dressing it properly, thoroughly cleaning it in potable water, and keeping it iced.

- Freezing- To eliminate bacterial activities, in order to prevent undesirable enzymatic and microbiological processes, de-heading, gutting, washing and chilling should be carried out immediately on dead fish. In order to preserve shelf life, processing techniques should be implemented when fish is not sold fresh. Freezing, smoking, heat treatment may be used in these (sterilization, pasteurization, etc.).


Raw material Procurement
Handling of Fish
(Capturing, Transporting & Conditioning)
Preliminary Processing of Freshwater Fish
(Stunning, Grading, Slime Removal, Scaling, Washing, De-heading, Gutting, Cutting Fins, Slicing, Filleting, Skining & Meat Bone Seperation)
Storage
(Canning/Freezing)

4. ECONOMICS OF THE PROJECT

4.1. BASIS & PRESUMPTIONS

1. Production Capacity of Processed Fish is 50 kg per hr. First year, Capacity has been taken @ 60%.

2. Working shift of 8 hours per day has been considered.

3. Raw Material stock is for 7 days and Finished goods Closing Stock has been taken for 7 days.

4. Credit period to Sundry Debtors has been given for 14 days.

5. Credit period by the Sundry Creditors has been provided for 7 days.

6. Depreciation and Income tax has been taken as per the Income tax Act, 1961.

7. Interest on working Capital Loan and Term loan has been taken at 11%.

8. Salary and wages rates are taken as per the Current Market Scenario.

9. Power Consumption has been taken at 20 KW.

10. Increase in sales and raw material costing has been taken @ 5% on a yearly basis.

4.2. CAPACITY, UTILIZATION, PRODUCTION & OUTPUT

COMPUTATION OF PRODUCTION OF PROCESSED FISH		
Items to be Manufactured		
Processed Fish		
Machine capacity Per hour	50	Kg
Total working Hours	8	
Machine capacity Per Day	400	Kg
Working days in a month	25	Days
Working days per annum	300	
Wastage Considered	5%	
Raw material requirement	120000	Kg
Final Output per annum after wastage	114000	Kg
Final Product to be packed in 1 kg Packet		
Number of Packets per annum	114000	1 Kg Packet

Production of Processed Fish		
Production	**Capacity**	**KG**
1st year	60%	68,400
2nd year	65%	74,100
3rd year	70%	79,800
4th year	75%	85,500
5th year	80%	91,200

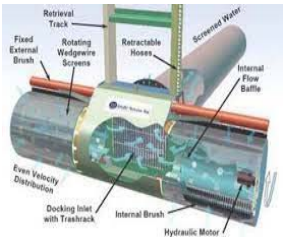
Raw Material Cost			
Year	Capacity Utilisation	Rate (per Kg)	Amount (Rs. in lacs)
1st year	60%	75.00	54.00
2nd year	65%	79.00	61.62
3rd year	70%	83.00	69.72
4th year	75%	87.00	78.30
5th year	80%	91.00	87.36

COMPUTATION OF SALE					
Particulars	**1st year**	**2nd year**	**3rd year**	**4th year**	**5th year**
Op Stock	-	1,596	1,729	1,862	1,995
Production	68,400	74,100	79,800	85,500	91,200
Less : Closing Stock	1,596	1,729	1,862	1,995	2,128
Net Sale	**66,804**	**73,967**	**79,667**	**85,367**	**91,067**
Sale price per packet	140.00	147.00	154.00	162.00	170.00
Sales (in Lacs)	93.53	108.73	122.69	138.29	154.81

4.3. PREMISES/INFRASTRUCTURE

The approximate total area required for complete factory setup is 2500-3000 Sq. ft. for smooth production including storage area. It is expected that the premises will be on rental.

