



## *Fish Feed Unit Model DPR*

***Submitted by:***

Directorate of Horticulture,  
Government of Bihar

*Disclaimer: This is just a model DPR prepared based on assumptions for reference purpose only. The project cost and financial projections may vary project to project as per technology selection, nature of civil work, price of raw materials etc.*

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## 1. Project at a glance

1.	Name of the Unit	:	
2.	Constitution	:	
3.	Date of Incorporation	:	
4.	CIN	:	
5.	PAN	:	
6.	GST		
7.	Registered Office	:	
8.	Factory Address	:	
9.	Name of Directors	:	
10.	Type of Unit	:	
11.	Nature of Project	:	Mini Fish Feed Mill Unit
12.	Installed Capacity at 100% Capacity Utilization	:	08 MT Per Day
13.	Cost of the Project	:	INR 158.36 lakhs
14.	Promoter's Contribution	:	INR 39.59 Lakh
15.	Proposed Term Loan	:	INR 118.77 Lakh
16.	Requirement of Cash CreditLimit	:	
17.	Proposed Employment	:	Direct Employment - 9 nos.
18.	Power Load	:	270 kVA

## 2. Introduction

Fishes nutritional demands is fulfilled with availability of proteins, carbohydrate, fats, minerals , vitamins etc. for their growth, survival and multiplication. The requirements of feed is more for the cultured fish as the feed available in ponds generally becomes insufficient for healthy growth and development of fishes which further requires supplements in form of feed. Hence, to culture fishes in ponds, tanks etc. with nutritional needs and to augment their growth as well as increasing immunity towards infection and eventually achieve the desired production, fish feed are being provided.

The focus of various State and Central schemes under fisheries sector is to enhance the existing area, which would require adequate availability of feed supply. In this context, the State agencies seeks to promote establishment of fish feed mills and introduce concentrated feed in the state which will be locally available to the farmers at a lower rate. The setting up of feed mills will be aimed at producing formulated feed to enhance the growth performance, survivability rate and finally availability of quality fish for consumption in the state.

Assessing the State's potential of capitalizing on the surplus production of fish and the potential of increasing the level of processing, value addition, employment generation, creating self-reliance and promote focused sector growth under fishery sector, Bihar Government has launched- Bihar Agri Investment Promotion Policy 2020 (BAIPP 2020). The policy identifies fishery sector as one of the core sector among six other in agriculture and aims to create an ecosystem for developing and creating enterprises across fish feed processing and value addition activities.

The policy shall provide capital subsidy to the eligible individual investors / entrepreneurs or registered farmer-based companies for setting up / modernization / diversification/ expansion of agro processing units in the identified sectors of Agriculture, in the state of Bihar. The investors/ entrepreneurs may set-up their units as Proprietorship, Partnership firm, Limited Liability Partnership (LLP), Company including Farmer Producer Company (FPC).

### 3. Background

Fisheries sector has gained importance across globe including India due to the low cost availability of proteins for large population and rising global demand for fishes and fish products. Fishes forms one of the major constituent for human food and provides essential amino acids and fatty acids useful for human body growth and development. Considering its importance, country like India has also launched Blue Revolution in past also named as- Neel Kranti Mission, with an aim to achieve economic prosperity of the country under fisheries sector and contribute towards food and nutritional security through full potential utilization of water resources for fisheries development in a sustainable manner, keeping in view the bio-security and environmental concerns.

The fisheries sector development has multi-dimensional approach to which not only considers fish production and farming but also fish feed production. The sector development focuses on full production potential and enhance productivity substantially from aquaculture and fisheries resources, both inland and marine. Substantially increasing the share of Indian fisheries in the export area would be a key goal as sought by State and Central Government programs under fisheries sector. It will ensure doubling the income of the fishers and fish farmers with inclusive participation of the socio-economically weaker sections and ensure sustainability with environment and biosecurity.

#### 1. Global Scenario

<sup>1</sup>Global fish production has been estimated to be 179 million tons in 2018 with a total value of USD 401 billion. Out of this total production, 156 million tons were used for human consumption, equivalent to an estimated annual supply of 20.5 kg per capita. The remaining 22 million tons were destined for non-food uses, mainly to produce fishmeal and fish oil.

<sup>2</sup>The total quantity of fish produced at the world level is projected to be 196.3 Mt by 2028, an increase of 14% relative to the base period (average of 2016-18) and an additional 24.1 Mt of fish and seafood in absolute terms.

As consumers across the globe are becoming health conscious, they are increasingly inclined towards healthy and natural alternatives over artificial sweeteners. Burgeoning awareness about the benefits of fish and aqua products is providing an impetus to the global fish feed market.

#### 2. Indian Scenario

<sup>3</sup>India is one of the largest fish producing countries in the world and shares 7.58% to the global production. It contributed about 1.24% to India's Gross Value Added (GVA) and 7.28% (2018-19) to the agricultural GVA, fisheries and aquaculture continue to be an important source of food, nutrition, income and livelihood to millions of people. Fisheries sector in India has shown impressive growth with an average annual growth rate of 10.88% during the year from 2014-15 to 2018-19. The fish production in India has registered an average annual growth of 7.53% from 2014-15 to 2018-19 and stood at an all-time high of 137.58 lakh metric tons during 2018-19 (provisional). The export of marine products stood at 13.93 lakh metric tons and valued at Rs 46,589 crores (USD 6.73 billion) during 2018-19 with an impressive average annual growth rate of about 10% in recent years.

