



Detailed Project Report ***On*** ***Bio-Floc Fish Farming (25 Tanks)***

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)	Bio-Floc Fish Farming
2	Sector (as per the Illustrative List of Enterprises)	Fishery
3	Project Capacity ¹	25 Tanks
4	Key components of the project	Production of Fish
5	Project Address (Village/Ward, Gram Pranchayat/Municipality, Block, District)	
6	Products/Output from the project	Fish
7	Total Project Cost	Rs. 53,17,000
8	Fixed Capital Cost	Rs. 51,89,000
9	Working/Recurring capital	Rs. 1,28,000
10	Bank Finance/ Self Finance	Bank Finance
11	Bank Loan Amount	Rs. 47,85,300
12	Promoter Contribution	Rs. 5,31,700
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 2. Debt Service Coverage Ratio (DSCR) 3. Internal Rate of Return 4. Break Even Year	Rs. 19,63,626
		2.34
		35.48%
		2 Year 9 Months
17	Estimated employment to be generated (nos.)	5

Note:

1. Customized DPR is to be prepared as per the information given by the beneficiary.
2. The CIS will be calculated as per the cost norm of MKUY guideline.
3. All the prices quoted here are indicative in nature.
4. The particulars under each component of the Capital Investment may be changed as per the requirement of the project.

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, Society/Trust: Darpan Unique Id



2.2. Project Consultant Details

DPR prepared by: APICOL, Baramunda, Bhubaneswar





2.3. Concept and Scope of the Project

“Bioflocs” are a consortium of particulate matter formed predominantly by a biota of aerobic and heterotrophic bacteria, protozoa, microalgae (diatoms), metazoans, detritus, faeces, remnants of feed and remains of dead organisms

Principle on which Bio-floc works

Bio-floc system is a wastewater treatment, which has gained vital importance as an approach in aquaculture.

- It combines the removal of nitrogenous metabolites from the water by addition of carbon source externally for the production of microbial biomass under strong aeration, which then can be used by the cultured fish species as an additional food source.
- The principle of the technique is to maintain the higher C-N ratio by adding carbohydrate source and the water quality is improved through the production of high-quality single cell microbial protein.
- In such condition, heterotrophic microbial growth occurs which assimilates the nitrogenous waste that can be exploited by the cultured species as a feed and also works as bioreactor controlling of water quality.
- Immobilization of toxic nitrogen species occurs more rapidly in biofloc because of the growth rate and microbial production per unit substrate of heterotrophs are ten-times greater than that of the autotrophic nitrifying bacteria.
- This technology is based on the principle of flocculation within the system.

Major requirements of BFT

- High stocking density
- High aeration (To keep DO level >6ppm)
- Sludge/waste disposal system
- Poly-lined ponds /poly-tarpaulin or cemented tanks
- Indoor/Outdoor
- Suitable candidate species (Fin/Shellfish & FW/BW/MW)
- Zero water exchange
- Zero tolerance to antibiotics

Basic Requisites for BFT

- Biofloc tank installation
- Air pump and supply
- Feed, probiotics, molasses & chemicals
- Water quality test kit & equipment

Nutritional value of Bio-floc

- Dry weight protein ranges from 25–50%
- Fat ranges from 0.5–15%



- Good source of vitamins and minerals, particularly phosphorous
- It has an effect similar to gut probiotics
- The dried bio-floc meal is proposed as an ingredient to replace the fishmeal or soybean meal in the feed.

Advantage of Bio-floc technology

- It is an eco-friendly fish farming system and it reduces environmental impact.
- Judicial use of land and water
- Limited or zero water exchange system thus reducing the pollution
- Higher productivity (it enhances survival rate, growth performance and feed conversion in the culture systems of fish).
- It provides higher bio-security thus minimizing the risk of disease outbreaks.
- It reduces utilization of protein rich feed and cost of standard feed.
- It reduces the pressure on capture fisheries i.e., use of cheaper food fish and trash fish for fish feed formulation.

Fish Species Suitable for Bio-floc Technology

Bio-floc system works best with species that are able to derive some nutritional benefits from the direct consumption of floc. Bio-floc system is most suitable for species that can tolerate high solids concentration in water and are generally tolerant of poor water quality. Some of the species that are suitable for bio-floc technology are:

- Air breathing fish like Singhi (*Heteropneustes fossilis*), Magur (*Clarias batrachus*), Pabda (*Ompok pabda*), Anabas/Koi (*Anabas testudineus*), Pangasius (*Pangasianodon hypophthalmus*).
- Non-air-breathing fishes like Common Carp (*Cyprinus carpio*), Rohu (*Labeo rohita*), Tilapia (*Oreochromis niloticus*), Milkfish (*Chanos chanos*).
- Shellfishes like Vannamei (*Litopenaeus vannamei*) and Tiger Shrimp (*Penaeus monodon*) - in brackish water systems.

Bio-floc Fish Farm Infrastructure

Under the scheme promoted by the Department, the technical standards of circular tanks constructed from cement concrete or PVC/HDPE polyliners with metallic/PVC frames is a minimum of 4-meter diameter, 1.3-meter depth and with central drain. The tanks should be housed in a shed constructed from shade net. Good sunlight is essential for bio-floc 04 Bio-floc Technology in Fish Farming culture. Transparent polyliners can also be used by replacing shade nets to increase the sunlight and to protect the tanks from rainwater. Freshwater can be sourced from borewell or municipal tap water line. In case of municipal tap water, care should be taken to remove all the chlorine content from source water. Each tank should be provided with ample aeration line with air blower. Air blowers should have to power backup from inverter with battery or mini genset for continuous aeration.



Example of GIFT farming in Bio-floc system: Seed stocking density, feed management and water quality management

S. No.	Component	Details
1	Bio-floc Tank size (1.20 m water depth)	4 metre diameter and 1.5-meter height
2	Water holding capacity of each tank	15,000 Litres capacity (but maintain 1.2 m water depth with a volume of 12,000 Litres)
3	Water quality parameters	Dissolved Oxygen - 5mg/L; Temperature- 26-34°C, pH-7.5 to 8, TDS-600ppm, Floc density-25-40mg/l, Ammonia-0.5 ppm, Nitrite-0.3 ppm, Nitrate-150 ppm, Alkalinity-120-280 ppm
4	Stocking density depending on species)	100 nos/m ³ (1000 nos. of fingerlings per tank)
5	Common Species cultured	GIFT Tilapia (<i>Oreochromis niloticus</i>) - mono-sex fingerlings bought from licensed hatcheries should be stocked for fast and uniform growth
6	Survival (%)	80
7	Type of feed to be used (Fat 3%)	Floating pellet feed
8	% of feed per day	2-3% of Average Body weight per day
9	Feeding frequency	4 times early stage, later 2 times per day
10	FCR	1:1.25
11	Duration of culture	4 months
12	Size/ weight of the fish at harvest (gram)	500 g average weight
13	No. of crops per year	3

How to Prepare the Inoculum:

METHOD I:

For 15000 Litres of fresh water 150 Litres of inoculum is required for the floc development

Step 1

Take clean tub/can with 150 Litres of water and continue vigorous aeration

Step 2

Add 3 Kg of pond soil

+

1.5 gm of Ammonium sulphate /Urea

+



30 gm of carbon source (Jaggery /Wheat flour /Tapioca flour)

Step 3

Mix it well with water in tub and provide adequate aeration

Step 4

The inoculum will be ready after 24-48 hrs and it can be transferred to main tank

- Daily addition of carbon source is required for the development of floc. For every 1 kg of feed given (with 25 % of crude protein), 600 gm of carbon source is to be added to the system to maintain C: N of 10:1.
- Once the floc volume reaches 15-20ml further addition of carbon source is not required

METHOD II:

Step 1

Take clean tub/can with 130 Litres of water and continue vigorous aeration

Step 2

Add 20 Litres of pond water/RAS water (before filtration)

+

30 gm of carbon source (Jaggery /Wheat flour /Tapioca flour)

+

10 gm of probiotic (with Bacillus Sp., Aspergillus Sp. etc with a total concentration of 10×10^9 CFU/gm)



Follow the remaining steps as mentioned in **method 1**



***NB: Well developed inoculum will be turbid with foam on the water surface (Ideal Volume of Floc in Imhoff cone for shrimp is 10-15 ml/L**

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)	15	Days
4	Collection from Debtors	15	Days
5	Payable to Creditors	20	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	Days
11	Raw Material in Stock (on sales)	5	Days
12	Finished Goods in stock (on sales)	10	Days
13	Promoter's Contribution (Term Loan)	10	%
14	Promoter's Contribution (Working Capital)	10	%
15	Working Capital Requirement	1	Months
16	Working Capital Utilisation	100	%
17	No. of working days	360	Days
18	No. of Tanks	25	Nos.
19	No. of fingerlings per tank (Stocking)	1200	Nos.
20	Production per tank per crop of Tilapia/ Pangasius/ Catfish/ Amur carp/ Scampi/ shrimp/ barb etc.	600	kg
21	No. of crop per year	3	Nos.
22	Feed per Tank per Year	400	Kg
23	Cost of Feed per kg	36	Rs
24	Cost of one Fingerling	4	Rs
25	Cost of probiotic per tank per annum	1600	Rs
26	Office Space	200	Sq. ft
27	Store Space	200	Sq. ft
28	Cost of Office construction per sq. ft	850	Rs
29	Cost of Store construction per sq. ft	400	Rs
30	Space required for one Tank	345	Sq. ft
31	Cost of construction of one Tank	45000	Rs
32	Cost of construction of shed with flooring per sq. ft.	320	Rs
33	Survival Rate	80	%
34	Size /Weight of Fish at harvest	0.5	Kg



3. Financial Details

4.1. Project Fixed Capital

Details of Fixed Assets					
Sl. No.	Particulars	Unit	Qty.	Cost per unit (Rs)	Total (Rs)
A Land					
1	Land Development	Sq. ft	10000	0.70	7,000
2	Fencing (Barbed wire)	ft	200	60.00	12,000
	Sub Total				19,000
B Civil Construction					
1	Construction of shed including installation charges	sq. ft	8625	320.00	27,60,000
2	Setup of Bio-Floc tanks: Brick Masonary with frames, solid base, drain pipe fish net covering (4m dia x 1.3 m depth tank =15,000 lts Capacity) with one tank 15 cum (1.2 Meter Height, 5 Meter Dia. Water depth with Vol. of 12,000 Lit.) with 375 cum	Nos.	25	45,000.00	11,25,000
3	Store	sq. ft	200	400.00	80,000
4	Office	sq. ft	200	850.00	1,70,000
	Sub Total				41,35,000
C Water Supply					
1	Water Supply with borewell, pump (2 nos of 3 HP) and pvc pipe fittings for air & water flow				3,00,000
D Electrification					
1	Electrical Installation (Transformer/DG Set/ Power Generator etc.)				2,50,000
E Plant & Machinery					
Sl. No.	Particulars	Specification	Qty	Unit Price (Rs)	Total (Rs)
1	Ring Blower (6 nos 3 HP)/ High pressure air pump			LS	2,50,000
2	Nets & Accessories (Air Oxi tube/ Air Oxi Spider etc.)			LS	1,87,500
3	Electronic weighing balance			LS	1,000
4	Other accessories			LS	11,500
	Total Machinery Cost				4,50,000
	(all the machinery items to be specified)				
G Miscellaneous Expenditure					
1	Insurance premium of assets				15,000
2	Cost of DPR Preparation				12,548
3	Other miscellaneous exp.				7,452



Details of Fixed Assets					
Sl. No.	Particulars	Unit	Qty.	Cost per unit (Rs)	Total (Rs)
	Total Miscellaneous Expenditure				35,000

4.2. Project Variable Expenses

Details of Recurring Expenditure						
A	Details of raw material (per annum @ 100%)					
Sl. No.	Items	Unit	Rate/Unit (in Rs)	Qty/day	Qty/annum(kg)	Total (Rs)
1	Fish Fingerlings Tilapia/ Pangasius/ Catfish/ Amur carp/ Scampi/ shrimp/ barb etc.	Nos	4		90,000	3,60,000
2	Formulated Feed (24-30% crude protein & 3% fat)	Kg	36		10,000	3,60,000
3	Probiotics, Carbon source test kits	Rs				40,000
	Total				1,00,000	7,60,000

Details of salary and other benefits				
Sl. No.	Type of Workers	No. of Worker	Salary Per Month/head (Rs)	Total Salary per Annum (Rs)
1	Supervisor	1	15000	1,80,000
2	Unskilled	3	10000	3,60,000
3	Skilled	1	12,000	1,44,000
	Grand Total	5	37,000	6,84,000

4.3. Details of Sales

Details of sales						
Sl. No.	Type of products	Unit	Rate/Unit (Rs)	Quantity/day	Quantity/annum	Total (Rs)
1	Tilapia/ Pangasius/ Catfish/ Amur carp/ Scampi/ shrimp/ barb etc. production	Kg	130		36,000	46,80,000
	Total				36,000	46,80,000



4.4. Project Balance Sheet

Liabilities	I	II	III	IV	V	VI	VII
Opening Capital	-	1,475,942	2,100,882	2,610,112	3,202,785	3,695,914	4,360,238
Add: Introduced	531,700						
Add: Profit	1,350,242	1,525,939	1,629,231	1,965,673	2,077,129	2,534,324	2,662,842
Less: Drawing	406,000	901,000	1,120,000	1,373,000	1,584,000	1,870,000	2,107,000
Closing Capital	1,475,942	2,100,882	2,610,112	3,202,785	3,695,914	4,360,238	4,916,080
Term Loan from Bank	4,201,070	3,677,764	3,093,901	2,442,475	1,715,666	904,752	-
Current Liabilities							
Cash Credit from Bank	115,200	115,200	115,200	115,200	115,200	115,200	115,200
Sundry Creditors	30,400	42,600	47,533	52,867	55,533	61,600	64,733
Expenses Payable	73,500	79,600	84,200	89,100	93,600	99,000	104,200
Current Provisions	310,818	386,117	430,385	574,574	622,341	818,282	873,361
Total Current Liabilities	529,918	623,517	677,318	831,741	886,674	1,094,082	1,157,494
Total Liabilities	6,206,930	6,402,162	6,381,331	6,477,000	6,298,255	6,359,071	6,073,574
Assets							
Fixed Assets	4,904,000	4,904,000	4,904,000	4,904,000	4,904,000	4,904,000	4,904,000
Less Depreciation	523,500	931,800	1,346,648	1,716,217	2,045,606	2,339,315	2,601,324
Net Fixed Assets	4,380,500	3,972,200	3,557,353	3,187,783	2,858,394	2,564,685	2,302,676
Current Assets							
Sundry Debtors	140,400	196,600	219,400	243,900	256,100	283,900	298,100
Inventories	1,214,400	1,251,000	1,715,400	1,913,400	2,117,800	2,233,600	2,465,000
Cash and Bank Balance	28,100	39,400	43,900	48,800	51,300	56,800	59,700
Other Current Assets	443,530	942,962	845,279	1,083,118	1,014,660	1,220,086	948,098
Total Current Assets	1,826,430	2,429,962	2,823,979	3,289,218	3,439,860	3,794,386	3,770,898
Total Assets	6,206,930	6,402,162	6,381,331	6,477,000	6,298,255	6,359,071	6,073,574



4.5. Calculation of Depreciation

Rates of Depreciation	10%	15%	Total depreciation for the year (Rs)
Year 1	418,500.00	105,000	523,500
Year 2	376,650.00	89,250	465,900
Year 3	338,985.00	75,863	414,848
Year 4	305,086.50	64,483	369,570
Year 5	274,577.85	54,811	329,389
Year 6	247,120.07	46,589	293,709
Year 7	222,408.06	39,601	262,009