4.4. MACHINERY & EQUIPMENTS

Machine Name	Description	Machine Image.
Fish stunning machine	This system is designed for the fast and painless stunning (electroanesthesia) of fish (up to 50 kg/cycle) prior to slaughter.	
Grading Machine	When the fish are harvested, either for stocking as juveniles or for selling as food fish, they are first sorted by species, then size-graded if possible.	
Drum washing with a horizontal rotation axis	A front-loading washer's drum rotates along a longitudinal axis. The water in the drum is just partly filled, and the clothes are tumbled into the water by the revolving drum.	
Vertical cylindrical scaler	This kitchen method is designed to quickly and efficiently strip the scales from the skin of a whole fish that will be cleaned and grilled. Scaling a fish would not be an issue because filleting it removes the skin and scales as well.	

Combination washer conveyor	The purpose of this project is to design a device to clean fish solids and plaque.	
De- heading machine	De-heading machine is used for accurately and efficiently removes the head and tail of the fish.	
Gutting machine	Gutting machines reduce the amount of waste by basically gutting all forms of fish with extremely high accuracy, leading to a decline in the cost of processing. The guts are sucked out with the aid of a vacuum when the fish is gutted and sliced.	
Rotating disc knives	A manual fish processing knife, mechanized scissors or a rotating disc knife can cut away fins from the fish's body.	
Filleting machine with conveyor	A fish-cutting machine for cutting fillets from the backbone of fish.	
Skinning machine with stationery knife	Cod, sleeve-egg, catfish, carp, grouper, pike, salmon, tilapia, and snapper are among the fish that can be skinned by the fish skinning system. Fish meat,	

	skinned fish fillets, and skinned fish fillets can all be used to produce delectable dishes.	
Meat separator	This system is used to pick fish meat from fish bones, flesh, and tendon in order to capture and harvest fish meat. The selected fish meat or fish meat paste is pure enough to make fish balls, fish noodles, fish gelatin, and fish dumplings, among other things.	
Material handling and other Equipments	These Equipments are used for material handling. Other equipments like water pumps, weighing machine, etc are also used.	

Machine	**Unit**	**Rate**	**Price**
Fish stunning machine	1	130000	130000
Grading Machine	1	100000	100000
Drum washing with a horizontal rotation axis	1	240000	240000
Vertical cylindrical scaler	1	75000	75000
Combination washer conveyor	1	115000	115000
De- heading machine	1	380000	380000
Gutting machine	1	450000	450000
Filleting machine with conveyor	1	65000	65000
Skinning machine with stationery knife	1	135000	135000
Meat separator	1	750000	750000

Material handling and other equipment's (Bins, trolley, weighing machine, rotating disc knives etc.)	-	200000	200000

Note: Total Machinery cost shall be Rs 26.40 lakh including equipment's but excluding GST and Transportation Cost.

4.5. MISCELLANEOUS FIXED ASSETS

- Water Supply Arrangements
- Furniture & Fixtures
- Computers & Printers

4.6. TOTAL COST OF PROJECT

COST OF PROJECT	
	(in Lacs)
PARTICULARS	**Amount**
Land & Building	Owned/Rented
Plant & Machinery	26.40
Miscellaneous Assets	2.00
Working capital	6.23
Total	**34.63**

4.7. MEANS OF FINANCE

MEANS OF FINANCE	
PARTICULARS	**AMOUNT**
Own Contribution (min 10%)	3.45
Subsidy @35%(Max. Rs 10 Lac)	9.94
Term Loan @ 55%	15.62
Working Capital (Bank Finance)	5.61
Total	**34.63**

4.8. TERM LOAN: Term loan of Rs. 15.62 Lakh is required for project cost of Rs. 34.63 Lakh

4.9. TERM LOAN REPAYMENT& INTEREST SCHEDULE

REPAYMENT SCHEDULE OF TERM LOAN							
					Interest		11.00%
Year	**Particulars**	**Amount**	**Addition**	**Total**	**Interest**	**Repayment**	**Closing Balance**
1st	Opening Balance						
	1st month	-	15.62	15.62	-	-	15.62
	2nd month	15.62	-	15.62	0.14	-	15.62
	3rd month	15.62	-	15.62	0.14	-	15.62
	4th month	15.62	-		0.14		15.62