#### 3. State Scenario

The fish production in Bihar was found to be 171 million tons in 2016, of which 88 percent was utilized for direct human consumption. The impetus of State Government towards fisheries sector development has given various fruitful results. This resulted into a record-high per capita consumption of 20.3 kg in 2016. It has great importance for State like Bihar in promoting livelihood opportunities and providing necessary proteins and other nutrients for large section of marginalized population.

Bihar has the largest floodplain wetland with an area of 9.41 Lakh Ha which gives an upper hand for the State in terms of developing inland fisheries.<sup>4</sup>The total fish production in Bihar increased from 4.79 lakh tons in 2013-14 to 6.02 lakh tons in 2018-19, registering a compound annual growth rate of 6.22 percent. Fisheries and Aquaculture contributed about 1.5% to the GSVA. The annual per capita fish consumption in the State is 8.82 Kg/Head/Annum against National average of 10 Kg/Head/Annum. The 3rd Agricultural Road Map as approved by State Government for 2017-22 also includes holistic fisheries development of the State. As per the Road Map the fish production target in 2021-22 has been pegged at 8.02 Lakh MT and the State is working on a mission mode to achieve the set target to become a fish surplus State.

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<sup>1</sup>The State of World Fisheries and Aquaculture 2020, FAO

<sup>2</sup>OECD-FAO Agricultural Outlook 2019-2028

<sup>3</sup> nfdb.gov.in

<sup>4</sup> Bihar Economy Survey, 2019-20

In view of it, State Government has targeted to increase fish production in the state and therefore it distributed about 9286.5 lakh fish seeds in 2018-19. The fish farmers have started exporting fish to the tune of 30,000 MT to the neighboring states and Nepal.

<sup>5</sup>There is a need that fisheries entrepreneurs should get exposure to all latest technologies, researches. In this context, Centre for Agriculture and Rural Development jointly with Animal & Fisheries Resources, Government of Bihar is organizing a day long International Seminar on Fisheries Entrepreneurship 2020 at Bihar Agriculture Management & Extension Training Institute.

### **Bihar Potential**

- Largest wetland area which can be converted for fish farming
- High water potential State due to availability of perennial rivers
- Fish feed being distributed by State Govt. to enhance fish productivity in State
- Enterprise promotion being given impetus through various schemes and policies to promote fish farming, fish value chain development, fish meal production, etc. in State
- Farming by most deprived section of community mostly women and landless farmers
- Ensure good source of income during lean period
- High potential to cater the demand of nearby States

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<sup>5</sup><https://www.card.org.in/bhagidari/fisheriesbihar2020/>



## 4. Project Background

The Unit propose to install a modern fish feed mill unit having an installed capacity of 08 MT/day in .....  
The unit will be operating throughout the year.

The capacity of the unit has been arrived at after giving due consideration to the market demand, the capacity of the promoters to procure raw material, and forward linkages of the promoters.

### Current status of the unit:

- a. **Items to be manufactured: Fish Feed**
- b. **Capacity of the plant:** 08 MT/hr.
- c. **Source of power generation/electricity:** Electricity form BSPHCL/SBPDCL, DG Set
- d. **Source of water supply:** Own Borewell
- e. **Connectivity to road/railways:** NH/SH details along with distance
- f. **Mode of transport:** Pickup/Truck/Others
- g. **Market:** Details of local market/other market
- h. **Employment Generation:**20 nos.
- i. **Marketing:**
- j. **Waste disposal:** ETP/STP

## 5. Organization and Promoter Details

### 1. Organizational details

The M/s XYZ is a proprietorship/partnership/private company is associated with fruit trading for about 10 years. The unit was incorporated on ..... as private limited company under Company's Act. The authorized capital of the company is Rs. .... lakh and the paid-up capital is Rs. .... as on .....The details of the unit as per MCA website (only for private/public ltd. companies) are given below:

Company Master Data	
CIN	
Company / LLP Name	
ROC Code	
Registration Number	
Company Category	
Company Sub-Category	
Class of Company	
Authorized Capital(Rs)	
Paid up Capital(Rs)	
Number of Members(Applicable in case of company without Share Capital)	
Date of Incorporation	
Registered Address	
Email Id	
Whether Listed or not	
Date of last AGM	
Date of Balance Sheet	
Company Status(for e-filing)	

Directors/Signatory Details			
DIN/PAN	Name	Begin date	End date

### 2. Promoters' Background

The unit is a proprietorship/partnership/private limited company/ firm and the proprietor/partners/promoters of the firm has experience in trading of.....and is associated processors. He/They has/have identified Fish feed processing as a profitable business seeing its ever-increasing demand in the local market as well market in the neighboring districts and States. Brief profile of the proprietor/partners/promoters is given below:

- a) Mr. ABC
- b) Mrs. XYZ
- c) Mr. DEF

Net-worth: The details of the net-worth of the unit is given below:

Particulars		Rs. In lakh
Movable assets	A	
	B	
	C	

		<b>Subtotal (A)</b>	
Immovable assets	A		
	B		
	C		
		<b>Subtotal (B)</b>	
		<b>Total</b>	

The total net-worth is more than the proposed grant of the unit.

## 6. Project Description and Flow Sheet

Proposed project aims for the setting up of modern mini fish feed mill of 08 MT per day capacity. This unit will be equipped with state of art Grinder, Mixer, Extruder, Drying, Weighing & packing unit.

Most of raw materials can be procured locally, for example, there are many available feed ingredients considered as potential materials for fish feed, including rice bran, maize, wheat bran, soybean cake, peanut dregs, dry grass powder and soon. When choosing fish feed ingredients, there is one point that should be kept in mind: quality is the most important point, so do not accept unsatisfactory batches of ingredients even if offered at low cost due to bad ingredients may cause harmful effect on fish growth.