4.6. Projected P&L

Description	Year ending March 31st						
	I	II	III	IV	V	VI	VII
Capacity Utilisation	60	80	85	90	90	95	95
Revenue	60	80	85	90	90	95	95
Sales	2,808,000	3,932,000	4,387,000	4,878,000	5,122,000	5,677,000	5,961,000
Opening Stock of Finished Goods	-	(1,123,200)	(1,572,800)	(1,754,800)	(1,951,200)	(2,048,800)	(2,270,800)
Closing Stock of Finished Goods	1,123,200	1,572,800	1,754,800	1,951,200	2,048,800	2,270,800	2,384,400
Total Income (A)	3,931,200	4,381,600	4,569,000	5,074,400	5,219,600	5,899,000	6,074,600
Expenditure							
Opening stock of Raw Material	-	91,200	127,800	142,600	158,600	166,600	184,800
Purchase (Net) of Material	456,000	639,000	713,000	793,000	833,000	924,000	971,000
Closing Stock of Raw material	91,200	127,800	142,600	158,600	166,600	184,800	194,200
Raw Material Consumption	364,800	602,400	698,200	777,000	825,000	905,800	961,600
Repair & Maintenance- Machinery (@5% of Cost)	97,700	102,600	107,800	113,200	118,900	124,900	131,200
Utility expense	56,160	78,700	87,800	97,600	102,500	113,600	121,500
Insurance cost	15,000	15,800	16,600	17,500	18,400	19,400	20,400
Administrative salaries and wages	684,000	718,200	754,200	792,000	831,600	873,200	916,900
Other Misc. Expenses [@1% of sales]	28,080	39,320	43,870	48,780	51,220	56,770	59,610
Total Cost	1,245,740	1,557,020	1,708,470	1,846,080	1,947,620	2,093,670	2,211,210
Profit Before Depreciation, Interest	2,685,460	2,824,580	2,860,530	3,228,320	3,271,980	3,805,330	3,863,390



Description	Year ending March 31st						
	I	II	III	IV	V	VI	VII
and Tax							
Depreciation	523,500	465,900	414,848	369,570	329,389	293,709	262,009
Profit Before Interest and Tax	2,161,960	2,358,680	2,445,683	2,858,750	2,942,591	3,511,621	3,601,381
Interest on Term Loan	490,531	436,256	375,699	308,136	232,753	148,648	54,810
Interest on Working Capital Loan	10,368	10,368	10,368	10,368	10,368	10,368	10,368
Total Interest Paid	500,899	446,624	386,067	318,504	243,121	159,016	65,178
Profit Before Tax	1,661,061	1,912,056	2,059,615	2,540,247	2,699,470	3,352,605	3,536,203
Income Tax	310,818	386,117	430,385	574,574	622,341	818,282	873,361
Profit after Tax	1,350,242	1,525,939	1,629,231	1,965,673	2,077,129	2,534,324	2,662,842

4.7. Projected Cash Flow

Period Ending:	I	II	III	IV	V	VI	VII
Cash & Bank Balance at Beginning	-	28,100	97,000	101,500	106,400	108,900	114,400
Cash Inflow during the Period	6,730,430	2,085,438	2,195,562	2,489,665	2,529,909	3,035,440	3,260,252
Cash Outflow during the Period	6,702,330	2,016,538	2,191,062	2,484,765	2,527,409	3,029,940	3,257,352
Closing Cash & Bank Balance	28,100	97,000	101,500	106,400	108,900	114,400	117,300

4.8. Projected Loan Repayment

Year	Interest	EMI	Principal
1	490,531.47	959,561.88	469,030.41
2	436,255.82	959,561.88	523,306.07
3	375,699.45	959,561.88	583,862.44
4	308,135.57	959,561.88	651,426.32
5	232,753.27	959,561.88	726,808.61
6	148,647.82	959,561.88	810,914.06
7	54,809.79	959,561.88	904,752.09
Total	2,046,833.19	6,716,933.19	4,670,100.00



4.9. Calculation of DSCR, IRR and BEP

Calculation of DSCR							
Year	I	II	III	IV	V	VI	VII
Net Sales	Net Sales	2,808,000	3,932,000	4,387,000	4,878,000	5,122,000	5,677,000
Net Profit	Net Profit	1,350,242	1,525,939	1,629,231	1,965,673	2,077,129	2,534,324
Interest Paid	Interest Paid	500,899	446,624	386,067	318,504	243,121	159,016
Cash Accruals (a)	Cash Accruals (a)	1,851,142	1,972,563	2,015,298	2,284,176	2,320,250	2,693,339
Interest Paid	878,044	783,879	677,772	558,208	423,480	271,665	100,597
Principal	469,030	523,306	583,862	651,426	726,809	810,914	904,752
Interest	500,899	446,624	386,067	318,504	243,121	159,016	65,178
Total (b)	969,930	969,930	969,930	969,930	969,930	969,930	969,930
DSCR	1.91	2.03	2.08	2.35	2.39	2.78	2.81
Average DSCR							2.34

Calculation of Break-Even Point (BEP)							
Sales	3,931,200	4,381,600	4,569,000	5,074,400	5,219,600	5,899,000	6,074,600
Variable Cost	392,880	641,720	742,070	825,780	876,220	962,570	1,021,210
Contribution	3,538,320	3,739,880	3,826,930	4,248,620	4,343,380	4,936,430	5,053,390
Fixed Cost	1,877,259	1,827,824	1,767,315	1,708,373	1,643,910	1,583,825	1,517,187
BEP Sales	2,085,702	2,141,457	2,110,010	2,040,420	1,975,547	1,892,660	1,823,786
Average BEP sales							2,009,940

Calculation of Internal Rate of Return (IRR)				
SI. No.	Year	PAT	Depreciation	Cash Accrual
	Cash outflow at beginning			-5,317,000
1	31/03/2023	1,350,242	523,500	1,873,742
2	31/03/2024	1,525,939	465,900	1,991,839
3	31/03/2025	1,629,231	414,848	2,044,078
4	31/03/2026	1,965,673	369,570	2,335,242
5	31/03/2027	2,077,129	329,389	2,406,518
6	31/03/2028	2,534,324	293,709	2,828,033
7	31/03/2029	2,662,842	262,009	2,924,851
IRR		35.48%		
Payback Period				2 Years 9 Months



4.10. Summary of Project Cost

SI. No.	Name of Assets	Amount (Rs)
1	Land Development	19,000
2	Civil Construction	41,35,000
3	Irrigation/Water Supply	3,00,000
4	Electrification	2,50,000
5	Plant & Machinery	4,50,000
6	Livestock	-
7	Insurance	15,000
8	DPR Cost	12,548
9	Other Miscellaneous Exp.	7,452
	Total Fixed Cost	51,89,000
	Recurring	1,28,000
	Cost of Project	53,17,000



Detailed Project Report ***On*** ***Bio-Floc Fish Farming (50 Tanks)***

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)	Bio-Floc Fish Farming
2	Sector (as per the Illustrative List of Enterprises)	Fishery
3	Project Capacity ¹	50 Tanks
4	Key components of the project	Production of Fish
5	Project Address (Village/Ward, Gram Pranchayat/ Municipality, Block, District)	
6	Products/Output from the project	Fish
7	Total Project Cost	Rs. 98,89,000
8	Fixed Capital Cost	Rs. 96,91,000
9	Working/Recurring capital	Rs. 1,98,000
10	Bank Finance/ Self Finance	Bank Finance
11	Bank Loan Amount	Rs. 89,00,100
12	Promoter Contribution	Rs. 9,88,900
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 2. Debt Service Coverage Ratio (DSCR) 3. Internal Rate of Return 4. Break Even Year	Rs. 36,01,164
		2.30
		32.05%
		3 Year 2 Month
17	Estimated employment to be generated (nos.)	5

Note:

1. Customized DPR is to be prepared as per the information given by the beneficiary.
2. The CIS will be calculated as per the cost norm of MKUY guideline.
3. All the prices quoted here are indicative in nature.
4. The particulars under each component of the Capital Investment may be changed as per the requirement of the project.

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, Society/Trust: Darpan Unique Id



2.2. Project Consultant Details

DPR prepared by: APICOL, Baramunda, Bhubaneswar





2.3. Concept and Scope of the Project

“Bioflocs” are a consortium of particulate matter formed predominantly by a biota of aerobic and heterotrophic bacteria, protozoa, microalgae (diatoms), metazoans, detritus, faeces, remnants of feed and remains of dead organisms

Principle on which Bio-floc works

Bio-floc system is a wastewater treatment, which has gained vital importance as an approach in aquaculture.

- It combines the removal of nitrogenous metabolites from the water by addition of carbon source externally for the production of microbial biomass under strong aeration, which then can be used by the cultured fish species as an additional food source.
- The principle of the technique is to maintain the higher C-N ratio by adding carbohydrate source and the water quality is improved through the production of high-quality single cell microbial protein.
- In such condition, heterotrophic microbial growth occurs which assimilates the nitrogenous waste that can be exploited by the cultured species as a feed and also works as bioreactor controlling of water quality.
- Immobilization of toxic nitrogen species occurs more rapidly in biofloc because of the growth rate and microbial production per unit substrate of heterotrophs are ten-times greater than that of the autotrophic nitrifying bacteria.
- This technology is based on the principle of flocculation within the system.

Major requirements of BFT

- High stocking density
- High aeration (To keep DO level >6ppm)
- Sludge/waste disposal system
- Poly-lined ponds /poly-tarpaulin or cemented tanks
- Indoor/Outdoor
- Suitable candidate species (Fin/Shellfish & FW/BW/MW)
- Zero water exchange
- Zero tolerance to antibiotics

Basic Requisites for BFT

- Biofloc tank installation
- Air pump and supply
- Feed, probiotics, molasses & chemicals
- Water quality test kit & equipment

Nutritional value of Bio-floc

- Dry weight protein ranges from 25–50%
- Fat ranges from 0.5–15%



- Good source of vitamins and minerals, particularly phosphorous
- It has an effect similar to gut probiotics
- The dried bio-floc meal is proposed as an ingredient to replace the fishmeal or soybean meal in the feed.

Advantage of Bio-floc technology

- It is an eco-friendly fish farming system and it reduces environmental impact.
- Judicial use of land and water
- Limited or zero water exchange system thus reducing the pollution
- Higher productivity (it enhances survival rate, growth performance and feed conversion in the culture systems of fish).
- It provides higher bio-security thus minimizing the risk of disease outbreaks.
- It reduces utilization of protein rich feed and cost of standard feed.
- It reduces the pressure on capture fisheries i.e., use of cheaper food fish and trash fish for fish feed formulation.

Fish Species Suitable for Bio-floc Technology

Bio-floc system works best with species that are able to derive some nutritional benefits from the direct consumption of floc. Bio-floc system is most suitable for species that can tolerate high solids concentration in water and are generally tolerant of poor water quality. Some of the species that are suitable for bio-floc technology are:

- Air breathing fish like Singhi (*Heteropneustes fossilis*), Magur (*Clarias batrachus*), Pabda (*Ompok pabda*), Anabas/Koi (*Anabas testudineus*), Pangasius (*Pangasianodon hypophthalmus*).
- Non-air-breathing fishes like Common Carp (*Cyprinus carpio*), Rohu (*Labeo rohita*), Tilapia (*Oreochromis niloticus*), Milkfish (*Chanos chanos*).
- Shellfishes like Vannamei (*Litopenaeus vannamei*) and Tiger Shrimp (*Penaeus monodon*) - in brackish water systems.

Bio-floc Fish Farm Infrastructure

Under the scheme promoted by the Department, the technical standards of circular tanks constructed from cement concrete or PVC/HDPE polyliners with metallic/PVC frames is a minimum of 4-meter diameter, 1.3-meter depth and with central drain. The tanks should be housed in a shed constructed from shade net. Good sunlight is essential for bio-floc 04 Bio-floc Technology in Fish Farming culture. Transparent polyliners can also be used by replacing shade nets to increase the sunlight and to protect the tanks from rainwater. Freshwater can be sourced from borewell or municipal tap water line. In case of municipal tap water, care should be taken to remove all the chlorine content from source water. Each tank should be provided with ample aeration line with air blower. Air blowers should have to power backup from inverter with battery or mini genset for continuous aeration.



Example of GIFT farming in Bio-floc system: Seed stocking density, feed management and water quality management

S. No.	Component	Details
1	Bio-floc Tank size (1.20 m water depth)	4 metre diameter and 1.5-meter height
2	Water holding capacity of each tank	15,000 Litres capacity (but maintain 1.2 m water depth with a volume of 12,000 Litres)
3	Water quality parameters	Dissolved Oxygen - 5mg/L; Temperature- 26-34°C, pH-7.5 to 8, TDS-600ppm, Floc density-25-40mg/l, Ammonia-0.5 ppm, Nitrite-0.3 ppm, Nitrate-150 ppm, Alkalinity-120-280 ppm
4	Stocking density depending on species)	100 nos/m ³ (1000 nos. of fingerlings per tank)
5	Common Species cultured	GIFT Tilapia (<i>Oreochromis niloticus</i>) - mono-sex fingerlings bought from licensed hatcheries should be stocked for fast and uniform growth
6	Survival (%)	80
7	Type of feed to be used (Fat 3%)	Floating pellet feed (Crude Protein 22-24%;
8	% of feed per day	2-3% of Average Body weight per day
9	Feeding frequency	4 times early stage, later 2 times per day
10	FCR	1:1.25
11	Duration of culture	4 months
12	Size/ weight of the fish at harvest (gram)	500 g average weight
13	No. of crops per year	3

How to Prepare the Inoculum:

METHOD I:

For 15000 Litres of fresh water 150 Litres of inoculum is required for the floc development

Step 1

Take clean tub/can with 150 Litres of water and continue vigorous aeration

Step 2

Add 3 Kg of pond soil

+

1.5 gm of Ammonium sulphate /Urea

+



30 gm of carbon source (Jaggery /Wheat flour /Tapioca flour)

Step 3

Mix it well with water in tub and provide adequate aeration

Step 4

The inoculum will be ready after 24-48 hrs and it can be transferred to main tank

- Daily addition of carbon source is required for the development of floc. For every 1 kg of feed given (with 25 % of crude protein), 600 gm of carbon source is to be added to the system to maintain C: N of 10:1.
- Once the floc volume reaches 15-20ml further addition of carbon source is not required

METHOD II:

Step 1

Take clean tub/can with 130 Litres of water and continue vigorous aeration

Step 2

Add 20 Litres of pond water/RAS water (before filtration)

+

30 gm of carbon source (Jaggery /Wheat flour /Tapioca flour)

+

10 gm of probiotic (with Bacillus Sp., Aspergillus Sp. etc with a total concentration of 10×10^9 CFU/gm)

Follow the remaining steps as mentioned in

method 1



***NB: Well developed inoculum will be turbid with foam on**

the water surface (Ideal Volume of Floc in Imhoff cone for shrimp is 10-15 ml/L)



Techno-commercial Assumptions

Sl. No.	Parameter	Value	Unit
Sl. No	Parameters	Value	Unit
1	Increase in Rate of Product	5	%
2	Increase in Electricity consumption	5	%
3	Collection from Debtors (First Year)	15	Days
4	Collection from Debtors	15	Days
5	Payable to Creditors	20	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	Days
11	Raw Material in Stock (on sales)	5	Days
12	Finished Goods in stock (on sales)	10	Days
13	Promoter's Contribution (Term Loan)	10	%
14	Promoter's Contribution (Working Capital)	10	%
15	Working Capital Requirement	1	Months
16	Working Capital Utilisation	100	%
17	N0. of Working days	360	Days
18	No. of Tanks	50	Nos.
19	No. of fingerlings per tank (Stocking)	1200	Nos.
20	Production per tank per crop of Tilapia/ Pangasius/ Catfish/ Amur carp/ Scampi/ shrimp/ barb etc.	600	kg
21	No. of crop per year	3	Nos.
22	Feed per Tank per Year	400	Kg
23	Cost of Feed per kg	36	Rs
24	Cost of one Fingerling	4	Rs
25	Cost of probiotic per tank per annum	1600	Rs
26	Office Space	200	Sq. ft
27	Store Space	200	Sq. ft
28	Cost of Office construction per sq. ft	850	Rs
29	Cost of Store construction per sq. ft	400	Rs
30	Space required for one Tank	345	Sq. ft
31	Cost of construction of one Tank	45000	Rs
32	Cost of construction of shed with flooring per sq. ft.	320	Rs
33	Survival Rate	80	%
34	Size /Weight of Fish at harvest	0.5	Kg