				15.62			
	5th month	15.62	-	15.62	0.14		15.62
	6th month	15.62	-	15.62	0.14		15.62
	7th month	15.62	-	15.62	0.14	0.29	15.33
	8th month	15.33	-	15.33	0.14	0.29	15.04
	9th month	15.04	-	15.04	0.14	0.29	14.75
	10th month	14.75	-	14.75	0.14	0.29	14.46
	11th month	14.46	-	14.46	0.13	0.29	14.17
	12th month	14.17	-	14.17	0.13	0.29	13.88
					1.54	1.74	
2nd	Opening Balance						
	1st month	13.88	-	13.88	0.13	0.29	13.60
	2nd month	13.60	-	13.60	0.12	0.29	13.31
	3rd month	13.31	-	13.31	0.12	0.29	13.02
	4th month	13.02	-	13.02	0.12	0.29	12.73
	5th month	12.73	-	12.73	0.12	0.29	12.44
	6th month	12.44	-	12.44	0.11	0.29	12.15
	7th month	12.15	-	12.15	0.11	0.29	11.86
	8th month	11.86	-	11.86	0.11	0.29	11.57
	9th month	11.57	-	11.57	0.11	0.29	11.28
	10th month	11.28	-	11.28	0.10	0.29	10.99
	11th month	10.99	-	10.99	0.10	0.29	10.70
	12th month	10.70	-	10.70	0.10	0.29	10.41
					1.35	**3.47**	
3rd	Opening Balance						

	1st month	10.41	-	10.41	0.10	0.29	10.12
	2nd month	10.12	-	10.12	0.09	0.29	9.83
	3rd month	9.83	-	9.83	0.09	0.29	9.55
	4th month	9.55	-	9.55	0.09	0.29	9.26
	5th month	9.26	-	9.26	0.08	0.29	8.97
	6th month	8.97	-	8.97	0.08	0.29	8.68
	7th month	8.68	-	8.68	0.08	0.29	8.39
	8th month	8.39	-	8.39	0.08	0.29	8.10
	9th month	8.10	-	8.10	0.07	0.29	7.81
	10th month	7.81	-	7.81	0.07	0.29	7.52
	11th month	7.52	-	7.52	0.07	0.29	7.23
	12th month	7.23	-	7.23	0.07	0.29	6.94
					0.97	**3.47**	
4th	Opening Balance						
	1st month	6.94	-	6.94	0.06	0.29	6.65
	2nd month	6.65	-	6.65	0.06	0.29	6.36
	3rd month	6.36	-	6.36	0.06	0.29	6.07
	4th month	6.07	-	6.07	0.06	0.29	5.79
	5th month	5.79	-	5.79	0.05	0.29	5.50
	6th month	5.50	-	5.50	0.05	0.29	5.21
	7th month	5.21	-	5.21	0.05	0.29	4.92
	8th month	4.92	-	4.92	0.05	0.29	4.63
	9th month	4.63	-	4.63	0.04	0.29	4.34
	10th month	4.34	-	4.34	0.04	0.29	4.05

	11th month	4.05	-	4.05	0.04	0.29	3.76
	12th month	3.76	-	3.76	0.03	0.29	3.47
					0.59	**3.47**	
5th	Opening Balance						
	1st month	3.47	-	3.47	0.03	0.29	3.18
	2nd month	3.18	-	3.18	0.03	0.29	2.89
	3rd month	2.89	-	2.89	0.03	0.29	2.60
	4th month	2.60	-	2.60	0.02	0.29	2.31
	5th month	2.31	-	2.31	0.02	0.29	2.02
	6th month	2.02	-	2.02	0.02	0.29	1.74
	7th month	1.74	-	1.74	0.02	0.29	1.45
	8th month	1.45	-	1.45	0.01	0.29	1.16
	9th month	1.16	-	1.16	0.01	0.29	0.87
	10th month	0.87	-	0.87	0.01	0.29	0.58
	11th month	0.58	-	0.58	0.01	0.29	0.29
	12th month	0.29	-	0.29	0.00	0.29	-
					0.21	**3.47**	