### 1. Project components

The project will have following components

- Civil Construction of Modern Mini Fish Feed Mill unit 08 tons /day capacity
- Grinding
- Mixing
- Extruding
- Drying
- Automatic Weighing & Packing

### 2. Civil Construction of Modern Mini Fish Feed Mill unit 08 tons /day capacity

The Unit would install a modern fish feed mill unit having an installed capacity of 08 MT/day in ..... Total raw material requirement of the proposed unit, during the peak season of its production, will be about ..... The processing will be done throughout the year.

The capacity of the unit has been arrived at after giving due consideration to the market demand, the capacity of the promoters to procure raw material, and forward linkages of the promoters.

### 3. Grinding, Mixing, Extruding, Drying and Automatic Weighing & Packing

Raw materials need to be crushed for producing fish feed, aiming to get materials suitable for making high quality feed and appropriate to digest for aquatic animals. Grinding would help in improving the uniformity of mixing, which is especially important for those fish with little feed intake.

The efficient mixing process that is the key to high quality fish feed production and blending time is crucial to the composition of fish feed formula. The process of extruding involves changing of physical and chemical property of materials mainly starch dextrinization and protein denaturation under the stewing with high temperature, high pressure and high humidity. After extruding pellets needs to be dried to remove the redundant water content by fish feed dryer via drying process technology. The dried fish feed pellets should be automatically weighed and packed in bags with machine, especially for large capacity feed production unit.

### 4. Location of the Project

The unit is set up in a land area of .....(preferably in 15,000 sq. ft. as illustrative) in ..... The land is located along the two lanes all weather main road. The site is around .... Km from .....

The selection of the location has been done in consideration with the various favorable aspects related with the plant such as:

- Raw material availability
- Connectivity
- Linkages with markets/procurement center
- Availability of infrastructure such as water
- Availability of manpower

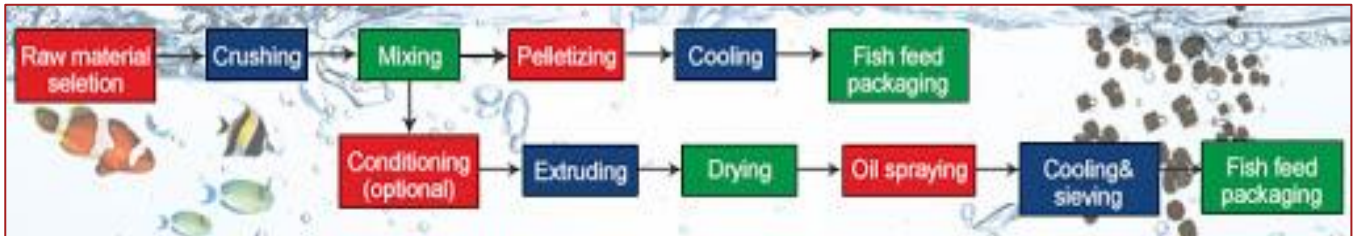
### 5. Raw Material Availability

The fish feed's main components consist of protein, lipids, carbohydrates, vitamins and minerals. Most of raw materials can be procured locally, for example, there are many available feed ingredients considered as potential materials for fish feed, including rice bran, maize, wheat bran, soybean cake, peanut dregs, dry grass

powder and soon. When choosing fish feed ingredients, there is one point that should be kept in mind: quality is the most important point, so do not accept unsatisfactory batches of ingredients even if offered at low cost due to bad ingredients may cause harmful effect on fish growth.

The processing industry has not kept pace with the increase in beekeeping in the state with no large processing unit within the state. There are a handful of processing units in the organized sector with most of the processing happening in the unorganized sector with the main being the processing plant run by .....

### Fish Feed Processes (Illustrative)



## 7. Technology and Process Description

Fish feed requirements are different from animal feed in respect of feed nutrition and its physical characteristics such as- pellet shape, size, density and stability in water. It is; therefore, feed processing technology plays a key role in producing healthy and nutrient fish feed.

### 7.1. Technology

The unit shall use modern technologies such as crushing technology, mixing technology, fish feed conditioning technology and fish feed pelletizing technology.

#### 7.1.1. Crushing Technology

This includes crushing before dosing, which is pre-grinding and post grinding, i.e.,- collocation after grinding raw materials, grinding after ingredients mixing or combination of two. With the purpose of producing high quality fish feed with small particle size increases the surface area of raw materials and making materials moist and less mobile. The crushing equipment generally used includes- fish feed hammer and droplet fish feed crusher. Whereas the fish feed hammer for rough grinding with sieves added during crushing process so as to return coarse grain for further milling, the fish feed crusher is used for fine grinding of cellulose materials, high moisture materials and granular materials.

#### 7.1.2. Mixing Technology

The daily feed consumption requirements of fishes are little and hence it is very necessary to make high quality mixing feed with uniform nutritional ingredients. This uses horizontal type blade mixer and double shaft paddle mixer to blend fish feed raw materials with high productivity. Following points needs to be considered while choosing the mixing equipment- high cost-performance, raw materials needs to be first crushed before mixing, reduced water content and constant application of heat.

#### 7.1.3. Conditioning Technology

Fish feed conditioning is used to gelatinize the starch, denature the protein and soften the raw materials by heat and moisture treatment. Two types of conditioner is generally used- conditioning before pelleting and conditioning after pelleting. The major equipment used for conditioning are- multiplex conditioner, curing tank, extruding conditioner (for before pelleting) and stabilizer (for after pelleting).