3. Financial Details

4.1. Project Fixed Capital

Details of Fixed Assets



Sl. No.	Particulars	Unit	Qty.	Cost per unit (Rs)	Total (Rs)
A	Land				
1	Land Development	Sq. ft	20000	0.70	14,000
2	Fencing (Barbed wire)	ft	200	60.00	12,000
	Sub Total				26,000
B	Civil Construction				
1	Construction of Shed including installation cost	sq. ft	17250	320.00	55,20,000
2	Setup of Bio-Floc tanks : Brick Masonary with frames, solid base, drain pipe fish net covering (4m dia x 1.3 m depth tank =15,000 lts Capacity) with 750 cum capacity	Nos.	50	45,000.00	22,50,000
3	Store	sq. ft	200	400	80,000
4	Office	sq. ft	200	850.00	1,70,000
	Sub Total				80,20,000
C	Water Supply				
1	Water Supply with borewell, pump (3 HP) and PVC pipe fittings for air and water flow			LS	3,00,000
D	Electrification				
1	Electrical Installation & Transformer/ DG Set/ Power Generator/ Any other back up system			LS	4,00,000
E	Plant & Machinery				
Sl. No.	Particulars	Specification	Qty	Unit Price (Rs)	Total (Rs)
1	Ring Blower 8 Nos of 3 HP/ High pressure air pump and other accessories			LS	5,00,000
2	Nets & Accessories			LS	3,75,000
3	Other accessories			LS	25,000
	Total Machinery Cost				9,00,000
	(all the machinery items to be specified)				
G	Miscellaneous Expenditure				
1	Insurance premium of assets				15,000
2	Cost of DPR Preparation				23,338
3	Other miscellaneous exp.				6,662
	Total Miscellaneous Expenditure				45,000

4.2. Project Variable Expenses

Details of Recurring Expenditure	
A	Details of raw material (per annum @ 100%)



Details of Recurring Expenditure						
A	Details of raw material (per annum @ 100%)					
Sl. No.	Items	Unit	Rate/Unit (in Rs)	Qty/day	Qty/annum(kg)	Total (Rs)
1	Fish Fingerlings Tilapia/ Pangasius/ Catfish/ Amur carp/ Scampi/ shrimp/ barb etc.	Nos	4		1,80,000	7,20,000
2	Formulated Feed (24-30% crude protein & 3% fat)	Kg	36		20,000	7,20,000
3	Probiotics, Carbon source test kits	Rs				80,000
	Total				2,00,000	15,20,000

Details of salary and other benefits				
Sl. No.	Type of Workers	No. of Worker	Salary Per Month/head (Rs)	Total Salary per Annum (Rs)
1	Supervisor	1	15000	3,60,000
2	Unskilled	3	10000	1,44,000
3	Skilled	1	12,000	1,80,000
	Grand Total	5	37000	6,84,000

4.3. Details of Sales

Details of sales						
Sl. No.	Type of products	Unit	Rate/Unit (Rs)	Quantity/day	Quantity/annum	Total (Rs)
1	Tilapia/ Pangasius/ Catfish/ Amur carp/ Scampi/ shrimp/ barb etc. production	Kg	130		72,000	93,60,000
	Total				72,000	93,60,000



4.4. Project Balance Sheet

Liabilities	I	II	III	IV	V	VI	VII
Opening Capital	-	1,589,944	2,724,213	3,928,797	5,446,537	6,995,053	8,360,901
Add: Introduced	988,900						
Add: Profit	1,283,044	2,302,269	2,889,584	3,852,740	4,546,516	4,949,848	5,384,149
Less: Drawing	682,000	1,168,000	1,685,000	2,335,000	2,998,000	3,584,000	4,124,000
Closing Capital	1,589,944	2,724,213	3,928,797	5,446,537	6,995,053	8,360,901	9,621,050
Term Loan from Bank	7,845,937	6,868,608	5,778,184	4,561,577	3,204,186	1,689,719	-
Current Liabilities							
Cash Credit from Bank	178,200	178,200	178,200	178,200	178,200	178,200	178,200
Sundry Creditors	60,800	79,800	89,400	105,667	117,133	123,000	129,200
Expenses Payable	112,400	121,700	129,100	138,300	146,600	154,000	161,700
Current Provisions	282,019	718,830	970,536	1,383,317	1,680,650	1,853,506	2,039,635
Total Current Liabilities	633,419	1,098,530	1,367,236	1,805,484	2,122,583	2,308,706	2,508,735
Total Liabilities	10,069,300	10,691,351	11,074,217	11,813,598	12,321,822	12,359,327	12,129,785
Assets							
Fixed Assets	9,646,000	9,646,000	9,646,000	9,646,000	9,646,000	9,646,000	9,646,000
Less Depreciation	1,027,000	1,829,100	2,643,908	3,370,190	4,017,856	4,595,667	5,111,370
Net Fixed Assets	8,619,000	7,816,900	7,002,093	6,275,810	5,628,144	5,050,333	4,534,630
Current Assets							
Sundry Debtors	280,800	368,600	412,800	487,700	540,500	567,600	596,000
Inventories	168,700	172,700	223,450	251,433	295,417	325,978	342,306
Cash and Bank Balance	56,200	73,800	82,600	97,600	108,100	113,600	119,200
Other Current Assets	944,600	2,259,351	3,353,274	4,701,055	5,749,662	6,301,815	6,537,649
Total Current Assets	1,450,300	2,874,451	4,072,124	5,537,788	6,693,679	7,308,993	7,595,155
Total Assets	10,069,300	10,691,351	11,074,217	11,813,598	12,321,822	12,359,327	12,129,785



4.5. Calculation of Depreciation

Rates of Depreciation		10%	15%	Total depreciation for the year (Rs)
Year	1	832,000.00	195,000	1,027,000
	2	748,800.00	165,750	914,550
	3	673,920.00	140,888	814,808
	4	606,528.00	119,754	726,282
	5	545,875.20	101,791	647,666
	6	491,287.68	86,523	577,810
	7	442,158.91	73,544	515,703

4.6. Projected P&L

Description	Year ending March 31st						
	I	II	III	IV	V	VI	VII
Capacity Utilisation	60	80	85	90	90	95	95
Revenue							
Sales	5,616,000	7,371,000	8,256,000	9,753,000	10,810,000	11,351,000	11,919,000
Opening Stock of Finished Goods	-	(156,000)	(204,750)	(229,333)	(270,917)	(300,278)	(315,306)
Closing Stock of Finished Goods	156,000	204,750	229,333	270,917	300,278	315,306	331,083
Total Income (A)	5,772,000	7,419,750	8,280,583	9,794,583	10,839,361	11,366,028	11,934,778
Expenditure							
Opening stock of Raw Material	-	12,700	16,700	18,700	22,100	24,500	25,700
Purchase (Net) of Material	912,000	1,197,000	1,341,000	1,585,000	1,757,000	1,845,000	1,938,000
Closing Stock of Raw material	12,700	16,700	18,700	22,100	24,500	25,700	27,000
Raw Material Consumption	899,300	1,193,000	1,339,000	1,581,600	1,754,600	1,843,800	1,936,700
Repair & Maintenance- Machinery (@5% of Cost)	481,000	505,100	530,400	557,000	584,900	614,200	645,000
Utility expense	112,320	147,500	165,200	195,100	216,200	227,100	238,700
Insurance cost	15,000	15,800	16,600	17,500	18,400	19,400	20,400
Administrative salaries and wages	684,000	718,200	754,200	792,000	831,600	873,200	916,900
Other Misc. Expenses [@1% of sales]	56,160	73,710	82,560	97,530	108,100	113,510	119,190
Total Cost	2,247,780	2,653,310	2,887,960	3,240,730	3,513,800	3,691,210	3,876,890



Description	Year ending March 31st						
	I	II	III	IV	V	VI	VII
Profit Before Depreciation, Interest and Tax	3,524,220	4,766,440	5,392,623	6,553,853	7,325,561	7,674,818	8,057,888
Depreciation	1,027,000	914,550	814,808	726,282	647,666	577,810	515,703
Profit Before Interest and Tax	2,497,220	3,851,890	4,577,816	5,827,571	6,677,895	7,097,008	7,542,185
Interest on Term Loan	916,119	814,753	701,658	575,475	434,691	277,615	102,363
Interest on Working Capital Loan	16,038	16,038	16,038	16,038	16,038	16,038	16,038
Total Interest Paid	932,157	830,791	717,696	591,513	450,729	293,653	118,401
Profit Before Tax	1,565,063	3,021,099	3,860,120	5,236,058	6,227,166	6,803,354	7,423,784
Income Tax	282,019	718,830	970,536	1,383,317	1,680,650	1,853,506	2,039,635
Profit after Tax	1,283,044	2,302,269	2,889,584	3,852,740	4,546,516	4,949,848	5,384,149

4.7. Projected Cash Flow

Period Ending:	I	II	III	IV	V	VI	VII
Cash & Bank Balance at Beginning	-	56,200	186,250	195,050	210,050	220,550	226,050
Cash Inflow during the Period	11,096,300	3,681,930	3,973,098	5,017,271	5,511,281	5,713,781	6,099,880
Cash Outflow during the Period	11,040,100	3,551,880	3,964,298	5,002,271	5,500,781	5,708,281	6,094,280
Closing Cash & Bank Balance	56,200	186,250	195,050	210,050	220,550	226,050	231,650

4.8. Projected Loan Repayment

Year	Interest	EMI	Principal
1	916,118.81	1,792,082.14	875,963.33
2	814,753.35	1,792,082.14	977,328.79
3	701,658.00	1,792,082.14	1,090,424.14
4	575,475.39	1,792,082.14	1,216,606.75
5	434,691.07	1,792,082.14	1,357,391.07
6	277,615.35	1,792,082.14	1,514,466.79
7	102,363.02	1,792,082.14	1,689,719.12
Total	3,822,674.98	12,544,574.98	8,721,900.00



4.9. Calculation of DSCR, IRR and BEP

Calculation of DSCR							
Year	I	II	III	IV	V	VI	VII
Net Sales	5,616,000	7,371,000	8,256,000	9,753,000	10,810,000	11,351,000	11,919,000
Net Profit	1,283,044	2,302,269	2,889,584	3,852,740	4,546,516	4,949,848	5,384,149
Interest Paid	932,157	830,791	717,696	591,513	450,729	293,653	118,401
Cash Accruals (a)	2,215,201	3,133,060	3,607,280	4,444,254	4,997,245	5,243,501	5,502,550
Interest Paid	878,044	783,879	677,772	558,208	423,480	271,665	100,597
Principal	875,963	977,329	1,090,424	1,216,607	1,357,391	1,514,467	1,689,719
Interest	932,157	830,791	717,696	591,513	450,729	293,653	118,401
Total (b)	1,808,120	1,808,120	1,808,120	1,808,120	1,808,120	1,808,120	1,808,120
DSCR	1.23	1.73	2.00	2.46	2.76	2.90	3.04
Average DSCR	2.30						

Calculation of Break-Even Point (BEP)							
Sales	5,772,000	7,419,750	8,280,583	9,794,583	10,839,361	11,366,028	11,934,778
Variable Cost	955,460	1,266,710	1,421,560	1,679,130	1,862,700	1,957,310	2,055,890
Contribution	4,816,540	6,153,040	6,859,023	8,115,453	8,976,661	9,408,718	9,878,888
Fixed Cost	3,251,477	3,131,941	2,998,903	2,879,396	2,749,495	2,605,364	2,455,104
BEP Sales	3,896,474	3,776,706	3,620,438	3,475,158	3,320,029	3,147,361	2,966,034
Average BEP sales	3,457,457						

Calculation of Internal Rate of Return (IRR)				
Sl. No.	Year	PAT	Depreciation	Cash Accrual
	Cash outflow at beginning			
				-9,889,000
1	31/03/2023	1,283,044	1,027,000	2,310,044
2	31/03/2024	2,302,269	914,550	3,216,819
3	31/03/2025	2,889,584	814,808	3,704,391
4	31/03/2026	3,852,740	726,282	4,579,023
5	31/03/2027	4,546,516	647,666	5,194,182
6	31/03/2028	4,949,848	577,810	5,527,658
7	31/03/2029	5,384,149	515,703	5,899,852
IRR		32.05%		
Payback Period	3 Years 2 Months			



4.10. Summary of Project Cost

SI. No.	Name of Assets	Amount (Rs)
1	Land Development	26,000
2	Civil Construction	80,20,000
3	Irrigation/Water Supply	3,00,000
4	Electrification	4,00,000
5	Plant & Machinery	9,00,000
6	Livestock	-
7	Insurance	15,000
8	DPR Cost	23,338
9	Other Miscellaneous Exp.	6,662
	Total Fixed Cost	96,91,000
	Recurring	1,98,000
	Cost of Project	98,89,000



Detailed Project Report ***On*** ***Bio-Floc Fish Farming (10 Tanks)***

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)	Bio-Floc Fish Farming
2	Sector (as per the Illustrative List of Enterprises)	Fishery
3	Project Capacity ¹	10 Tanks
4	Key components of the project	Production of Fish
5	Project Address (Village/Ward, Gram Panchayat/Municipality, Block, District)	
6	Products/Output from the project	Fish
7	Total Project Cost	Rs. 22,08,000
8	Fixed Capital Cost	Rs. 21,57,000
9	Working/Recurring capital	Rs. 51,000
10	Bank Finance/ Self Finance	Bank Finance
11	Bank Loan Amount	Rs. 15,35,400
12	Promoter Contribution	Rs. 6,72,600
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 2. Debt Service Coverage Ratio (DSCR) 3. Internal Rate of Return 4. Break Even Year	Rs. 7,13,819
		2.59
		27.86%
		3 Year 5 Month
17	Estimated employment to be generated (nos.)	2

Note:

1. Customized DPR is to be prepared as per the information given by the beneficiary.
2. The CIS will be calculated as per the cost norm of MKUY guideline.
3. All the prices quoted here are indicative in nature.
4. The particulars under each component of the Capital Investment may be changed as per the requirement of the project.

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, Society/Trust: Darpan Unique Id



2.2. Project Consultant Details

DPR prepared by: APICOL, Baramunda, Bhubaneswar





2.3. Concept and Scope of the Project

“Bioflocs” are a consortium of particulate matter formed predominantly by a biota of aerobic and heterotrophic bacteria, protozoa, microalgae (diatoms), metazoans, detritus, faeces, remnants of feed and remains of dead organisms

Principle on which Bio-floc works

Bio-floc system is a wastewater treatment, which has gained vital importance as an approach in aquaculture.

- It combines the removal of nitrogenous metabolites from the water by addition of carbon source externally for the production of microbial biomass under strong aeration, which then can be used by the cultured fish species as an additional food source.
- The principle of the technique is to maintain the higher C-N ratio by adding carbohydrate source and the water quality is improved through the production of high-quality single cell microbial protein.
- In such condition, heterotrophic microbial growth occurs which assimilates the nitrogenous waste that can be exploited by the cultured species as a feed and also works as bioreactor controlling of water quality.
- Immobilization of toxic nitrogen species occurs more rapidly in biofloc because of the growth rate and microbial production per unit substrate of heterotrophs are ten-times greater than that of the autotrophic nitrifying bacteria.
- This technology is based on the principle of flocculation within the system.

Major requirements of BFT

- High stocking density
- High aeration (To keep DO level >6ppm)
- Sludge/waste disposal system
- Poly-lined ponds /poly-tarpaulin or cemented tanks
- Indoor/Outdoor
- Suitable candidate species (Fin/Shellfish & FW/BW/MW)
- Zero water exchange
- Zero tolerance to antibiotics

Basic Requisites for BFT

- Biofloc tank installation
- Air pump and supply
- Feed, probiotics, molasses & chemicals
- Water quality test kit & equipment

Nutritional value of Bio-floc



- Dry weight protein ranges from 25–50%
- Fat ranges from 0.5–15%
- Good source of vitamins and minerals, particularly phosphorous
- It has an effect similar to gut probiotics
- The dried bio-floc meal is proposed as an ingredient to replace the fishmeal or soybean meal in the feed.