DOOR TO DOOR	60	MONTHS
MORATORIUM PERIOD	6	MONTHS
REPAYMENT PERIOD	54	MONTHS

4.10. WORKING CAPITAL CALCULATIONS

COMPUTATION OF CLOSING STOCK & WORKING CAPITAL					(in Lacs)
PARTICULARS	**1st year**	**2nd year**	**3rd year**	**4th year**	**5th year**
Finished Goods					
	1.86	2.11	2.35	2.63	2.90
Raw Material					
	1.26	1.44	1.63	1.83	2.04
Closing Stock	**3.12**	**3.55**	**3.98**	**4.45**	**4.94**

COMPUTATION OF WORKING CAPITAL REQUIREMENT					
TRADITIONAL METHOD					(in Lacs)
Particulars	**Amount**	**Own Margin**		**Bank Finance**	
Finished Goods & Raw Material	3.12				
Less : Creditors	1.26				
Paid stock	**1.86**	**10%**	**0.19**	**90%**	**1.68**
Sundry Debtors	**4.36**	**10%**	**0.44**	**90%**	**3.93**
	6.23		**0.62**		**5.61**
MPBF					**5.61**
WORKING CAPITAL LIMIT DEMAND (from Bank)					**5.61**
Working Capital Margin					**0.62**

4.11. SALARY & WAGES

BREAK UP OF LABOUR CHARGES			
Particulars	**Wages Rs. per Month**	**No of Employees**	**Total Salary**
Plant Operator	14,000	2	28,000
Supervisor	18,000	1	18,000
Skilled (in thousand rupees)	12,000	3	36,000
Unskilled (in thousand rupees)	8,000	3	24,000
Total salary per month			**1,06,000**
Total annual labour charges	**(in lacs)**		**12.72**

BREAK UP OF STAFF SALARY CHARGES			
Particulars	**Salary Rs. per Month**	**No of Employees**	**Total Salary**
Administrative Staff	6,500	2	13,000
Manager	18,000	1	18,000
Accountant	15,000	1	15,000
Total salary per month			**46,000**
Total annual Staff charges	**(in lacs)**		**5.52**

4.12 POWER REQUIREMENT

Utility Charges (per month)		
Particulars	**value**	**Description**
Power connection required	20	KWH
consumption per day	160	units
Consumption per month	4,000	units
Rate per Unit	10	Rs.
power Bill per month	40,000	Rs.

4.13. DEPRECIATION CALCULATION

COMPUTATION OF DEPRECIATION			(in Lacs)
Description	**Plant & Machinery**	**Miss. Assets**	**TOTAL**
Rate of Depreciation	**15.00%**	**10.00%**	
Opening Balance	-	-	-
Addition	26.40	2.00	28.40
Total	26.40	2.00	28.40
Less : Depreciation	3.96	0.20	4.16
WDV at end of Year	**22.44**	**1.80**	**24.24**
Additions During The Year	-	-	-
Total	22.44	1.80	24.24
Less : Depreciation	3.37	0.18	3.55
WDV at end of Year	**19.07**	**1.62**	**20.69**
Additions During The Year	-	-	-
Total	19.07	1.62	20.69
Less : Depreciation	2.86	0.16	3.02
WDV at end of Year	**16.21**	**1.46**	**17.67**
Additions During The Year	-	-	-
Total	16.21	1.46	17.67
Less : Depreciation	2.43	0.15	2.58
WDV at end of Year	**13.78**	**1.31**	**15.09**
Additions During The Year	-	-	-
Total	13.78	1.31	15.09
Less : Depreciation	2.07	0.13	2.20
WDV at end of Year	**11.71**	**1.18**	**12.89**