#### 7.1.4. Pelleting Technology

Pelleting improves the quality of fish feed and includes tempering and extruding technology. This uses extruding machines which gives fine palatable, good stability in water, easy digestion. There are two types fish feed extrusion machines- dry type fish feed extruder and wet type fish feed extruder. While choosing the type of machines the water content of feed raw materials is taken into consideration.

#### 7.1.5. Drying/ Cooling Technology

For easy storage, it is indispensable to dry or cool the fish feed after pelleting and extruding. The technology generally contains multilayer mesh belt dryer that is specially designed for drying feed pellets. The drying machine can be used to transfer pellets into chamber of heating so as to reduce the water content and lower the temperature of the fish feed. Before final finishing of the feed, the fish feed needs to be cooled after drying.

### 7.2. Process description

The Essential Nutrients Required for Fish Feed Formulation includes-

#### Protein

Protein is a very essential nutrient for fish feed formulation. This is because protein is the main source of energy for fish. Fish need two or three times as much protein as other animals for energy.

#### Minerals

Minerals are another essential nutrient in fish feed formulations. This is a necessary condition for the development of fish bones. Therefore, the production of fish feed must include minerals such as zinc, copper, iodine, iron, manganese and calcium.

## **Vitamin**

Fish are very susceptible to bacteria. So, fish need vitamins to build a strong immune system. It should be noted that the amount of vitamins contained in the fish feed formula should be minimal.

Important processes are described below:

### *7.2.1. Grinding of ingredients*

In a fish feed formulation, the first step is to measure all the necessary ingredients in specified proportions and grind them one by one.

### *7.2.2. Mixing of ingredients*

The next step is to mix grinded ingredients. This is done through a fish feed mixer and after mixing the dry ingredients, the vitamins and minerals are further mixed with the grinded materials.

### *7.2.3. Adding water and oil to mixture*

The oil is warmed, and it is added to the mixture and all the mixture is then mixed for atleast five minutes. Then little water is added and mixed until it forms a mash with the mixture.

### *7.2.4. Process the feed mash in a pellet machine*

The fish feed mixture is put into the fish feed extruder so that it can be processed into pellets. The size of the pellets will depend on the size of the fish that wants to be feed.

### *7.2.5. Dry the Fish Feed Pellets*

After granulated mash is formed, it is then dried in a fish feed dryer to reduce the moisture content. Pellets should be dried at a lower temperature than 60 degrees. This is because high temperatures can destroy micronutrients found in the feed.

### *7.2.6. Cooling the pellets*

The pellets are usually cooled in Counter-flow type feed cooler, where cool air takes away some heat and water. The pellets can be packaged at room temperature. If the pellets are cooled without drying, a large number of small cracks will appear on the surface and extend deep due to rapid cooling and dehydration inside the pellet.

### *7.2.7. Classifying Screener*

After pelleting, drying and cooling, unfinished products should be screened by screening. Powder and debris leach from the bottom of the machine. Sieve out large particles and residues from the top of the machine. Finished materials are packed from the interlayer in the feed column.

## **8. Procurement Strategy of Raw Materials and Other Inputs**

The unit will procure the raw materials locally, for example, there are many available feed ingredients considered as potential materials for fish feed, including rice bran, maize, wheat bran, soybean cake, peanut dregs, dry grass powder and soon., The promoters have existing linkages with farmers of nearby areas to procure the required raw materials for fish feed. They have also developed linkages with farmers in other parts of the state which includes bee keeping area of..... Promoters to begin with will concentrate mainly on the nearby areas of .....(name of location) to procure raw materials for fish feed mill for the unit.

### **8.1. Backward Linkages:**

The promoter has well established backward linkages for its proposed units and it is expected that the raw material can be procured from the local area.

### **8.2. Forward Linkages**

Fish feed has a great demand in aqua industry, especially in State like Bihar where fishery sector is given prime importance for farming and taking it up as key agro business activity. There exist a growing market of aqua feed in the State and also across adjoining States and country and Bihar has the potential to cater the demand of such regions- Nepal, West Bengal, Uttar Pradesh, Jharkhand Assam, Bangladesh. The availability of fish feed processing unit with state of the art technologies are few in region and State and hence concentrated effort needs to be given to build up the forward linkages of processed fish feed.



## 9. Marketing Plan

The unit, shall sale its produce to the local fish rearers, hatcheries centers or other large players within or outside the State. Promoters are also planning to export their produce in near future for that they have export license. The export would be largely made to Nepal for which Bihar is the major source for catering the fish demand.

The promoters have existing tie-ups which will be leveraged for selling the produce. The promoters propose to seek the help of the existing marketing intermediaries to develop the market. However, in the future they intend to develop their own marketing team to ensure direct contact with markets for their products.

### 9.1. Market Segments

The promoters shall target two market segments for marketing of fish feed. These are:

- 1- Fish rearers, hatcheries and breeding centers of the State or outside the State
- 2- Direct exports to nearby countries such as- Nepal and Bangladesh.

### 9.2. Product packing

The promoter would use pellet packaging machine which would be the last step in the feed production line. This would reduce the labour cost and enhance the efficiency of the feed mills. The packaging specification is mentioned below;however, it may change with promoters' requirements.

<b><sup>6</sup>Particulars</b>	<b>Details</b>
Weighing Range	5-50 Kg
Max Packaging weight	100 Kg
Dimension	800*900*1900 mm

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<sup>6</sup> Market Study

## 10. Land Details

### 10.1. Land Details

In order to set up a modern biscuit manufacturing unit of the proposed capacity, a land size of approx. 18 to 20 Decimal would be ideal however this may vary with increase in capacity.