Advantage of Bio-floc technology

- It is an eco-friendly fish farming system and it reduces environmental impact.
- Judicial use of land and water
- Limited or zero water exchange system thus reducing the pollution
- Higher productivity (it enhances survival rate, growth performance and feed conversion in the culture systems of fish).
- It provides higher bio-security thus minimizing the risk of disease outbreaks.
- It reduces utilization of protein rich feed and cost of standard feed.
- It reduces the pressure on capture fisheries i.e., use of cheaper food fish and trash fish for fish feed formulation.

Fish Species Suitable for Bio-floc Technology

Bio-floc system works best with species that are able to derive some nutritional benefits from the direct consumption of floc. Bio-floc system is most suitable for species that can tolerate high solids concentration in water and are generally tolerant of poor water quality. Some of the species that are suitable for bio-floc technology are:

- Air breathing fish like Singhi (*Heteropneustes fossilis*), Magur (*Clarias batrachus*), Pabda (*Ompok pabda*), Anabas/Koi (*Anabas testudineus*), Pangasius (*Pangasianodon hypophthalmus*).
- Non-air-breathing fishes like Common Carp (*Cyprinus carpio*), Rohu (*Labeo rohita*), Tilapia (*Oreochromis niloticus*), Milkfish (*Chanos chanos*).
- Shellfishes like Vannamei (*Litopenaeus vannamei*) and Tiger Shrimp (*Penaeus monodon*) - in brackish water systems.

Bio-floc Fish Farm Infrastructure

Under the scheme promoted by the Department, the technical standards of circular tanks constructed from cement concrete or PVC/HDPE polyliners with metallic/PVC frames is a minimum of 4-meter diameter, 1.3-meter depth and with central drain. The tanks should be housed in a shed constructed from shade net. Good sunlight is essential for bio-floc 04 Bio-floc Technology in Fish Farming culture. Transparent polyliners can also be used by replacing shade nets to increase the sunlight and to protect the tanks from rainwater. Freshwater can be sourced from borewell or municipal tap water line. In case of municipal tap water, care should be taken to remove all the chlorine content from source water. Each tank should be provided with ample aeration line with air blower. Air blowers should have to power backup from inverter with battery or mini genset for continuous aeration.



Example of GIFT farming in Bio-floc system: Seed stocking density, feed management and water quality management

S. No.	Component	Details
1	Bio-floc Tank size (1.20 m water depth)	4 metre diameter and 1.5-meter height
2	Water holding capacity of each tank	15,000 Litres capacity (but maintain 1.2 m water depth with a volume of 12,000 Litres)
3	Water quality parameters	Dissolved Oxygen - 5mg/L; Temperature- 26-34°C, pH-7.5 to 8, TDS-600ppm, Floc density-25-40mg/l, Ammonia-0.5 ppm, Nitrite-0.3 ppm, Nitrate-150 ppm, Alkalinity-120-280 ppm
4	Stocking density depending on species)	100 nos/m ³ (1000 nos. of fingerlings per tank)
5	Common Species cultured	GIFT Tilapia (<i>Oreochromis niloticus</i>) - mono-sex fingerlings bought from licensed hatcheries should be stocked for fast and uniform growth
6	Survival (%)	80
7	Type of feed to be used Fat 3%)	Floating pellet feed (Crude Protein 22-24%;
8	% of feed per day	2-3% of Average Body weight per day
9	Feeding frequency	4 times early stage, later 2 times per day
10	FCR	1:1.25
11	Duration of culture	4 months
12	Size/ weight of the fish at harvest (gram)	500 g average weight
13	No. of crops per year	3

How to Prepare the Inoculum:

METHOD I:

For 15000 Litres of fresh water 150 Litres of inoculum is required for the floc development

Step 1

Take clean tub/can with 150 Litres of water and continue vigorous aeration

Step 2

Add 3 Kg of pond soil

+

1.5 gm of Ammonium sulphate /Urea

+



30 gm of carbon source (Jaggery /Wheat flour /Tapioca flour)

Step 3

Mix it well with water in tub and provide adequate aeration

Step 4

The inoculum will be ready after 24-48 hrs and it can be transferred to main tank

- Daily addition of carbon source is required for the development of floc. For every 1 kg of feed given (with 25 % of crude protein), 600 gm of carbon source is to be added to the system to maintain C: N of 10:1.
- Once the floc volume reaches 15-20ml further addition of carbon source is not required

METHOD II:

Step 1

Take clean tub/can with 130 Litres of water and continue vigorous aeration

Step 2

Add 20 Litres of pond water/RAS water (before filtration)

+

30 gm of carbon source (Jaggery /Wheat flour /Tapioca flour)

+

10 gm of probiotic (with Bacillus Sp., Aspergillus Sp. etc with a total concentration of 10×10^9 CFU/gm)



Follow the remaining steps as mentioned in **method 1**



***NB: Well developed inoculum will be turbid with foam on the water surface (Ideal Volume of Floc in Imhoff cone for shrimp is 10-15 ml/L**

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)	15	Days
4	Collection from Debtors	15	Days
5	Payable to Creditors	20	Days
6	Drawing by Promoter	20	%
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	Days
11	Raw Material in Stock (on sales)	7	Days
12	Finished Goods in stock (on sales)	10	Days
13	Promoter's Contribution (Term Loan)	30	%
14	Promoter's Contribution (Working Capital)	50	%
15	Working Capital Requirement	1	Months
16	Working Capital Utilisation	100	%
17	No. of Working days	360	Days
18	No. of Tanks	10	Nos.
19	No. of fingerlings per tank (Stocking)	1200	Nos.
20	Production per tank per crop of Tilapia/ Pangasius/ Catfish/ Amur carp/ Scampi/ shrimp/ barb etc.	600	kg
21	No. of crop per year	3	Nos.
22	Feed per Tank per Year	400	Kg
23	Cost of Feed per kg	36	Rs
24	Cost of one Fingerling	4	Rs
25	Cost of probiotic per tank per annum	1600	Rs
26	Office Space	50	Sq. ft
27	Store Space	50	Sq. ft
28	Cost of Office construction per sq. ft	850	Rs
29	Cost of Store construction per sq. ft	400	Rs
30	Space required for one Tank	345	Sq. ft
31	Cost of construction of one Tank	45000	Rs
32	Cost of construction of shed with flooring per sq. ft.	320	Rs
33	Survival Rate	80	%
34	Size/ weight of Fish at Harvest	0.5	Kg



3. Financial Details

4.1. Project Fixed Capital

Details of Fixed Assets					
Sl. No.	Particulars	Unit	Qty.	Cost per unit (Rs)	Total (Rs)
A	Land				
1	Land Development	Sq. ft	5000	0.70	3,500
2	Fencing (Barbed wire)	ft	200	60.00	12,000
	Sub Total				15,500
B	Civil Construction				
1	Construction of Shed (Protected Structure)/ Shade Net including installation charges	sq. ft	3450	320.00	11,04,000
2	Setup of Bio-Floc Tanks: Brick Masonary with frames, solid base, drain pipe fish net covering (4m dia x 1.5 m depth tank with 1.2 m water depth =15,000 lts Capacity each Tank) with 150 cum capacity	Nos.	10	45,000.00	4,50,000
3	Store	sq. ft	50	400	20,000
4	Office	sq. ft	50	850.00	42,500
	Sub Total				16,16,500
C	Water Supply				
1	Water Supply with borewell, pump (3 HP) and PVC pipe fittings for air and water flow	Nos	1	LS	2,00,000
D	Electrification				
1	Electrical Installation & DG Set/ Power Generator/ Any other back up system				1,00,000
E	Plant & Machinery				
Sl. No.	Particulars	Specification	Qty	Unit Price (Rs)	Total (Rs)
1	Ring Blower (2 nos of 3 HP)/ High pressure air pump and other accessories				1,00,000
2	Nets & Accessories (Air Oxi tube/ Air Oxi Spider etc.)				75,000
3	Electronic weighing balance				1,000
4	Other accessories				24,000
	Total Machinery Cost				2,00,000
	(all the machinery items to be specified)				
G	Miscellaneous Expenditure				
1	Insurance premium of assets				15,000
2	Cost of DPR Preparation				5,211
3	Other miscellaneous exp.				4,789



Details of Fixed Assets					
Sl. No.	Particulars	Unit	Qty.	Cost per unit (Rs)	Total (Rs)
	Total Miscellaneous Expenditure				25,000

4.2. Project Variable Expenses

Details of Recurring Expenditure						
A	Details of raw material (per annum @ 100%)					
Sl. No.	Items	Unit	Rate/Unit (in Rs)	Qty/day	Qty/annum(kg)	Total (Rs)
1	Fish Fingerlings Tilapia/ Pangasius/ Catfish/ Amur carp/ Scampi/ shrimp/ barb etc.	Nos	4		36,000	1,44,000
2	Formulated Feed (24-30% crude protein & 3% fat)	Kg	36		4,000	1,44,000
3	Probiotics, Carbon source test kits	Rs				16,000
	Total				40,000	3,04,000

Details of salary and other benefits				
Sl. No.	Type of Workers	No. of Worker	Salary Per Month/head (Rs)	Total Salary per Annum (Rs)
1	Unskilled	1	10,000	1,20,000
2	Skilled	1	12,000	1,44,000
	Grand Total	2	22,000	2,64,000

4.3. Details of Sales

Details of sales						
Sl. No.	Type of products	Unit	Rate/Unit (Rs)	Quantity/day	Quantity/annum	Total (Rs)
1	Tilapia/ Pangasius/ Catfish/ Amur carp/ Scampi/ shrimp/ barb etc. production	Rs	130		14,400	18,72,000
	Total				14,400	18,72,000



4.4. Project Balance Sheet

Liabilities	I	II	III	IV	V	VI	VII
Opening Capital	-	673,139	891,367	1,173,655	1,569,544	2,000,935	2,403,835
Add: Introduced	672,600						
Add: Profit	169,539	442,228	576,288	788,889	932,392	1,004,900	1,082,501
Less: Drawing	169,000	224,000	294,000	393,000	501,000	602,000	698,000
Closing Capital	673,139	891,367	1,173,655	1,569,544	2,000,935	2,403,835	2,788,336
Term Loan from Bank	1,358,257	1,189,066	1,000,296	789,682	554,696	292,517	-
Current Liabilities							
Cash Credit from Bank	25,500	25,500	25,500	25,500	25,500	25,500	25,500
Sundry Creditors	12,160	16,000	17,933	21,200	23,533	24,733	26,000
Expenses Payable	34,900	37,400	39,600	42,100	44,500	46,700	49,100
Current Provisions	-	10,117	34,697	87,847	131,739	162,814	196,072
Total Current Liabilities	72,560	89,017	117,730	176,647	225,273	259,747	296,672
Total Liabilities	2,103,956	2,169,450	2,291,681	2,535,873	2,780,904	2,956,100	3,085,008
Assets							
Fixed Assets	2,132,000	2,132,000	2,132,000	2,132,000	2,132,000	2,132,000	2,132,000
Less Depreciation	226,650	403,470	583,119	743,177	885,848	1,013,078	1,126,586
Net Fixed Assets	1,905,350	1,728,530	1,548,881	1,388,823	1,246,152	1,118,922	1,005,414
Current Assets							
Sundry Debtors	56,200	73,800	82,600	97,600	108,200	113,700	119,400
Inventories	34,800	35,900	46,272	52,089	61,122	67,411	70,739
Cash and Bank Balance	11,300	14,800	16,600	19,600	21,700	22,800	23,900
Other Current Assets	96,306	316,420	597,328	977,761	1,343,730	1,633,266	1,865,555
Total Current Assets	198,606	440,920	742,800	1,147,050	1,534,752	1,837,178	2,079,594
Total Assets	2,103,956	2,169,450	2,291,681	2,535,873	2,780,904	2,956,100	3,085,008



4.5. Calculation of Depreciation

Rates of Depreciation		10%	15%	Total depreciation for the year (Rs)
Year	1	181,650.00	45,000	226,650
	2	163,485.00	38,250	201,735
	3	147,136.50	32,513	179,649
	4	132,422.85	27,636	160,058
	5	119,180.57	23,490	142,671
	6	107,262.51	19,967	127,229
	7	96,536.26	16,972	113,508

4.6. Projected P&L

Description	Year ending March 31st						
	I	II	III	IV	V	VI	VII
Capacity Utilisation	60	75	80	90	95	95	95
Revenue							
Sales	1,123,200	1,475,000	1,652,000	1,952,000	2,164,000	2,273,000	2,387,000
Opening Stock of Finished Goods	-	(31,200)	(40,972)	(45,889)	(54,222)	(60,111)	(63,139)
Closing Stock of Finished Goods	31,200	40,972	45,889	54,222	60,111	63,139	66,306
Total Income (A)	1,154,400	1,484,772	1,656,917	1,960,333	2,169,889	2,276,028	2,390,167
Expenditure							
Opening stock of Raw Material	-	3,600	4,700	5,300	6,200	6,900	7,300
Purchase (Net) of Material	182,400	240,000	269,000	318,000	353,000	371,000	390,000
Closing Stock of Raw material	3,600	4,700	5,300	6,200	6,900	7,300	7,600
Raw Material Consumption	178,800	238,900	268,400	317,100	352,300	370,600	389,700
Repair & Maintenance- Machinery (@5% of Cost)	105,825	111,200	116,800	122,700	128,900	135,400	142,200
Utility expense	22,464	29,500	33,100	39,100	43,300	45,500	47,900
Insurance cost	15,000	15,800	16,600	17,500	18,400	19,400	20,400
Administrative salaries and wages	264,000	277,200	291,100	305,700	321,000	337,100	354,000
Other Misc Expenses [@1% of sales]	11,232	14,750	16,520	19,520	21,640	22,730	23,870
Total Cost	597,321	687,350	742,520	821,620	885,540	930,730	978,070



Description	Year ending March 31st						
	I	II	III	IV	V	VI	VII
Profit Before Depreciation, Interest and Tax	557,079	797,422	914,397	1,138,713	1,284,349	1,345,298	1,412,097
Depreciation	226,650	201,735	179,649	160,058	142,671	127,229	113,508
Profit Before Interest and Tax	330,429	595,687	734,748	978,655	1,141,678	1,218,069	1,298,589
Interest on Term Loan	158,595	141,047	121,468	99,624	75,252	48,060	17,721
Interest on Working Capital Loan	2,295	2,295	2,295	2,295	2,295	2,295	2,295
Total Interest Paid	160,890	143,342	123,763	101,919	77,547	50,355	20,016
Profit Before Tax	169,539	452,345	610,984	876,736	1,064,131	1,167,714	1,278,573
Income Tax	-	10,117	34,697	87,847	131,739	162,814	196,072
Profit after Tax	169,539	442,228	576,288	788,889	932,392	1,004,900	1,082,501

4.7. Projected Cash Flow

Period Ending:	I	II	III	IV	V	VI	VII
Cash & Bank Balance at Beginning	-	11,300	39,715	41,515	44,515	46,615	47,715
Cash Inflow during the Period	2,330,606	660,420	784,650	1,007,864	1,123,688	1,166,604	1,232,933
Cash Outflow during the Period	2,319,306	632,005	782,850	1,004,864	1,121,588	1,165,504	1,231,833
Closing Cash & Bank Balance	11,300	39,715	41,515	44,515	46,615	47,715	48,815

4.8. Projected Loan Repayment

Year	Interest	EMI	Principal
1	158,594.78	310,238.00	151,643.22
2	141,046.80	310,238.00	169,191.20
3	121,468.19	310,238.00	188,769.81
4	99,623.97	310,238.00	210,614.03
5	75,251.96	310,238.00	234,986.04
6	48,059.65	310,238.00	262,178.36
7	17,720.67	310,238.00	292,517.33
Total	661,766.01	2,171,666.01	1,509,900.00