4.14. REPAIR & MAINTENANCE: Repair & Maintenance is 2.5% of Gross Sale.

4.15. PROJECTIONS OF PROFITABILITY ANALYSIS

PROJECTED PROFITABILITY STATEMENT					**(in Lacs)**
PARTICULARS	**1st year**	**2nd year**	**3rd year**	**4th year**	**5th year**
Capacity Utilisation %	**60%**	**65%**	**70%**	**75%**	**80%**
SALES					
Gross Sale					
Processed Fish	93.53	108.73	122.69	138.29	154.81
Total	**93.53**	**108.73**	**122.69**	**138.29**	**154.81**
COST OF SALES					
Raw Material Consumed	54.00	61.62	69.72	78.30	87.36
Electricity Expenses	4.80	5.52	6.35	7.30	8.03
Depreciation	4.16	3.55	3.02	2.58	2.20
Wages & labour	12.72	14.76	16.23	18.18	19.63
Repair & maintenance	2.34	2.72	3.07	3.46	3.87
Packaging	1.87	2.17	2.45	2.77	3.10
Cost of Production	79.89	90.33	100.84	112.58	124.19
Add: Opening Stock /WIP	-	1.86	2.11	2.35	2.63
Less: Closing Stock /WIP	1.86	2.11	2.35	2.63	2.90
Cost of Sales	78.02	90.09	100.60	112.31	123.92
GROSS PROFIT	**15.50**	**18.64**	**22.09**	**25.99**	**30.90**
	16.57%	**17.14%**	**18.00%**	**18.79%**	**19.96%**
Salary to Staff	5.52	6.18	7.30	8.02	9.63
Interest on Term Loan	1.54	1.35	0.97	0.59	0.21
Interest on working Capital	0.62	0.62	0.62	0.62	0.62
Rent	3.60	3.96	4.36	4.79	5.27
selling & adm exp	1.87	2.39	2.70	3.11	3.28
TOTAL	**13.14**	**14.50**	**15.94**	**17.13**	**19.01**
NET PROFIT	2.36	4.14	6.15	8.86	11.89
	2.52%	**3.81%**	**5.01%**	**6.40%**	**7.68%**
Taxation	-	-	0.36	0.93	1.71
PROFIT (After Tax)	2.36	4.14	5.79	7.93	10.18

4.16. BREAK EVEN POINT ANALYSIS

BREAK EVEN POINT ANALYSIS					
Year	**I**	**II**	**III**	**IV**	**V**
Net Sales & Other Income	93.53	108.73	122.69	138.29	154.81
Less : Op. WIP Goods	-	1.86	2.11	2.35	2.63
Add : Cl. WIP Goods	1.86	2.11	2.35	2.63	2.90
Total Sales	**95.39**	**108.98**	**122.93**	**138.57**	**155.08**
Variable & Semi Variable Exp.					
Raw Material Consumed	54.00	61.62	69.72	78.30	87.36
Electricity Exp/Coal Consumption at 85%	4.08	4.69	5.40	6.21	6.83
Wages & Salary at 60%	10.94	12.56	14.12	15.72	17.56
Selling & adminstrative Expenses 80%	1.50	1.91	2.16	2.49	2.63
Interest on working Capital	0.616631	0.616631	0.616631	0.616631	0.616631
Repair & maintenance	2.34	2.72	3.07	3.46	3.87
Packaging	1.87	2.17	2.45	2.77	3.10
Total Variable & Semi Variable Exp	**75.35**	**86.30**	**97.53**	**109.56**	**121.95**
Contribution	**20.04**	**22.68**	**25.40**	**29.01**	**33.13**
Fixed & Semi Fixed Expenses					
Electricity Exp/Coal Consumption at 15%	0.72	0.83	0.95	1.10	1.20
Wages & Salary at 40%	7.30	8.38	9.41	10.48	11.70
Interest on Term Loan	1.54	1.35	0.97	0.59	0.21
Depreciation	4.16	3.55	3.02	2.58	2.20
Selling & adminstrative Expenses 20%	0.37	0.48	0.54	0.62	0.66
Rent	3.60	3.96	4.36	4.79	5.27
Total Fixed Expenses	**17.69**	**18.54**	**19.25**	**20.16**	**21.24**
Capacity Utilization	**60%**	**65%**	**70%**	**75%**	**80%**
OPERATING PROFIT	**2.36**	**4.14**	**6.15**	**8.86**	**11.89**
BREAK EVEN POINT	**53%**	**53%**	**53%**	**52%**	**51%**
BREAK EVEN SALES	**84.16**	**89.09**	**93.16**	**96.27**	**99.43**