The land proposed for the unit Details of the proposed land is given below:

Sale deed dated 18.10.2016 in the name of M/s XYZ with sale value Rs. 0.00/-

Khata no.	Plot no.	Area	Boundary
<b>Total</b>		<b>19 decimals</b>	

The total land area is ..... decimal and is in the name of the of the proprietor/firm/company. The proposed land of the unit is an industrial land as per CLU dated ..... Character of the land. The cost of the land is Rs. .... lakh/ the proposed land is a leased land for a period of ..... years.

## 11. Project Cost and Means of Finance

Details of the project cost and means of finance are given below:

### 11.1. Project Cost

The Project is estimated to cost Rs. 158.36 lacs. The cost estimates are provided on the basis of quotations received from suppliers and estimates given by chartered engineers. The detailed breakup of the cost of the Project is given below:

Rs in Lacs (Rounded off)

S.No.	Description	Amount
1.	Land	-
2.	Land and Site Development Cost	10.00
3.	Plant Area & Building Development Cost	60.00
4.	Plant and Machinery	33.30
5.	Misc. fixed assets	20.00
6.	Preliminary and Pre-operative Expenses	5.00
7.	Contingency	7.00
8.	Margin Money for Working Capital	23.06
	<b>Total Project Cost</b>	<b>158.36</b>

### 11.2. Site renovation

Promoters propose renovation of the existing site which shall be used for further expansion of the project (if any). Total investment proposed for site renovation is Rs. 10 lakhs. Details of the site renovation plan are annexed to this report.

### 11.3. Civil construction

Promoters propose to invest Rs. 60 lakhs in civil construction as a part of the proposed expansion. Cost of construction on approx 4000 SQFT @ Rs.1500/- per sq.ft.. (Factory building either be RCC or PEB structure so the layout plan and cost may vary project to project same will be captured in an applicant's DPR).

### 11.4. Equipment

The break-up of the estimated cost of major machinery is provided below:

Rs in Lacs

Machinery & Equipment	*Amount
COURSE MILL (500 KG/H)	2.80
PADDLE MIXER MACHINE (150 KG/H)	1.35
FEEDING CONVAIR (600 KG/H)	1.20
SINGLE SCREW EXTRUDER (500 KG/H)	11.40
AIR CONVEYOR (500 KG/H)	1.50
THREE LAYER DRYER	8.90
COOLING CONVAIR (500 KG/H)	1.50
MCC PANEL FOR ELECTRICAL	1.20
INSTALLATION CHARGES	0.60

Machinery & Equipment	*Amount
MISCELLANEOUS ACCESSORIES (A) ELECTRICAL SCALE (B) BAG SCALE MACHINE (C) ANGEL GRINDER (D) Tools' (E) SPARE DIE, CUTTER ETC. (F) MAGNETS	0.85
<b>Packing</b>	<b>2.00</b>
<b>Total</b>	<b>33.30</b>

\*The make and specification of P&M may vary project to project based on the quotations from different suppliers.

\*Note: Standard cost has been taken for estimation. The cost may change as per the market and promoter requirements.

The plant and machines to be procured by the promoters are suitable for the design of the project and balances each of the production stages. The suppliers have prior experience in installing similar type of units. The final prices of the equipment may vary depending on the prevailing tax rate at the time of delivery. Quotation provided by the promoters have been duly verified by ..... team and found to be satisfactory both in terms of cost and technical specification.

#### 11.5. Miscellaneous Fixed Assets / Utilities

The breakup of the estimated cost of the miscellaneous fixed assets and utilities is provided below:

Rs in Lacs

Misc. Fixed Assets/ Utilities	Nos.	Rate/ Unit	*Amount
Computer	3	0.5	1.6
Pick up van	3	4.5	13.4
Other office equipment	LS	5	5.0
Total Misc. Equip			20.0

\*Note: Standard cost has been taken for estimation. The cost may change as per the market and promoter requirements.

#### 11.6. Preliminary & Pre-operative Expenses

The provision towards preliminary & pre-operative expenses includes expenditure towards like salaries & administrative expenses, travel expenses, market development expenses, interest during construction period etc. It is also assumed that the project will be completed over a period of one year. The interest during construction period is capitalized in the project cost.:

#### 11.7. Working Capital Requirement

Rs in Lacs

S. No.	Particular	Stocking Period in Month	1stYr
1	Raw Materials	2.00	66.60
2	Consumable Stores & Packing Material	1.25	0.02
3	Finished Goods	0.50	19.76
4	Receivables	0.25	9.85
5	Expenses for One Month	0.50	0.68
	<b>Total Current Assets</b>		<b>96.91</b>
6	<b>Less: Sundry Creditors</b>	<b>1.00</b>	<b>38.85</b>
7	<b>Working Capital Gap</b>		<b>58.06</b>
8	<b>Total Required Margin</b>		<b>14.51</b>

\*Note: Standard cost has been taken for estimation. The cost may change as per the market and promoter requirements.

The working capital requirement would have been come to around Rs.96.91 lakh in the first year. However, keeping in mind, the nature of the business, the actual working capital requirement is recommended.

### 11.8. Contingencies

The amount is calculated at 5% of project cost excluding cost of land.

### 11.9. Means of Finance

The cost of the project is proposed to be financed through a mix of equity, grant from Govt. of Bihar and term loans.

Rs in Lacs

Source	Share	Amount
Equity*	25%	39.59
Debt**	75%	118.77
<b>Total</b>		<b>158.36</b>

\*- Promoters propose to bring approximately Rs. 39.59 lakhs as their equity contribution. Promoters have the required financial strength to bring an equity capital of this amount.