4.9. Calculation of DSCR, IRR and BEP

Calculation of DSCR							
Year	I	II	III	IV	V	VI	VII
Net Sales	1,123,200	1,475,000	1,652,000	1,952,000	2,164,000	2,273,000	2,387,000
Net Profit	169,539	442,228	576,288	788,889	932,392	1,004,900	1,082,501
Interest Paid	160,890	143,342	123,763	101,919	77,547	50,355	20,016
Cash Accruals (a)	330,429	585,570	700,051	890,808	1,009,939	1,055,254	1,102,517
Interest Paid	878,044	783,879	677,772	558,208	423,480	271,665	100,597
Principal	151,643	169,191	188,770	210,614	234,986	262,178	292,517
Interest	160,890	143,342	123,763	101,919	77,547	50,355	20,016
Total (b)	312,533	312,533	312,533	312,533	312,533	312,533	312,533
DSCR	1.06	1.87	2.24	2.85	3.23	3.38	3.53
Average DSCR	2.59						

Calculation of Break-Even Point (BEP)							
Sales	1,154,400	1,484,772	1,656,917	1,960,333	2,169,889	2,276,028	2,390,167
Variable Cost	190,032	253,650	284,920	336,620	373,940	393,330	413,570
Contribution	964,368	1,231,122	1,371,997	1,623,713	1,795,949	1,882,698	1,976,597
Fixed Cost	794,829	778,777	761,012	746,977	731,818	714,984	698,024
BEP Sales	951,452	939,229	919,050	901,837	884,192	864,357	844,074
Average BEP sales	900,599						

Calculation of Internal Rate of Return (IRR)				
Sl. No.	Year	PAT	Depreciation	Cash Accrual
	Cash outflow at beginning			-2,165,000
1	31/03/2023	169,539	226,650	396,189
2	31/03/2024	442,228	201,735	643,963
3	31/03/2025	576,288	179,649	755,937
4	31/03/2026	788,889	160,058	948,947
5	31/03/2027	932,392	142,671	1,075,063
6	31/03/2028	1,004,900	127,229	1,132,129
7	31/03/2029	1,082,501	113,508	1,196,009
IRR		27.86%		



Payback Period	3 Years 5 Months
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4.10. Summary of Project Cost

Sl No	Name of Assets	Amount
1	Land Development	15,500
2	Civil Construction	16,16,500
3	Irrigation/Water Supply	2,00,000
4	Electrification	1,00,000
5	Plant & Machinery	2,00,000
6	Livestock	-
7	Insurance	15,000
8	DPR Cost	5,211
9	Other Miscellaneous Exp.	4,789
	Total Fixed Cost	21,57,000
	Recurring	51,000
	Cost of Project	22,08,000



Detailed Project Report ***on*** ***Insulated Van***

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)	Insulated Van
2	Sector (as per the Illustrative List of Enterprises)	Fisheries
3	Project Capacity ¹	10 MT Insulated Truck
4	Key components of the project	
5	Project Address (Village/Ward, Gram Pranchayat/Municipality, Block, District)	
6	Products/Output from the project	Perishable Product Transportation
7	Total Project Cost	Rs. 20,60,000
8	Fixed Capital Cost	Rs. 20,00,000
9	Working/Recurring capital	60,000
10	Bank Finance/ Self Finance	Bank Loan
11	Bank Loan Amount	Rs. 18,36,000
12	Promoter Contribution (min 10% in case of bank loan)	Rs. 2,04,000
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 2. Debt Service Coverage Ratio (DSCR) 3. Internal Rate of Return 4. Break Even Year	Rs. 4,81,741
		1.60
		23.27%
		3 Years and 7 Months
17	Estimated employment to be generated (nos.)	2

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, Society/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

Cold chain transportation plays an integral role in ensuring the smooth movement of various products. The cold chain transportation in India is mainly carried by roadways as there is laxity in the development of rail mode of cold chain transportation. Basically, there are modes of cold chain transportation by roadways i.e., refrigerated vehicle or insulated vehicle. Refrigerated vehicles are used for highly perishable and temperature sensitive items such as milk, ice cream, butter, cheese, curd, frozen cream, frozen RTE/RTC, fruits and vegetables etc., when transporting for long distance. However, insulated vehicles are used for transporting perishable items within city or shorter distance,

Market Demand

In India, the expanding cold chain logistics sector coupled with the growing number of food retail services is primarily driving the demand for Insulated trucks. In line with this, the rising consumer inclination towards frozen, chilled, and processed food items due to hectic work schedules and sedentary lifestyles is also propelling the market growth. Additionally, the wide availability of frozen meat, ready-to-cook snacks, seasonal fruits and vegetables, etc., across diverse brick-and-mortar and online distribution channels is further augmenting the deployment of insulated trucks for supply-based applications. Several food retailers are focusing on the adoption of advanced-cold chain transportation facilities for efficient management of their supply chains. Apart from this, a significant growth in the healthcare sector along with the rising demand for safe transportation of temperature-sensitive products, such as vaccines, biopharmaceuticals, clinical trial materials, etc., is also catalyzing the market. Moreover, the increasing investments in the development of advanced medical facilities and research laboratories are further bolstering the need for refrigerated trucks to preserve heat-labile biological materials during transportation activities. In the coming years, the emergence of hybrid insulated trucks with phase change material (PCM) technology offering improved energy efficiency and enhanced operational features will continue to drive the market growth in India.

Out of the 105 million ton of perishable goods transported across India each year, only 4 million ton is transported via reefers route; and the perishable goods loss amounts to Rs. 1 lakh crores! Though more than 30,000 reefers ply all across India, most are run by unorganised and small service providers. While the percentage of fruits and vegetables movement thro' cold chain in the US is 85%, Thailand 40% in India it's negligible – throwing up clearly the enormous business opportunities for the domain players.



3. Techno-commercial Assumptions

Sl. No.	Parameter	Value	Unit
1	Increase in Rate of Transportation	7	%
2	Increase in Diesel Price	5	%
3	Collection from Debtors (First Year)	15	Days
4	Collection from Debtors	15	Days
5	Payable to Creditors	15	Days
6	Drawing By Promoter	50	%
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 (Diesel)	5	Days
12	Finished Goods in stock (on sales)	0	Days
13	Promoter's Contribution (Term Loan)	10	%
14	Promoter's Contribution (Working Capital)	10	%
15	Working Capital Requirement	10	Days
17	Working Capital Utilisation	100	%
18	Distance travel during the day (to and fro)	400	Km
19	Average Mileage for First Year	10	km/lit.
20	Average Mileage for 2nd Year to 4th Year	8	km/lit.
21	Average Mileage for 5th Year to 7th Year	7	km/lit.
22	Rate of Diesel	97	Rs/lit.
23	Repair and Maintenance Cost for First Year	1	%
24	Repair and Maintenance Cost for 2nd to 4th Year	5	%
25	Repair and Maintenance Cost for 5th to 7th Year	7	%
26	No. of Working Days	300	Days

4. Financial Details

4.1. Project Fixed Capital

Details of Fixed Assets					
Sl. No.	Particulars	Unit	Qty.	Cost per unit (Rs)	Total (Rs)
A	Land				
1	Land Development	NA	NA	NA	0
2	Fencing (Barbed wire/Green Fencing)	NA	NA	NA	0
	Sub Total				
B	Civil Construction				
1	Garage Cum Office	sq. ft	200	300.00	60,000
	Sub Total				60,000
C	Water Supply				
1	NA	NA	NA	NA	0
D	Electrification				
1	NA	NA	NA	NA	0



Details of Fixed Assets					
Sl. No.	Particulars	Unit	Qty.	Cost per unit (Rs)	Total (Rs)
E	Plant & Machinery				
Sl. No.	Particulars	Specification	Qty.	Unit Price (Rs)	Total (Rs)
1	Vehicle	Tata LPT 909 HEX2 BS-IV	1	1400000	14,00,000
2	Insulated Container	Puff insulated, PPGI	1	50000	5,00,000
	Total				19,00,000
F	Miscellaneous Expenditure				
1	Insurance premium of assets				30,000
2	DPR Cost				4,838
3	Other miscellaneous exp				5,162
	Total Miscellaneous Expenditure				40,000

4.2. Project Variable Expenses

Details of Recurring Expenditure						
A	Details of raw material (per annum @ 100%)					
Sl. No.	Items	Unit	Rate per lit. (Rs)	Qty. per day (lit)	Qty. per annum (lit.)	Total (Rs)
1	Diesel		97.00	50	15,000	14,55,000
	Total					14,55,000

Details of salary and other benefits				
Sl. No.	Type of Workers	No. of Worker	Salary Per Month/head (Rs)	Total Salary per Annum (Rs)
1	Driver	1	18,000	2,16,000
2	Helper	1	8,000	96,000
	Grand Total	2	26,000	3,12,000

4.3. Details of Sales

Details of sales						
Sl. No.	Type of products	Unit	Rate per km (Rs)	Dist. per day (km)	Dist. per annum (km)	Total (Rs)
1	Transportation Charges	Km	22	400	1,20,000	26,40,000
	Total					26,40,000



4.4. Project Balance Sheet

Liabilities	Y1	Y2	Y3	Y4	Y5	Y6	Y7
Opening Capital	-	3,12,954	3,02,318	3,51,987	4,30,307	4,90,800	5,69,618
Add: Introduced	2,06,000						
Add: Profit	2,13,954	2,92,364	4,01,669	5,10,320	5,52,493	6,49,818	7,51,571
Less: Drawing	1,07,000	3,03,000	3,52,000	4,32,000	4,92,000	5,71,000	6,61,000
Closing Capital	3,12,954	3,02,318	3,51,987	4,30,307	4,90,800	5,69,618	6,60,189
Term Loan from Bank	16,19,221	14,17,523	11,92,485	9,41,405	6,61,270	3,48,719	-
Current Liabilities							
Cash Credit from Bank	54,000	54,000	54,000	54,000	54,000	54,000	54,000
Sundry Creditors	65,475	77,850	83,300	89,150	95,400	1,02,100	1,09,250
Expenses Payable	32,500	46,500	49,100	51,900	60,700	64,200	68,000
Current Provisions	-	2,230	7,983	18,205	28,748	53,080	78,518
Total Current Liabilities	1,51,975	1,80,580	1,94,383	2,13,255	2,38,848	2,73,380	3,09,768
Total Liabilities	20,84,150	19,00,421	17,38,854	15,84,967	13,90,919	11,91,717	9,69,957
Assets							
Fixed Assets	20,00,000	20,00,000	20,00,000	20,00,000	20,00,000	20,00,000	20,00,000
Less Depreciation	2,91,000	5,38,650	7,49,423	9,28,822	10,81,531	12,11,529	13,22,206
Net Fixed Assets	17,09,000	14,61,350	12,50,578	10,71,178	9,18,469	7,88,471	6,77,794
Current Assets							
Sundry Debtors	1,18,800	1,41,300	1,51,200	1,61,800	1,73,100	1,85,300	1,98,300
Inventories	21,900	26,000	27,800	29,800	31,800	34,100	36,500
Cash and Bank Balance	23,800	28,300	30,300	32,400	34,700	37,100	39,700
Other Current Assets	2,10,650	2,43,471	2,78,976	2,89,789	2,32,850	1,46,747	17,662
Total Current Assets	3,75,150	4,39,071	4,88,276	5,13,789	4,72,450	4,03,247	2,92,162
Total Assets	20,84,150	19,00,421	17,38,854	15,84,967	13,90,919	11,91,717	9,69,957



4.5. Calculation of Depreciation

Rates of Depreciation		10%	15%	Total depreciation for the year (Rs)
Year	1	6,000.00	2,85,000	2,91,000
	2	5,400.00	2,42,250	2,47,650
	3	4,860.00	2,05,913	2,10,773
	4	4,374.00	1,75,026	1,79,400
	5	3,936.60	1,48,772	1,52,708
	6	3,542.94	1,26,456	1,29,999
	7	3,188.65	1,07,488	1,10,676

4.6. Projected P&L

Description	Year ending March 31st						
	Y1	Y2	Y3	Y4	Y5	Y6	Y7
Capacity Utilisation	90	100	100	100	100	100	100
Revenue							
Sales	90	100	100	100	100	100	100
Opening Stock of Finished Goods							
Closing Stock of Finished Goods	23,76,000	28,25,000	30,23,000	32,35,000	34,62,000	37,05,000	39,65,000
Total Income (A)	-	-	-	-	-	-	-
Expenditure							
Opening stock of Raw Material	23,76,000	28,25,000	30,23,000	32,35,000	34,62,000	37,05,000	39,65,000
Purchase (Net) of Material							
Closing Stock of Raw material	-	21,900	26,000	27,800	29,800	31,800	34,100
Raw Material Consumption	13,09,500	15,57,000	16,66,000	17,83,000	19,08,000	20,42,000	21,85,000
Repair & Maintenance)	21,900	26,000	27,800	29,800	31,800	34,100	36,500
Insurance cost	12,87,600	15,52,900	16,64,200	17,81,000	19,06,000	20,39,700	21,82,600
Administrative salaries and wages	23,760	1,41,250.00	1,51,150.00	1,61,750.00	2,42,340.00	2,59,350.00	2,77,550.00
Other Misc Expenses [@1% of sales]	30,000	31,500	33,100	34,800	36,600	38,500	40,500
Total Cost	3,12,000	3,27,600	3,44,000	3,61,200	3,79,300	3,98,300	4,18,300
Profit Before Depreciation, Interest and Tax	23,760	56,500	60,460	64,700	69,240	74,100	79,300
Depreciation	16,77,120	21,09,750	22,52,910	24,03,450	26,33,480	28,09,950	29,98,250



Description	Year ending March 31st						
	Y1	Y2	Y3	Y4	Y5	Y6	Y7
Profit Before Interest and Tax	6,98,880	7,15,250	7,70,090	8,31,550	8,28,520	8,95,050	9,66,750
Interest on Term Loan	2,91,000	2,47,650	2,10,773	1,79,400	1,52,708	1,29,999	1,10,676
Interest on Working Capital Loan	4,07,880	4,67,600	5,59,318	6,52,150	6,75,812	7,65,051	8,56,074
Total Interest Paid	1,89,066	1,68,146	1,44,806	1,18,765	89,710	57,293	21,125
Profit Before Tax	4,860	4,860	4,860	4,860	4,860	4,860	4,860
Income Tax	1,93,926	1,73,006	1,49,666	1,23,625	94,570	62,153	25,985
Profit after Tax	2,13,954	2,94,594	4,09,651	5,28,525	5,81,241	7,02,898	8,30,088

4.7. Projected Cash Flow

Period Ending:	Y1	Y2	Y3	Y4	Y5	Y6	Y7
Cash & Bank Balance at Beginning	-	23,800	28,300	30,300	32,400	34,700	37,100
Cash Inflow during the Period	23,75,150	5,68,619	6,26,244	7,08,593	7,87,734	9,00,451	10,27,719
Cash Outflow during the Period	23,51,350	5,64,119	6,24,244	7,06,493	7,85,434	8,98,051	10,25,119
Closing Cash & Bank Balance	23,800	28,300	30,300	32,400	34,700	37,100	39,700

4.8. Projected Loan Repayment

Year	Interest	EMI	Principal
1	1,89,065.90	3,69,844.63	1,80,778.73
2	1,68,146.39	3,69,844.63	2,01,698.23
3	1,44,806.11	3,69,844.63	2,25,038.52
4	1,18,764.91	3,69,844.63	2,51,079.71
5	89,710.26	3,69,844.63	2,80,134.37
6	57,293.44	3,69,844.63	3,12,551.19
7	21,125.38	3,69,844.63	3,48,719.25
Total	7,88,912.39	25,88,912.39	18,00,000.00