4.17. PROJECTED BALANCE SHEET

PROJECTED BALANCE SHEET					**(in Lacs)**
PARTICULARS	**1st year**	**2nd year**	**3rd year**	**4th year**	**5th year**
Liabilities					
Capital					
opening balance		13.25	14.39	15.68	17.61
Add:- Own Capital	3.45				
Add:- Retained Profit	2.36	4.14	5.79	7.93	10.18
Less:- Drawings	2.50	3.00	4.50	6.00	7.60
Subsidy/grant	9.94				
Closing Balance	13.25	14.39	15.68	17.61	20.18
Term Loan	13.88	10.41	6.94	3.47	-
Working Capital Limit	5.61	5.61	5.61	5.61	5.61
Sundry Creditors	1.26	1.44	1.63	1.83	2.04
Provisions & Other Liab	0.40	0.50	0.60	0.72	0.86
TOTAL :	**34.40**	**32.35**	**30.45**	**29.23**	**28.69**
Assets					
Fixed Assets (Gross)	28.40	28.40	28.40	28.40	28.40
Gross Dep.	4.16	7.71	10.73	13.31	15.51
Net Fixed Assets	**24.24**	**20.69**	**17.67**	**15.09**	**12.89**
Current Assets					
Sundry Debtors	4.36	5.07	5.73	6.45	7.22
Stock in Hand	3.12	3.55	3.98	4.45	4.94
Cash and Bank	2.67	3.03	3.08	3.23	3.63
TOTAL :	**34.40**	**32.35**	**30.45**	**29.23**	**28.69**

4.18. CASH FLOW STATEMENT

PROJECTED CASH FLOW STATEMENT					**(in Lacs)**
PARTICULARS	**1st year**	**2nd year**	**3rd year**	**4th year**	**5th year**
SOURCES OF FUND					
Own Margin	3.45				
Net Profit	2.36	4.14	6.15	8.86	11.89
Depriciation & Exp. W/off	4.16	3.55	3.02	2.58	2.20
Increase in Cash Credit	5.61	-	-	-	-
Increase In Term Loan	15.62	-	-	-	-
Increase in Creditors	1.26	0.18	0.19	0.20	0.21
Increase in Provisions & Oth lib	0.40	0.10	0.10	0.12	0.14
Sunsidy/grant	9.94				
TOTAL :	**42.80**	**7.96**	**9.46**	**11.75**	**14.44**
APPLICATION OF FUND					
Increase in Fixed Assets	28.40				
Increase in Stock	3.12	0.42	0.43	0.47	0.48
Increase in Debtors	4.36	0.71	0.65	0.73	0.77
Repayment of Term Loan	1.74	3.47	3.47	3.47	3.47
Drawings	2.50	3.00	4.50	6.00	7.60
Taxation	-	-	0.36	0.93	1.71
TOTAL :	**40.12**	**7.60**	**9.42**	**11.60**	**14.04**
Opening Cash & Bank Balance	-	2.67	3.03	3.08	3.23
Add : Surplus	2.67	0.36	0.04	0.15	0.41
Closing Cash & Bank Balance	**2.67**	**3.03**	**3.08**	**3.23**	**3.63**

4.19. DEBT SERVICE COVERAGE RATIO

CALCULATION OF D.S.C.R					
PARTICULARS	**1st year**	**2nd year**	**3rd year**	**4th year**	**5th year**
CASH ACCRUALS	6.52	7.68	8.81	10.51	12.37
Interest on Term Loan	1.54	1.35	0.97	0.59	0.21
Total	8.05	9.04	9.78	11.09	12.58
REPAYMENT					
Instalment of Term Loan	1.74	3.47	3.47	3.47	3.47
Interest on Term Loan	1.54	1.35	0.97	0.59	0.21
Total	3.27	4.82	4.44	4.06	3.68
DEBT SERVICE COVERAGE RATIO	**2.46**	**1.87**	**2.20**	**2.73**	**3.42**
AVERAGE D.S.C.R.					**2.49**