\*\* - Promoters propose to bring in long term debt to the tune of Rs. 118.77 lakh for financing the project. They also propose to bring in Rs. 14.51 lakh as margin money towards working capital financing.

*Note-1. Govt. of Bihar has recently launched a Bihar Agriculture Investment Promotion Policy (BA-IPP 2020) with capital subsidy of 15% for individual investors, partnership firms, LLP, companies and 25% for Farmer Producer Companies.*

*2. The figures are only tentative and may change depending upon the processing infrastructure capacity and promoter's requirement.*

### 11.10. Business Plan

The business plan of the Company has been prepared considering its business model, which covers the following stages:

- The Company will process raw material for fish feed and further process it and sell it in different pack sizes
- Company will procure the raw material from various sources during season and process the same as when it deems fit
- The existing storage capacity shall be used for storing processed feed
- The infrastructure will be used mainly by the company

The key operating assumptions underlying the business plan of the Company are described below:

- 08 MT/day of processing capacity

### 11.11. Operating Cost Assumptions

#### 11.11.1. Packaging material

The unit shall use glass bottles of different sizes for packing the produce. It is assumed that on an average Rs. 0.24 lakhs would be required to pack the processed feed. The assumptions are based on prevailing industry conditions.

#### 11.11.2. Power Load Requirement

In case of the proposed unit - power load of 150kVA from BSEB has been proposed to be taken. It is estimated to cost Rs.2.52 Lacs per annum at 60% capacity utilization and Rs. 3.64 lacs per annum at 80% capacity utilization. The unit would also be requiring power back-up for the plant hence has proposed to have a D.G. Set of capacity 270 kVA.

### 11.11.3. Employee Cost

The employee cost has been assessed based on an organization structure prepared by the Company which considers the managerial and the support staff required for its proposed level of operations. Total manpower cost per annum is estimated at Rs.10.92 lakhs as detailed out below:

<b><u>Manpower Cost</u></b>			
	<b>Nos.</b>	<b>Sal p.a. Rs</b>	<b>*Total (lacs Rs)</b>
Manager	1	15,000	1.80
Storekeeper	1	10,000	1.20
Accountant	1	10,000	1.20
Operator, fitter, electrician	2	12,000	2.88
Helper/ Skilled worker	2	8,000	1.92
Peon/Security Guard	2	8,000	1.92
<b>Total</b>			<b>10.92</b>

\*Note: Standard cost has been taken for estimation. The cost may change as per the market and promoter requirements.

The manpower planning has been done after analyzing similar units. Proposed manpower will be sufficient to carry out the operation.

### 11.11.4. Cost of insurance and Maintenance

The cost of insurance has been assumed as 1% of cost of plant & machinery, miscellaneous fixed assets and stored raw material. Cost of maintenance has been assumed at 3.5% of the value of fixed assets. The costs are at par with industry standard.

### 11.11.5. Admin & Selling Overheads

Admin & Selling overhead Cost has been assumed @ 3% of revenues

## 11.12. Financial Assumptions

### 11.12.1. Depreciation Rates

Depreciation has been provided on straight-line method, as per the Companies Act, 1956, for book purposes, whereas for tax purposes, written down value method is employed. The rate of depreciation for plant & machinery and miscellaneous fixed assets is taken as 10% for book purposes and 15% for tax purposes.

### 11.12.2. Interest

Interest would be charged to the Project at 9% p.a. for Term Loan and working capital loan. A repayment period of 8 years including a moratorium of 6 months has been considered for financial projections.

## 11.13. Revenue Assumptions

It is assumed that at 100% capacity utilization the unit would generate revenue of Rs.812.44lakhs. The assumption is based on

- 1- Net realization would be 90% of the processed fish feed
- 2- The average selling price of final produce is Rs. 38,000/MT

## 11.14. Capacity Utilization

<b>Year</b>	<b>Capacity utilization</b>
Year I	60%
Year II	65%
Year III	70%
Year IV	75%
Year V Onwards	80%

The project has assumed 60% capacity utilization in the first year, which may be regarded as conservative. The actual capacity utilization may be higher than the projected one.

**(Note: The figures are only tentative and may change depending upon the processing infrastructure capacity and requirements)**

## 12. Financial Analysis

The projected profitability statement, cash flows and balance sheet of the proposed project of M/S ..... Are given below.