4.9. Calculation of DSCR, IRR and BEP

Calculation of DSCR							
Year	Y1	Y2	y3	Y4	Y5	Y6	Y7
Net Sales	23,76,000	28,25,000	30,23,000	32,35,000	34,62,000	37,05,000	39,65,000
Net Profit	2,13,954	2,92,364	4,01,669	5,10,320	5,52,493	6,49,818	7,51,571
Interest Paid	1,93,926	1,73,006	1,49,666	1,23,625	94,570	62,153	25,985
Cash Accruals (a)	4,07,880	4,65,370	5,51,335	6,33,945	6,47,063	7,11,972	7,77,556
Principal	1,80,779	2,01,698	2,25,039	2,51,080	2,80,134	3,12,551	3,48,719
Interest	1,93,926	1,73,006	1,49,666	1,23,625	94,570	62,153	25,985
Total (b)	3,74,705	3,74,705	3,74,705	3,74,705	3,74,705	3,74,705	3,74,705
DSCR	1.09	1.24	1.47	1.69	1.73	1.90	2.08
Average DSCR	1.60						

Calculation of Break-Even Point (BEP)							
Sales	23,76,000	28,25,000	30,23,000	32,35,000	34,62,000	37,05,000	39,65,000
Variable Cost	13,11,360	16,09,400	17,24,660	18,45,700	19,75,240	21,13,800	22,61,900
Contribution	10,64,640	12,15,600	12,98,340	13,89,300	14,86,760	15,91,200	17,03,100
Fixed Cost	8,50,686	9,21,006	8,88,689	8,60,775	9,05,519	8,88,302	8,73,012
BEP Sales	18,98,510	21,40,378	20,69,185	20,04,323	21,08,548	20,68,351	20,32,465
Average BEP sales	20,45,966						

Calculation of Internal Rate of Return (IRR)				
Sl. No.	Year	PAT	Depreciation	Cash Accrual
		Cash outflow at beginning		
1	31-03-2023	2,13,954	2,91,000	5,04,954
2	31-03-2024	2,92,364	2,47,650	5,40,014
3	31-03-2025	4,01,669	2,10,773	6,12,441
4	31-03-2026	5,10,320	1,79,400	6,89,720
5	31-03-2027	5,52,493	1,52,708	7,05,201
6	31-03-2028	6,49,818	1,29,999	7,79,817
7	31-03-2029	7,51,571	1,10,676	8,62,247
IRR		23.27%		
Payback Period	3 Years 7 Months			



4.10. Summary of Project Cost

SI. No.	Name of Assets	Amount (Rs)
1	Land Development	-
2	Civil Construction	60,000
3	Irrigation/Water Supply	-
4	Electrification	-
5	Plant & Machinery	19,00,000
6	Livestock	-
7	Insurance	30,000
8	DPR Cost	4,838
9	Other miscellaneous exp.	5,162
	Total Fixed Cost	20,00,000
	Recurring	60,000
	Cost of Project	20,60,000



Detailed Project Report
on
Establishment of Aqua shop (500 sq. ft.)

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)	Establishment of Aqua Shop (500 sq. ft.)
2	Sector (as per the Illustrative List of Enterprises)	Fisheries
3	Project Capacity ¹	NA
4	Key components of the project	Aqua Shop
5	Project Address (Village/Ward, Gram Pranchayat/Municipality, Block, District)	
6	Products/Output from the project	Aquarium, Fish Feed, Fish Seed, Live Fish, Medicine, Chemicals etc.
7	Total Project Cost	Rs. 18,09,700
8	Fixed Capital Cost	Rs. 15,07,700
9	Working/Recurring capital	Rs. 3,02,000
10	Bank Finance/ Self Finance	Bank Loan
11	Bank Loan Amount	Rs. 15,98,530
12	Promoter Contribution (min 10% in case of bank loan)	Rs. 2,11,170
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 2. Debt Service Coverage Ratio (DSCR) 3. Internal Rate of Return 4. Break Even Year	Rs. 5,71,911
		2.26
		27.98%
		3 Years and 5 Months
17	Estimated employment to be generated (nos.)	3

Note:

1. Customized DPR is to be prepared as per the information given by the beneficiary.
2. The CIS will be calculated as per the cost norm of MKUY guideline.
3. All the prices quoted here are indicative in nature.
4. The particulars under each component of the Capital Investment may be changed as per the requirement of the project.

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	

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, Society/Trust: Darpan Unique Id



22	Details of experience and exposure relevant to the proposed enterprise/project (family business, work experience, e-learning/certificate courses, trainings undertaken etc.)	
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2.2. Project Consultant Details

DPR prepared by: APICOL, Baramunda, Bhubaneswar





2.3. Concept and Scope of the Project

An aqua shop is a retail store that specializes in selling different items and accessories for fish farming, such as seed, feed, Nutra-essentials, medicine and chemical, fertilizers, farming equipment etc. It's a one stop solution to the fish farmer. Setting up an aqua shop can be a profitable business opportunity in Odisha, as there is a growing demand for different items by the fish farmers.

This DPR is developed for retail sale of different items required in fish farming activity and testing facility on chargeable basis.

Business Opportunity

Fish farmers face a lot of challenges in getting raw material and accessories used in fish farming. They need to visit different shops for getting the required items. Aqua Shop helps in build profitable and sustainable aquaculture enterprises by providing one stop solution to the stakeholders engaged in the fish farming.

3. Techno-commercial Assumptions

Sl. No.	Parameter	Value	Unit
1	Increase in Rate of Product	5	%
2	Increase in Utility Rate/consumption	5	%
3	Collection from Debtors (First Year)	1	Days
4	Collection from Debtors	1	Days
5	Payable to Creditors	5	Days
6	Drawing By Promoter	25	%
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)	2	Days
12	Finished Goods in stock (on sales)	7	Days
13	Promoter's Contribution (Term Loan)	10	%
14	Promoter's Contribution (Working Capital)	20	%
15	Working Capital Requirement	10	Days
16	Working Capital Utilisation	100	%
17	No of working Days	290	Days



4. Financial Details

4.1. Project Fixed Capital

Details of Fixed Assets					
Sl. No.	Particulars	Unit	Qty.	Cost per unit (Rs)	Total (Rs)
A Land					
1	Land Development	Sq. ft	1000	0.70	700
2	Fencing (Barbed wire)	ft	200	60	12,000
	Sub Total				12,700
B Civil Construction					
1	Construction of Aqua shop along with office room	Sq. ft	500	400.00	2,00,000
2	Interior decoration, wall fixed racks (wood & steel)	Sq. ft	500	LS	1,50,000
	Sub Total				3,50,000
C Water Supply					
1	Water Supply (overhead tank, pump and pipeline etc.) including borewell				1,20,000
D Electrification					
1	Electrical Installation (solar/inverter etc.)				2,00,000
E Plant & Machinery					
Sl. No.	Particulars	Specification	Qty	Unit Price (Rs)	Total (Rs)
A Aquarium and Accessories					
1	Aquarium (Glass)				
2	Filter		LS	1,00,000	1,00,000
3	Heaters				
4	Aerators				
B Fish Harvesting equipment (for renting purpose)					
1	Fry Conditioning Happa				
2	Drag net		LS	1,00,000	1,00,000
3	Plankton net				
4	Ice Box, Crates				
C Fish Feed Machine					
1	Pulveriser				
2	Stitching Machine				
3	Sealing machine		LS	3,00,000	3,00,000
4	Pelletizer				
5	Mini extruder				
D Modern Fish Vending Equipment					
1	Deep Freezer				
2	Fish Display Counter				
3	Working Tables (SS)		LS	1,50,000	1,50,000
4	Weighing Machine				
5	Manual de-scaling device				



Details of Fixed Assets					
Sl. No.	Particulars	Unit	Qty.	Cost per unit (Rs)	Total (Rs)
E	Computer set and Printer			1,00,000	1,00,000
F	Water, Soil Testing Kits, Disease Diagnostic kits			50,000	50,000
	Total Machinery Cost				8,00,000
G	Miscellaneous Expenditure				
1	Insurance premium of assets				15,000
2	Cost of DPR Preparation				4,302
3	Other miscellaneous exp.				5,698
	Total Miscellaneous Expenditure				25,000

4.2. Project Variable Expenses

Details of Recurring Expenditure						
A	Details of raw material (per annum @ 100%)					
Sl. No.	Items	Unit	Rate/Unit (Rs)	Qty/day	Qty/annum (kg)	Total Cost (Rs)
Feed						
1	GNOC	Kg	45	10	2900	1,30,500
2	Rice Bran/Peddy Powder	Kg	25	10	2900	72,500
3	Mustard Oil Cake	Kg	40	10	2900	1,16,000
4	DORB (De Oiled Rice Bran)	Kg	15	10	2900	43,500
5	Floating Pellatte Feed 1.2/1.5 mm (Protein>30%)	Kg	55	10	2900	1,59,500
6	Floating Pellatte Feed 2mm (Protein>25%)	Kg	50	10	2900	1,45,000
7	Floating Pellatte Feed 4mm (Protein-20%)	Kg	35	10	2900	1,01,500
8	2mm Magur feed (protein- 32%)	kg	55	10	2900	1,59,500
9	4mm brood feed (protein 30%)	kg	40	10	2900	1,16,000
10	Sinking Pellatte Feed (for fry, fingerling, fish, brood fish): 2mm (protein>25%)	Kg	50	10	2900	1,45,000
11	Sinking Pellatte Feed (for fry, fingerling, fish, brood fish): 2mm (protein>20%)	Kg	35	10	2900	1,01,500
12	Shrimp feed for Magur	Kg	90	10	2900	2,61,000
13	Vitamin mineral mixture	Kg	170	10	2900	4,93,000
14	Pond probiotics	Kg	350	10	2900	10,15,000
15	Prawn Feed	Kg	30	10	2900	87,000
Medicines and Chemicals						
1	Lime: Calcium Oxide	Kg	15	10	2900	43,500



Details of Recurring Expenditure						
A	Details of raw material (per annum @ 100%)					
2	Lime: Calcium Carbonate	Kg	10	10	2900	29,000
3	Dolomite	Kg	10	10	2900	29,000
4	Bleaching Powder (33% efficiency)	Kg	40	10	2900	1,16,000
Other Items						
1	Outer Hatching Happa: Made of 1/20" mesh bolting cloth	Piece	800	1	36	28,800
2	Monofilament rope	Piece	480	1	36	17,280
3	Spawn collection outer happa	Piece	21000	1	12	2,52,000
4	Plankton net	Piece	280	2	580	1,62,400
5	Scoop net	Piece	650	2	580	3,77,000
6	Pumping outer happa	Piece	4300	1	24	1,03,200
7	Fry conditioning happa	Piece	1200	1	36	43,200
8	Fishing net - 200" x 32" x 1"	Piece	48000	1	12	5,76,000
9	Breeding happa - 10m x 4m, x 1m mesh #16	Piece	7300	1	24	1,75,200
10	Nursing Happa - 5m x 2m, x 1m mesh #16	Piece	5000	1	24	1,20,000
11	Crates	Nos.	100	5	1450	1,45,000
12	Ice box	Nos.	2000	1	290	5,80,000
13	Fish Harvesting Equipment	Nos.	10000	1	12	1,20,000
14	Fry Drag Net	Kg	400	1	290	1,16,000
15	Gill Net	Nos.	12000	1	12	1,44,000
16	Tarpaulin	Bundle	7000	1	24	1,68,000
17	Protection Wall	Nos.	200	5	1450	2,90,000
18	Foam	Nos.	1500	1	24	36,000
19	Air Pipe with Controller	Nos.	750	2	580	4,35,000
20	Aquarium Accessories and Fittings	N0s.	10000	1	290	29,00,000
	Total				60,886	1,01,53,080

Details of salary and other benefits				
Sl. No.	Type of Workers	No. of Worker	Salary Per Month/head (Rs)	Total Salary per Annum (Rs)
1	Helper (Salesman)	2	10,000	2,40,000
2	Manager	1	20,000	2,40,000
	Grand Total	3		4,80,000



4.3. Details of Sales

Details of sales						
Sl. No.	Items	Unit	Rate/Unit (Rs)	Qty/day	Qty/annum (kg)	Total Cost (Rs)
Feed						
1	Groundnut oil Cake (GNOC)	Kg	53	10	2900	153990
2	Rice Bran/Paddy Powder	Kg	30	10	2900	85550
3	Mustard Oil Cake	Kg	47	10	2900	136880
4	DORB (De Oiled Rice Bran)	Kg	18	10	2900	51330
5	Floating Pellet Feed 1.2/1.5 mm (Protein>30%)	Kg	65	10	2900	188210
6	Floating Pellet Feed 2mm (Protein>25%)	Kg	59	10	2900	171100
7	Floating Pellet Feed 4mm (Protein-20%)	Kg	41	10	2900	119770
8	2mm Magur feed (protein- 32%)	kg	65	10	2900	188210
9	4mm brood feed (protein 30%)	kg	47	10	2900	136880
10	Sinking Pellet Feed (for fry, fingerling, fish, brood fish): 2mm (protein>25%)	Kg	59	10	2900	171100
11	Sinking Pellet Feed (for fry, fingerling, fish, brood fish): 2mm (protein>20%)	Kg	41	10	2900	119770
12	Shrimp feed for Magur	Kg	106	10	2900	307980
13	Vitamin mineral mixture	Kg	201	10	2900	581740
14	Pond probiotics	Kg	413	10	2900	1197700
15	Prawn Feed	Kg	35	10	2900	102660
Medicines and Chemicals						
1	Lime: Calcium Oxide	Kg	18	10	2900	51330
2	Lime: Calcium Carbonate	Kg	12	10	2900	34220
3	Dolomite	Kg	12	10	2900	34220
4	Bleaching Powder (33% efficiency)	Kg	47	10	2900	136880
Other Items						
1	Outer Hatching Happa: Made of 1/20" mesh bolting cloth	Piece	944	1	36	33984
2	Monofilament rope	Piece	566	1	36	20390
3	Spawn collection outer happa	Piece	24780	1	12	297360
4	Plankton net	Piece	330	2	580	191632
5	Scoop net	Piece	767	2	580	444860
6	Pumping outer happa	Piece	5074	1	24	121776
7	Fry conditioning happa	Piece	1416	1	36	50976



Details of sales						
8	Fishing net - 200" x 32" x 1"	Piece	56640	1	12	679680
9	Breeding happa - 10m x 4m, x 1m mesh #16	Piece	8614	1	24	206736
10	Nursing Happa - 5m x2m, x 1m mesh #16	Piece	5900	1	24	141600
11	Crates	Nos.	118	5	1450	171100
12	Ice box	Nos.	2360	1	290	684400
13	Fish Harvesting Equipment	Nos.	11800	1	12	141600
14	Fry Drag Net	Kg	472	1	290	136880
15	Gill Net	Nos.	14160	1	12	169920
16	Tarpaulin	Bundle	8260	1	24	198240
17	Protection Wall	Nos.	236	5	1450	342200
18	Foam	Nos.	1770	1	24	42480
19	Air Pipe with Controller	Nos.	885	2	580	513300
20	Aquarium Accessories and Fittings	Nos.	11800	1	290	342200
	Total				63,786	1,19,80,634



4.4. Project Balance Sheet

Liabilities	I	II	III	IV	V	VI	VII
Opening Capital	-	3,68,993	5,38,056	7,49,113	10,08,364	13,06,924	15,71,665
Add: Introduced	2,11,170						
Add: Profit	2,10,823	3,49,064	4,62,056	5,96,252	7,34,559	7,88,741	8,61,885
Less: Drawing	53,000	1,80,000	2,51,000	3,37,000	4,36,000	5,24,000	6,09,000
Closing Capital	3,68,993	5,38,056	7,49,113	10,08,364	13,06,924	15,71,665	18,24,550
Term Loan from Bank	12,20,650	10,68,600	8,98,954	7,09,678	4,98,499	2,62,882	-
Current Liabilities							
Cash Credit from Bank	2,41,600	2,41,600	2,41,600	2,41,600	2,41,600	2,41,600	2,41,600
Sundry Creditors	1,01,531	1,33,267	1,49,267	1,66,533	1,85,150	1,94,417	2,04,150
Expenses Payable	61,700	69,500	74,700	80,100	86,000	90,300	94,800
Current Provisions	-	5,214	11,161	39,688	74,265	87,810	1,06,096
Total Current Liabilities	4,04,831	4,49,581	4,76,728	5,27,921	5,87,015	6,14,127	6,46,646
Total Liabilities	19,94,473	20,56,237	21,24,795	22,45,964	23,92,437	24,48,673	24,71,196
Assets							
Fixed Assets	14,82,700	14,82,700	14,82,700	14,82,700	14,82,700	14,82,700	14,82,700
Less Depreciation	1,97,000	3,39,600	4,86,045	6,12,427	7,21,564	8,15,873	8,97,423
Net Fixed Assets	12,85,700	11,43,100	9,96,655	8,70,273	7,61,136	6,66,827	5,85,277
Current Assets							
Sundry Debtors	24,000	31,500	35,300	39,300	43,700	45,900	48,200
Inventories	2,15,613	2,28,713	2,89,541	3,24,090	3,61,286	3,96,900	4,16,734
Cash and Bank Balance	4,800	6,300	7,100	7,900	8,800	9,200	9,700
Other Current Assets	4,64,361	6,46,624	7,96,198	10,04,401	12,17,515	13,29,847	14,11,285
Total Current Assets	7,08,773	9,13,137	11,28,140	13,75,691	16,31,302	17,81,847	18,85,919
Total Assets	19,94,473	20,56,237	21,24,795	22,45,964	23,92,437	24,48,673	24,71,196



4.5. Calculation of Depreciation

Rates of Depreciation		10%	15%	Total depreciation for the year (Rs)
Year	1	47,000.00	1,50,000	1,97,000
	2	42,300.00	1,27,500	1,69,800
	3	38,070.00	1,08,375	1,46,445
	4	34,263.00	92,119	1,26,382
	5	30,836.70	78,301	1,09,138
	6	27,753.03	66,556	94,309
	7	24,977.73	56,572	81,550

4.6. Projected P&L

Description	Year ending March 31st						
	I	II	III	IV	V	VI	VII
Capacity Utilisation	60	75	80	85	90	90	90
Revenue							
Sales	71,88,381	94,35,000	1,05,68,000	1,17,90,000	1,31,08,000	1,37,64,000	1,44,53,000
Opening Stock of Finished Goods	-	(1,73,513)	(2,27,741)	(2,55,090)	(2,84,586)	(3,16,400)	(3,32,234)
Closing Stock of Finished Goods	1,73,513	2,27,741	2,55,090	2,84,586	3,16,400	3,32,234	3,48,866
Total Income (A)	73,61,893	94,89,229	1,05,95,348	1,18,19,497	1,31,39,814	1,37,79,834	1,44,69,631
Expenditure							
Opening stock of Raw Material	-	42,100	55,200	61,800	69,000	76,700	80,500
Purchase (Net) of Material	60,91,848	79,96,000	89,56,000	99,92,000	1,11,09,000	1,16,65,000	1,22,49,000
Closing Stock of Raw material	42,100	55,200	61,800	69,000	76,700	80,500	84,500
Raw Material Consumption	60,49,748	79,82,900	89,49,400	99,84,800	1,11,01,300	1,16,61,200	1,22,45,000
Repair & Maintenance- Machinery (@5% of Cost)	29,400	30,900	32,500	34,200	36,000	37,800	39,700
Utility expense	1,43,768	1,88,700	2,11,400	2,35,800	2,62,200	2,75,300	2,89,400
Insurance cost	15,000	15,800	16,600	17,500	18,400	19,400	20,400
Administrative salaries and wages	4,80,000	5,04,000	5,29,200	5,55,700	5,83,500	6,12,700	6,43,400
Other Misc. Expenses [@1% of sales]	71,884	94,350	1,05,680	1,17,900	1,31,080	1,37,640	1,44,530
Total Cost	67,89,799	88,16,650	98,44,780	1,09,45,900	1,21,32,480	1,27,44,040	1,33,82,430



Description	Year ending March 31st						
	I	II	III	IV	V	VI	VII
Profit Before Depreciation, Interest and Tax	5,72,094	6,72,579	7,50,568	8,73,597	10,07,334	10,35,794	10,87,201
Depreciation	1,97,000	1,69,800	1,46,445	1,26,382	1,09,138	94,309	81,550
Profit Before Interest and Tax	3,75,094	5,02,779	6,04,123	7,47,215	8,98,196	9,41,486	10,05,651
Interest on Term Loan	1,42,527	1,26,757	1,09,162	89,531	67,628	43,191	15,925
Interest on Working Capital Loan	21,744	21,744	21,744	21,744	21,744	21,744	21,744
Total Interest Paid	1,64,271	1,48,501	1,30,906	1,11,275	89,372	64,935	37,669
Profit Before Tax	2,10,823	3,54,278	4,73,217	6,35,940	8,08,824	8,76,551	9,67,982
Income Tax	-	5,214	11,161	39,688	74,265	87,810	1,06,096
Profit after Tax	2,10,823	3,49,064	4,62,056	5,96,252	7,34,559	7,88,741	8,61,885

4.7. Projected Cash Flow

Period Ending:	I	II	III	IV	V	VI	VII
Cash & Bank Balance at Beginning	-	4,800	33,500	34,300	35,100	36,000	36,400
Cash Inflow during the Period	21,91,473	5,63,613	6,35,648	7,73,827	9,02,790	9,10,162	9,75,955
Cash Outflow during the Period	21,86,673	5,34,913	6,34,848	7,73,027	9,01,890	9,09,762	9,75,455
Closing Cash & Bank Balance	4,800	33,500	34,300	35,100	36,000	36,400	36,900

4.8. Projected Loan Repayment

Year	Interest	EMI	Principal
1	1,42,527.33	2,78,807.37	1,36,280.05
2	1,26,757.16	2,78,807.37	1,52,050.21
3	1,09,162.08	2,78,807.37	1,69,645.29
4	89,530.93	2,78,807.37	1,89,276.44
5	67,628.08	2,78,807.37	2,11,179.29
6	43,190.66	2,78,807.37	2,35,616.71
7	15,925.37	2,78,807.37	2,62,882.01
Total	5,94,721.60	19,51,651.60	13,56,930.00



4.9. Calculation of DSCR, IRR and BEP

Calculation of DSCR							
Year	I	II	III	IV	V	VI	VII
Net Sales	71,88,381	94,35,000	1,05,68,000	1,17,90,000	1,31,08,000	1,37,64,000	1,44,53,000
Net Profit	2,10,823	3,49,064	4,62,056	5,96,252	7,34,559	7,88,741	8,61,885
Interest Paid	1,64,271	1,48,501	1,30,906	1,11,275	89,372	64,935	37,669
Cash Accruals (a)	3,75,094	4,97,565	5,92,962	7,07,527	8,23,931	8,53,675	8,99,555
Interest Paid	8,78,044	7,83,879	6,77,772	5,58,208	4,23,480	2,71,665	1,00,597
Principal	1,36,280	1,52,050	1,69,645	1,89,276	2,11,179	2,35,617	2,62,882
Interest	1,64,271	1,48,501	1,30,906	1,11,275	89,372	64,935	37,669
Total (b)	3,00,551	3,00,551	3,00,551	3,00,551	3,00,551	3,00,551	3,00,551
DSCR	1.25	1.66	1.97	2.35	2.74	2.84	2.99
Average DSCR	2.26						

Calculation of Break-Even Point (BEP)							
Sales	73,61,893	94,89,229	1,05,95,348	1,18,19,497	1,31,39,814	1,37,79,834	1,44,69,631
Variable Cost	61,21,632	80,77,250	90,55,080	1,01,02,700	1,12,32,380	1,17,98,840	1,23,89,530
Contribution	12,40,261	14,11,979	15,40,268	17,16,797	19,07,434	19,80,994	20,80,101
Fixed Cost	10,29,439	10,57,701	10,67,051	10,80,857	10,98,610	11,04,443	11,12,120
BEP Sales	61,10,502	71,08,300	73,40,136	74,41,290	75,68,036	76,82,529	77,36,143
Average BEP sales	72,83,848						

Calculation of Internal Rate of Return (IRR)				
Sl. No.	Year	PAT	Depreciation	Cash Accrual
	Cash outflow at beginning			-18,09,700
1	31-03-2023	2,10,823	1,97,000	4,07,823
2	31-03-2024	3,49,064	1,69,800	5,18,864
3	31-03-2025	4,62,056	1,46,445	6,08,501
4	31-03-2026	5,96,252	1,26,382	7,22,634
5	31-03-2027	7,34,559	1,09,138	8,43,697
6	31-03-2028	7,88,741	94,309	8,83,050
7	31-03-2029	8,61,885	81,550	9,43,435
IRR		27.98%		



Payback Period	3 Years 5 Months	
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4.10. Summary of Project Cost

Sl. No.	Name of Assets	Amount (Rs)
1	Land Development and Fencing	12,700
2	Civil Construction	3,50,000
3	Irrigation/Water Supply	1,20,000
4	Electrification	2,00,000
5	Plant & Machinery	8,00,000
6	Livestock	-
7	Insurance	15,000
8	DPR Cost	4,271
9	Other Miscellaneous Exp.	5,729
	Total Fixed Cost	15,07,700
	Recurring	3,02,000
	Cost of Project	18,09,700



Detailed Project Report
on
Establishment of Aqua Shop (1000 sq. ft.)

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)	Establishment of Aqua shop (1000 sq. ft.)
2	Sector (as per the Illustrative List of Enterprises)	Fisheries
3	Project Capacity ¹	NA
4	Key components of the project	Aqua Shop
5	Project Address (Village/Ward, Gram Pranchayat/Municipality, Block, District)	
6	Products/Output from the project	Aquarium, Fish Feed, Fish Seed, Live Fish, Medicine, Chemicals etc.
7	Total Project Cost	Rs. 20,58,050
8	Fixed Capital Cost	Rs. 17,08,050
9	Working/Recurring capital	Rs. 3,50,000
10	Bank Finance/ Self Finance	Bank Loan
11	Bank Loan Amount	Rs. 18,17,245
12	Promoter Contribution (min 10% in case of bank loan)	Rs. 2,40,805
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. 7,39,042
	2. Debt Service Coverage Ratio (DSCR)	2.52
	3. Internal Rate of Return	32.44%
	4. Break Even Year	3 Years and 1 Months
17	Estimated employment to be generated (nos.)	3

Note:

1. Customized DPR is to be prepared as per the information given by the beneficiary.
2. The CIS will be calculated as per the cost norm of MKUY guideline.
3. All the prices quoted here are indicative in nature.
4. The particulars under each component of the Capital Investment may be changed as per the requirement of the project.

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	

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, Society/Trust: Darpan Unique Id



22	Details of experience and exposure relevant to the proposed enterprise/project (family business, work experience, e-learning/certificate courses, trainings undertaken etc.)	
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2.2. Project Consultant Details

DPR prepared by: APICOL, Baramunda, Bhubaneswar





2.3. Concept and Scope of the Project

An aqua shop is a retail store that specializes in selling different items and accessories for fish farming, such as seed, feed, Nutra-essentials, medicine and chemical, fertilizers, farming equipment etc. It's a one stop solution to the fish farmer. Setting up an aqua shop can be a profitable business opportunity in Odisha, as there is a growing demand for different items by the fish farmers.

This DPR is developed for retail sale of different items required in fish farming activity and testing facility on chargeable basis.

Business Opportunity

Fish farmers face a lot of challenges in getting raw material and accessories used in fish farming. They need to visit different shops for getting the required items. Aqua Shop helps in build profitable and sustainable aquaculture enterprises by providing one stop solution to the stakeholders engaged in the fish farming.

3. Techno-commercial Assumptions

Sl. No.	Parameter	Value	Unit
1	Increase in Rate of Product	5	%
2	Increase in Utility Rate/consumption	5	%
3	Collection from Debtors (First Year)	1	Days
4	Collection from Debtors	1	Days
5	Payable to Creditors	5	Days
6	Drawing By Promoter	25	%
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)	2	Days
12	Finished Goods in stock (on sales)	7	Days
13	Promoter's Contribution (Term Loan)	10	%
14	Promoter's Contribution (Working Capital)	20	%
15	Working Capital Requirement	15	Days
16	Working Capital Utilisation	100	%
17	No of working Days	290	Days



4. Financial Details

4.1. Project Fixed Capital

Details of Fixed Assets					
Sl. No.	Particulars	Unit	Qty.	Cost per unit (Rs)	Total (Rs)
A Land					
1	Land Development	Sq. ft	1500	0.70	1,050
2	Fencing (Barbed wire)	ft	200	60	12,000
	Sub Total				13,050
B Civil Construction					
1	Construction of Aqua shop along with office room	Sq. ft	1000	400.00	4,00,000
2	Interior decoration, wall fixed racks (wood & steel)	Sq. ft	1000	LS	1,50,000
	Sub Total				5,50,000
C Water Supply					
1	Water Supply (overhead tank, pump and pipeline etc.) including borewell				1,20,000
D Electrification					
1	Electrical Installation (solar/inverter etc.)				2,00,000
E Plant & Machinery					
Sl. No.	Particulars	Specification	Qty	Unit Price (Rs)	Total (Rs)
A Aquarium and Accessories					
1	Aquarium (Glass)				
2	Filter		LS	1,00,000	1,00,000
3	Heaters				
4	Aerators				
B Fish Harvesting equipment (for renting purpose)					
1	Fry Conditioning Happa				
2	Drag net		LS	1,00,000	1,00,000
3	Plankton net				
4	Ice Box, Crates				
C Fish Feed Machine					
1	Pulveriser				
2	Stitching Machine				
3	Sealing machine		LS	3,00,000	3,00,000
4	Pelletizer				
5	Mini extruder				
D Modern Fish Vending Equipment					
1	Deep Freezer				
2	Fish Display Counter				
3	Working Tables (SS)		LS	1,50,000	1,50,000
4	Weighing Machine				
5	Manual de-scaling device				



Details of Fixed Assets					
Sl. No.	Particulars	Unit	Qty.	Cost per unit (Rs)	Total (Rs)
E	Computer set and Printer			1,00,000	1,00,000
F	Water, Soil Testing Kits, Disease Diagnostic kits			50,000	50,000
	Total Machinery Cost				8,00,000
G Miscellaneous Expenditure					
1	Insurance premium of assets				15,000
2	Cost of DPR Preparation				4,875
3	Other miscellaneous exp.				5,125
	Total Miscellaneous Expenditure				25,000

4.2. Project Variable Expenses

Details of Recurring Expenditure						
A	Details of raw material (per annum @ 100%)					
Sl. No.	Items	Unit	Rate/Unit (Rs)	Qty/day	Qty/annum (kg)	Total Cost (Rs)
Feed						
1	Groundnut oil Cake (GNOC)	Kg	45	15	4350	1,95,750
2	Rice Bran/Peddy Powder	Kg	25	15	4350	1,08,750
3	Mustard Oil Cake	Kg	40	15	4350	1,74,000
4	DORB (De Oiled Rice Bran)	Kg	15	15	4350	65,250
5	Floating Pellet Feed 1.2/1.5 mm (Protein>30%)	Kg	55	15	4350	2,39,250
6	Floating Pellet Feed 2mm (Protein>25%)	Kg	50	15	4350	2,17,500
7	Floating Pellet Feed 4mm (Protein-20%)	Kg	35	15	4350	1,52,250
8	2mm Magur feed (protein-32%)	kg	55	15	4350	2,39,250
9	4mm brood feed (protein 30%)	kg	40	15	4350	1,74,000
10	Sinking Pellet Feed (for fry, fingerling, fish, brood fish): 2mm (protein>25%)	Kg	50	15	4350	2,17,500
11	Sinking Pellet Feed (for fry, fingerling, fish, brood fish): 2mm (protein>20%)	Kg	35	15	4350	1,52,250
12	Shrimp feed for Magur	Kg	90	15	4350	3,91,500
13	Vitamin mineral mixture	Kg	170	15	4350	7,39,500
14	Pond probiotics	Kg	350	15	4350	15,22,500
15	Prawn Feed	Kg	30	15	4350	1,30,500
Medicines and Chemicals						
1	Lime: Calcium Oxide	Kg	15.00	15	4350	65,250
2	Lime: Calcium Carbonate	Kg	10.00	15	4350	43,500
3	Dolomite	Kg	10.00	15	4350	43,500