### 12.1. Projected Profitability Statement

Rs in lacs

Particulars	1stYr	2nd Yr	3rd Yr	4th Yr	5th Yr
<b>Sales</b>	472.72	531.24	572.66	614.08	654.74
Less- Duty & Taxes	-	-	-	-	-
Net Sales	472.72	531.24	572.66	614.08	654.74
Other Income	-	-	-	-	-
<b>Total</b>	<b>472.72</b>	<b>531.24</b>	<b>572.66</b>	<b>614.08</b>	<b>654.74</b>
<b>Variable Cost</b>					
Raw Materials Consumed	399.60	432.90	466.20	499.50	532.80
Consumables & Packing Materials	0.24	0.26	0.31	0.37	0.43
Wages & Salary	10.92	10.92	12.01	13.21	14.53
Power	2.52	2.78	3.06	3.34	3.64
Repair & Maintenance	0.15	0.17	0.18	0.20	0.22
Other Manufacturing Expenses	0.25	0.30	0.36	0.43	0.52
<b>Cost of Production</b>	<b>413.68</b>	<b>447.33</b>	<b>482.12</b>	<b>517.05</b>	<b>552.14</b>
Add: Opening Stock of Finished Goods	-	19.76	22.04	23.94	25.46
Less: Closing Stock of Finished Goods	19.76	22.04	23.94	25.46	27.36
<b>Cost of Sales</b>	<b>393.92</b>	<b>445.05</b>	<b>480.22</b>	<b>515.53</b>	<b>550.24</b>
<b>Gross Profit :-</b>	<b>78.80</b>	<b>86.19</b>	<b>92.44</b>	<b>98.55</b>	<b>104.50</b>
<b>Selling &amp; Administrative Expenses</b>	<b>2.36</b>	<b>2.66</b>	<b>2.86</b>	<b>3.07</b>	<b>3.27</b>
- Other Selling & Adm. Exps.	2.36	2.66	2.86	3.07	3.27
Profit before Interest & Depreciation	<b>76.44</b>	<b>83.53</b>	<b>89.57</b>	<b>95.48</b>	<b>101.23</b>
Depreciation	15.20	13.43	11.87	10.50	9.30
Profit before Interest & Taxation	<b>61.24</b>	<b>70.11</b>	<b>77.70</b>	<b>84.97</b>	<b>91.93</b>
<b>Interest on</b>					
Term Loan	10.69	9.16	7.64	6.11	4.58
Working Capital	3.15	3.15	3.15	3.15	3.15



Particulars	IstYr	2nd Yr	3rd Yr	4th Yr	5th Yr
<b>Total Interest</b>	<b>13.84</b>	<b>12.31</b>	<b>10.79</b>	<b>9.26</b>	<b>7.73</b>
<b>Profit before Taxation</b>	<b>47.40</b>	<b>57.79</b>	<b>66.92</b>	<b>75.72</b>	<b>84.20</b>
Current Tax	12.33	15.03	17.40	19.69	21.89
Deffered Tax	-	-	-	-	-
<b>Profit after Tax</b>	<b>35.08</b>	<b>42.77</b>	<b>49.52</b>	<b>56.03</b>	<b>62.31</b>
Add: Profit B/f from Previous Year	-	35.08	77.85	127.37	183.40
<b>Balances transfer to Reserve &amp; Surplus</b>	<b>35.08</b>	<b>77.85</b>	<b>127.37</b>	<b>183.40</b>	<b>245.70</b>

## 12.2. Financial Performance indicators

SI No.	Particular	Total	IstYr	2nd Yr	3rd Yr	4th Yr	5th Yr
1	Profit after Taxation	245.70	35.08	42.77	49.52	56.03	62.31
2	Interest on Term Loan	38.18	10.69	9.16	7.64	6.11	4.58
3	Deffered tax Liability	-	-	-	-	-	-
4	Depreciation	60.29	15.20	13.43	11.87	10.50	9.30
5	Preliminary Expenses w/o	-	-	-	-	-	-
	<b>Total</b>	<b>344.17</b>	<b>60.96</b>	<b>65.36</b>	<b>69.03</b>	<b>72.64</b>	<b>76.19</b>
1	Repayment of Term Loan	84.83	16.97	16.97	16.97	16.97	16.97
2	Interest on Term Loan	15.75	3.15	3.15	3.15	3.15	3.15
	<b>Total</b>	<b>100.58</b>	<b>20.12</b>	<b>20.12</b>	<b>20.12</b>	<b>20.12</b>	<b>20.12</b>
	DSCR (Gross)	3.42	3.03	3.25	3.43	3.61	3.79

From the analysis of above indicators, the financial health of the projects seems good. The project is earning good returns and profit margins. The ability of project to re-pay its debt liabilities also looks strong. Moreover, the time series analysis of debt-equity ratio shows that project will be easily able to reduce debt burden from its capital structure.

## 12.3. Projected Cash Flow Statement

SL. NO.	PARTICULAR	IstYr	2nd Yr	3rd Yr	4th Yr	5th Yr
	<b>CASH INFLOW</b>					
1	Profit before Tax	47.40	57.79	66.92	75.72	84.20

<b>SL. NO.</b>	<b>PARTICULAR</b>	<b>1stYr</b>	<b>2nd Yr</b>	<b>3rd Yr</b>	<b>4th Yr</b>	<b>5th Yr</b>
2	Add:- Depreciation	15.20	13.43	11.87	10.50	9.30
3	Preliminary Exp. W.O.	-	-	-	-	-
4	<b>Cash Accruals (1+2+3)</b>	<b>62.60</b>	<b>71.22</b>	<b>78.79</b>	<b>86.22</b>	<b>93.50</b>
5	Receipt of capital subsidy from Bihar Govt.					
6	Increase/(Decrease) in C.L.	38.85	(2.31)	2.78	2.78	2.78
7	Contribution by Shareholder/Promoter	39.59	-	-	-	-
8	Increase in Term Loan from Bank	118.77				
9	Increase in Un. Sec. Loan					
10	Increase in Working Capital	35.00	-	-	-	-
<b>A.Total (Rs.)(4 to 14)</b>		<b>294.80</b>	<b>68.91</b>	<b>81.56</b>	<b>88.99</b>	<b>96.27</b>
<b>CASH OUTFLOW</b>						
1	Preliminary & Preoperative Expenses	-				
2	Increase in Current Asset	116.23	29.05	28.32	47.94	48.30
3	Increase in Cap. Expenditure	135.30				
4	Decrease in Term Loan	16.97	16.97	16.97	16.97	16.97
5	Investment	-	-	-	-	-
6	Dividend Paid	-	-	-	-	-
7	Income Tax Paid	12.33	15.03	17.40	19.69	21.89
<b>B.Total (Rs.)</b>		<b>280.82</b>	<b>61.05</b>	<b>62.68</b>	<b>84.59</b>	<b>87.16</b>
<b>C.Surplus/Deficit from Project (A-B)</b>		<b>13.98</b>	<b>7.86</b>	<b>18.88</b>	<b>4.40</b>	<b>9.11</b>
<b>D. Opening Balance of Cash &amp; Cash Equivalent</b>		-	13.98	21.84	40.72	45.13
<b>E. Closing Balance of Cash &amp; Cash Equivalent(C+D)</b>		<b>13.98</b>	<b>21.84</b>	<b>40.72</b>	<b>45.13</b>	<b>54.24</b>