Details of Recurring Expenditure						
A	Details of raw material (per annum @ 100%)					
4	Bleaching Powder (33% efficiency)	Kg	40.00	15	4350	1,74,000
Other Items						
1	Outer Hatching Happa: Made of 1/20" mesh bolting cloth	Piece	800	0	36	28,800
2	Monofilament rope	Piece	480	0	36	17,280
3	Spawn collection outer happa	Piece	21000	0	12	2,52,000
4	Plankton net	Piece	280	2	580	1,62,400
5	Scoop net	Piece	650	2	580	3,77,000
6	Pumping outer happa	Piece	4300	0	24	1,03,200
7	Fry conditioning happa	Piece	1200	0	36	43,200
8	Fishing net - 200" x 32" x 1"	Piece	48000	0	12	5,76,000
9	Breeding happa - 10m x 4m, x 1m mesh #16	Piece	7300	0	24	1,75,200
10	Nursing Happa - 5m x2m, x 1m mesh #16	Piece	5000	0	24	1,20,000
11	Crates	Nos.	100	5	1450	1,45,000
12	Ice box	Nos.	2000	1	290	5,80,000
13	Fish Harvesting Equipment	Nos.	10000	0	12	1,20,000
14	Fry Drag Net	Kg	400	1	290	1,16,000
15	Gill Net	Nos.	12000	0	12	1,44,000
16	Tarpaulin	Bundle	7000	0	24	1,68,000
17	Protection Wall	Nos.	200	5	1450	2,90,000
18	Foam	Nos.	1500	0	24	36,000
19	Air Pipe with Controller	Nos.	750	2	580	4,35,000
20	Aquarium Accessories and Fittings	Nos.	10000	1	290	29,00,000
	Total				88,436	1,18,35,080

Details of salary and other benefits				
Sl. No.	Type of Workers	No. of Worker	Salary Per Month/head (Rs)	Total Salary per Annum (Rs)
1	Helper (Salesman)	2	10,000	2,40,000
2	Manager	1	20,000	2,40,000
	Grand Total	3		4,80,000

4.3. Details of Sales

Details of sales						
Sl. No.	Items	Unit	Rate/Unit (Rs)	Qty/day	Qty/annum (kg)	Total Cost (Rs)
Feed						
1	Groundnut oil Cake (GNOC)	Kg	53	15	4350	230985



Details of sales						
2	Rice Bran/Paddy Powder	Kg	30	15	4350	128325
3	Mustard Oil Cake	Kg	47	15	4350	205320
4	DORB (De Oiled Rice Bran)	Kg	18	15	4350	76995
5	Floating Pellet Feed 1.2/1.5 mm (Protein>30%)	Kg	65	15	4350	282315
6	Floating Pellet Feed 2mm (Protein>25%)	Kg	59	15	4350	256650
7	Floating Pellet Feed 4mm (Protein-20%)	Kg	41	15	4350	179655
8	2mm Magur feed (protein- 32%)	kg	65	15	4350	282315
9	4mm brood feed (protein 30%)	kg	47	15	4350	205320
10	Sinking Pellet Feed (for fry, fingerling, fish, brood fish): 2mm (protein>25%)	Kg	59	15	4350	256650
11	Sinking Pellet Feed (for fry, fingerling, fish, brood fish): 2mm (protein>20%)	Kg	41	15	4350	179655
12	Shrimp feed for Magur	Kg	106	15	4350	461970
13	Vitamin mineral mixture	Kg	201	15	4350	872610
14	Pond probiotics	Kg	413	15	4350	1796550
15	Prawn Feed	Kg	35	15	4350	153990
Medicines and Chemicals						
1	Lime: Calcium Oxide	Kg	18	15	4350	76995
2	Lime: Calcium Carbonate	Kg	12	15	4350	51330
3	Dolomite	Kg	12	15	4350	51330
4	Bleaching Powder (33% efficiency)	Kg	47	15	4350	205320
Other Items						
1	Outer Hatching Happa: Made of 1/20" mesh bolting cloth	Piece	944	1	36	33984
2	Monofilament rope	Piece	566	1	36	20390
3	Spawn collection outer happa	Piece	24780	1	12	297360
4	Plankton net	Piece	330	2	580	191632
5	Scoop net	Piece	767	2	580	444860
6	Pumping outer happa	Piece	5074	1	24	121776
7	Fry conditioning happa	Piece	1416	1	36	50976
8	Fishing net - 200" x 32" x 1"	Piece	56640	1	12	679680
9	Breeding happa - 10m x 4m, x 1m mesh #16	Piece	8614	1	24	206736
10	Nursing Happa - 5m x2m, x 1m mesh #16	Piece	5900	1	24	141600



Details of sales						
11	Crates	Nos.	118	5	1450	171100
12	Ice box	Nos.	2360	1	290	684400
13	Fish Harvesting Equipment	Nos.	11800	1	12	141600
14	Fry Drag Net	Kg	472	1	290	136880
15	Gill Net	Nos.	14160	1	12	169920
16	Tarpaulin	Bundle	8260	1	24	198240
17	Protection Wall	Nos.	236	5	1450	342200
18	Foam	Nos.	1770	1	24	42480
19	Air Pipe with Controller	Nos.	885	2	580	513300
20	Aquarium Accessories and Fittings	Nos.	11800	1	290	342200
	Total				92,786	1,39,65,394



4.4. Project Balance Sheet

Liabilities	I	II	III	IV	V	VI	VII
Opening Capital	-	4,96,007	7,45,731	10,16,246	13,34,448	16,91,886	20,03,270
Add: Introduced	2,40,805						
Add: Profit	3,41,202	4,98,724	6,10,515	7,64,201	9,22,438	9,79,384	10,56,832
Less: Drawing	86,000	2,49,000	3,40,000	4,46,000	5,65,000	6,68,000	7,66,000
Closing Capital	4,96,007	7,45,731	10,16,246	13,34,448	16,91,886	20,03,270	22,94,101
Term Loan from Bank	13,82,855	12,10,600	10,18,412	8,03,983	5,64,741	2,97,815	-
Current Liabilities							
Cash Credit from Bank	2,80,000	2,80,000	2,80,000	2,80,000	2,80,000	2,80,000	2,80,000
Sundry Creditors	1,18,351	1,55,350	1,74,000	1,94,133	2,15,833	2,26,633	2,37,967
Expenses Payable	65,000	73,800	79,400	85,400	91,800	96,400	1,01,300
Current Provisions	4,800	15,306	43,254	81,675	1,27,473	1,51,879	1,85,071
Total Current Liabilities	4,68,151	5,24,456	5,76,654	6,41,209	7,15,107	7,54,912	8,04,337
Total Liabilities	23,47,013	24,80,787	26,11,312	27,79,640	29,71,734	30,55,997	30,98,438
Assets							
Fixed Assets	16,83,050	16,83,050	16,83,050	16,83,050	16,83,050	16,83,050	16,83,050
Less Depreciation	2,17,000	3,75,600	5,38,245	6,79,207	8,01,466	9,07,585	9,99,764
Net Fixed Assets	14,66,050	13,07,450	11,44,805	10,03,843	8,81,584	7,75,465	6,83,286
Current Assets							
Sundry Debtors	28,000	36,700	41,100	45,900	51,000	53,500	56,200
Inventories	2,51,257	2,66,557	3,37,469	3,77,731	4,21,128	4,62,603	4,85,745
Cash and Bank Balance	5,600	7,400	8,300	9,200	10,200	10,700	11,300
Other Current Assets	5,96,106	8,62,680	10,79,638	13,42,965	16,07,823	17,53,728	18,61,908
Total Current Assets	8,80,963	11,73,337	14,66,507	17,75,796	20,90,150	22,80,532	24,15,152
Total Assets	23,47,013	24,80,787	26,11,312	27,79,640	29,71,734	30,55,997	30,98,438



4.5. Calculation of Depreciation

Rates of Depreciation		10%	15%	Total depreciation for the year (Rs)
Year	1	67,000.00	1,50,000	2,17,000
	2	60,300.00	1,27,500	1,87,800
	3	54,270.00	1,08,375	1,62,645
	4	48,843.00	92,119	1,40,962
	5	43,958.70	78,301	1,22,260
	6	39,562.83	66,556	1,06,119
	7	35,606.55	56,572	92,179

4.6. Projected P&L

Description	Year ending March 31st						
	I	II	III	IV	V	VI	VII
Capacity Utilisation	60	75	80	85	90	90	90
Revenue							
Sales	83,79,237	1,09,98,000	1,23,18,000	1,37,43,000	1,52,79,000	1,60,43,000	1,68,46,000
Opening Stock of Finished Goods	-	(2,02,257)	(2,65,469)	(2,97,331)	(3,31,728)	(3,68,803)	(3,87,245)
Closing Stock of Finished Goods	2,02,257	2,65,469	2,97,331	3,31,728	3,68,803	3,87,245	4,06,628
Total Income (A)	85,81,494	1,10,61,212	1,23,49,862	1,37,77,397	1,53,16,076	1,60,61,441	1,68,65,383
Expenditure							
Opening stock of Raw Material	-	49,000	64,300	72,000	80,400	89,400	93,800
Purchase (Net) of Material	71,01,048	93,21,000	1,04,40,000	1,16,48,000	1,29,50,000	1,35,98,000	1,42,78,000
Closing Stock of Raw material	49,000	64,300	72,000	80,400	89,400	93,800	98,500
Raw Material Consumption	70,52,048	93,05,700	1,04,32,300	1,16,39,600	1,29,41,000	1,35,93,600	1,42,73,300
Repair & Maintenance- Machinery (@5% of Cost)	33,400	35,100	36,900	38,800	40,800	42,900	45,100
Utility expense	1,67,585	2,20,000	2,46,400	2,74,900	3,05,600	3,20,900	3,37,400
Insurance cost	15,000	15,800	16,600	17,500	18,400	19,400	20,400
Administrative salaries and wages	4,80,000	5,04,000	5,29,200	5,55,700	5,83,500	6,12,700	6,43,400
Other Misc. Expenses [@1% of sales]	83,792	1,09,980	1,23,180	1,37,430	1,52,790	1,60,430	1,68,460
Total Cost	78,31,825	1,01,90,580	1,13,84,580	1,26,63,930	1,40,42,090	1,47,49,930	1,54,88,060



Description	Year ending March 31st						
	I	II	III	IV	V	VI	VII
Profit Before Depreciation, Interest and Tax	7,49,669	8,70,632	9,65,282	11,13,467	12,73,986	13,11,511	13,77,323
Depreciation	2,17,000	1,87,800	1,62,645	1,40,962	1,22,260	1,06,119	92,179
Profit Before Interest and Tax	5,32,669	6,82,832	8,02,637	9,72,505	11,51,726	12,05,393	12,85,144
Interest on Term Loan	1,61,467	1,43,601	1,23,668	1,01,428	76,615	48,930	18,042
Interest on Working Capital Loan	25,200	25,200	25,200	25,200	25,200	25,200	25,200
Total Interest Paid	1,86,667	1,68,801	1,48,868	1,26,628	1,01,815	74,130	43,242
Profit Before Tax	3,46,002	5,14,030	6,53,769	8,45,877	10,49,911	11,31,263	12,41,902
Income Tax	4,800	15,306	43,254	81,675	1,27,473	1,51,879	1,85,071
Profit after Tax	3,41,202	4,98,724	6,10,515	7,64,201	9,22,438	9,79,384	10,56,832

4.7. Projected Cash Flow

Period Ending:	I	II	III	IV	V	VI	VII
Cash & Bank Balance at Beginning	-	5,600	36,600	37,500	38,400	39,400	39,900
Cash Inflow during the Period	25,64,013	7,42,829	8,25,358	9,69,718	11,18,596	11,25,308	11,98,436
Cash Outflow during the Period	25,58,413	7,11,829	8,24,458	9,68,818	11,17,596	11,24,808	11,97,836
Closing Cash & Bank Balance	5,600	36,600	37,500	38,400	39,400	39,900	40,500

4.8. Projected Loan Repayment

Year	Interest	EMI	Principal
1	1,61,467.00	3,15,856.56	1,54,389.55
2	1,43,601.22	3,15,856.56	1,72,255.33
3	1,23,668.04	3,15,856.56	1,92,188.52
4	1,01,428.20	3,15,856.56	2,14,428.35
5	76,614.81	3,15,856.56	2,39,241.75
6	48,930.03	3,15,856.56	2,66,926.53
7	18,041.60	3,15,856.56	2,97,814.96
Total	6,73,750.90	22,10,995.90	15,37,245.00



4.9. Calculation of DSCR, IRR and BEP

Calculation of DSCR							
Year	I	II	III	IV	V	VI	VII
Net Sales	83,79,237	1,09,98,000	1,23,18,000	1,37,43,000	1,52,79,000	1,60,43,000	1,68,46,000
Net Profit	3,41,202	4,98,724	6,10,515	7,64,201	9,22,438	9,79,384	10,56,832
Interest Paid	1,86,667	1,68,801	1,48,868	1,26,628	1,01,815	74,130	43,242
Cash Accruals (a)	5,27,869	6,67,525	7,59,383	8,90,829	10,24,253	10,53,514	11,00,073
Principal	1,54,390	1,72,255	1,92,189	2,14,428	2,39,242	2,66,927	2,97,815
Interest	1,86,667	1,68,801	1,48,868	1,26,628	1,01,815	74,130	43,242
Total (b)	3,41,057	3,41,057	3,41,057	3,41,057	3,41,057	3,41,057	3,41,057
DSCR	1.55	1.96	2.23	2.61	3.00	3.09	3.23
Average DSCR	2.52						

Calculation of Break-Even Point (BEP)							
Sales	85,81,494	1,10,61,212	1,23,49,862	1,37,77,397	1,53,16,076	1,60,61,441	1,68,65,383
Variable Cost	71,35,840	94,15,680	1,05,55,480	1,17,77,030	1,30,93,790	1,37,54,030	1,44,41,760
Contribution	14,45,654	16,45,532	17,94,382	20,00,367	22,22,286	23,07,411	24,23,623
Fixed Cost	10,99,652	11,31,501	11,40,613	11,54,490	11,72,374	11,76,149	11,81,721
BEP Sales	65,27,604	76,05,916	78,50,287	79,51,476	80,80,048	81,86,942	82,23,297
Average BEP sales	77,75,081						

Calculation of Internal Rate of Return (IRR)				
Sl. No.	Year	PAT	Depreciation	Cash Accrual
		Cash outflow at beginning		
1	31-03-2023	3,41,202	2,17,000	5,58,202
2	31-03-2024	4,98,724	1,87,800	6,86,524
3	31-03-2025	6,10,515	1,62,645	7,73,160
4	31-03-2026	7,64,201	1,40,962	9,05,163
5	31-03-2027	9,22,438	1,22,260	10,44,698
6	31-03-2028	9,79,384	1,06,119	10,85,503
7	31-03-2029	10,56,832	92,179	11,49,011
IRR		32.44%		
Payback Period	3 Years 1 Months			



4.10. Summary of Project Cost

SI. No.	Name of Assets	Amount (Rs)
1	Land Development and Fencing	13,050
2	Civil Construction	5,50,000
3	Irrigation/Water Supply	1,20,000
4	Electrification	2,00,000
5	Plant & Machinery	8,00,000
6	Livestock	-
7	Insurance	15,000
8	DPR Cost	4,875
9	Other Miscellaneous Exp.	5,125
	Total Fixed Cost	17,08,050
	Recurring	3,50,000
	Cost of Project	20,58,050