#### 12.4. Projected Balance Sheet

Particulars	IstYr	2nd Yr	3rd Yr	4th Yr	5th Yr
<b><u>Liabilities</u></b>					
Capital	39.59	39.59	39.59	39.59	39.59
Reserve & Surplus	35.08	77.85	127.37	183.40	245.70
Term Loan	101.80	84.83	67.87	50.90	33.93
Bank Borrowing for Working Capital	35.00	35.00	35.00	35.00	35.00
Sundry Creditors	38.85	36.54	39.31	42.09	44.86
Provision for Taxation	12.33	15.03	17.40	19.69	21.89
<b>Total</b>	<b>262.64</b>	<b>288.83</b>	<b>326.53</b>	<b>370.66</b>	<b>420.98</b>
<b><u>Assets</u></b>					
Gross Block	135.30	135.30	135.30	135.30	135.30
Less- Accumulated Depreciation	15.20	28.62	40.49	50.99	60.29
Net Block	120.11	106.68	94.81	84.31	75.01
<b><u>Current Assets</u></b>					
<b><u>Inventory</u></b>					
Raw Materials	66.60	72.15	77.70	83.25	88.80
Consumables Stores & Packing Materials	0.02	0.03	0.03	0.04	0.04
Closing Stock	19.76	22.04	23.94	25.46	27.36
Receivables	9.85	11.07	11.93	12.79	13.64
<b><u>Other Current Assets</u></b>					
Taxation Advance	12.33	15.03	17.40	19.69	21.89
Other Current Assets	20.00	40.00	60.00	100.00	140.00
Cash & Bank Balances	13.98	21.84	40.72	45.13	54.24
Miscellaneous Expenditure (not w/o)	-	-	-	-	-
<b>Total</b>	<b>262.64</b>	<b>288.83</b>	<b>326.53</b>	<b>370.66</b>	<b>420.98</b>

The unit will be equipped with some of the best and modern plant and machinery available today for fish feed processing. Equipment providers for the unit are reputed firms in their industry. Technology for the unit has been chosen carefully keeping in mind the best practices observed in India.

## 12.5. Techno-commercial viability of the project

- a. Technical viability: Project has proposed to install modern and standard machineries from reputed suppliers for production process. It has proposed proper marketing strategy for the sale of the goods in local as well adjoining districts. The project has already been approved for available term loan from bank and promoters of the unit are aware about the business and will also deploy trained and technical staff for running the unit.
- b. Commercial viability: The financial projections of the unit are positive with standard financial ratios, the list of important financial ratios are given below:

The unit will have following financial benchmarks:

Particulars	1 <sup>st</sup> Year	2 <sup>nd</sup> Year	3 <sup>rd</sup> Year	4 <sup>th</sup> ear	5 <sup>th</sup> ear
Gross Profit Ratio	16.67	16.22	16.14	16.05	15.96
Net Profit Ratio	7.42	8.05	8.65	9.12	9.52
Current Ratio	1.76	2.34	2.88	3.46	4.06
DSCR	3.03	3.25	3.43	3.61	3.79
BEP	0.43	0.36	0.30	0.25	0.21
Project IRR	25%				



**Note: The figures are only tentative and may change depending upon the processing infrastructure capacity and promoter's requirement.**

### 13. Schedule of Implementation

The total time for implementation of project has been estimated at approximately 6 months. The critical time in completion of project is influenced by:

- Obtaining necessary statutory approval
- Resource mobilization
- Civil construction
- Machinery order
- Installation and commissioning of machinery
- Commercial trial runs

Month-wise schedule of implementation is given below:

Month 	1	2	3	4	5	6
Activity 						
Arranging necessary approvals						
Civil construction						
Site renovation						
Order for plant and machine						
Procurement of plant and machinery						
Installation of plant and machinery						
Trial production						
Commercial production						

## 14. Project Impact

As discussed earlier, the project will have various positive impacts such as:

**Infrastructure for value addition:** This unit would aim to integrate and streamline existing value chains in the region by creating centralized infrastructure for value addition and preservation. The unit will thus provide benefits on cost, quality and convenience for sustainable growth in the market driven economy. The unit has been envisaged in a way that it would ensure better returns to all players in each level of value chains ranging from procurement, storage, processing, packaging to distribution of food commodities through vertical integration of functions and horizontal linkages of destinations.

**Reduction of Wastages:** The infrastructure created at the unit along with the integration of backward and forward linkages would lead to more efficient supply chains and reduction of wastages. This would provide higher value realization to all players in the supply chain including the farmers.

**Creation of employment:** The project shall generate employments. It is estimated that the it would generate direct employment of about .... workers and indirect employment of another .....workers. Most of the manpower requirement will be met from the local area.

**Return to farmers:** The unit will be benefiting farmers in the region by increasing the returns for farmers by decreasing wastages and increasing demand of the agricultural produce.

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