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PROJECT REPORT

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PROJECT:

Automatic fish feed plant

PROJECT REPORT
OF

AUTOMATIC FISH FEED PLANT

PURPOSE OF THE DOCUMENT

This particular pre-feasibility is regarding automatic fish feed plant.

The objective of the pre-feasibility report is primarily to facilitate potential entrepreneurs in project identification for investment and in order to serve his objective; the document covers various aspects of the project concept development, start-up, marketing, finance and management.

[We can modify the project capacity and project cost as per your requirement. We can also prepare project report on any subject as per your requirement.]

PROJECT AT GLANCE

1	**Name of Proprietor/Director**	XXXXXXXX	
2	**Firm Name**	XXXXXXXX	
3	**Registered Address**	XXXXXXXX	
4	**Nature of Activity**	XXXXXXXX	
5	**Category of Applicant**	XXXXXXXX	
6	**Location of Unit**	XXXXXXXX	
7	**Cost of Project**	24.17	Rs. In Lakhs
8	**Means of Finance**		
i)	**Own Contribution**	2.42	Rs. In Lakhs
ii)	**Term Loan**	15.75	Rs. In Lakhs
iii)	**Working Capital**	6.00	Rs. In Lakhs
9	**Debt Service Coverage Ratio**	3.09	
10	**Break Even Point**	29%	
11	**Power Requirement**	25	KW
12	**Employment**	11	Persons
13	**Details of Cost of Project & Means of Finance**		

COST OF PROJECT	
	(in Lacs)
PARTICULARS	**Amount**
Land & Building	Owned/Rented
Plant & Machinery	16.00
Furniture & Fixture	1.00
Miscellaneous Assets	0.50
Working capital Required	6.67
Total	**24.17**

MEANS OF FINANCE	
	(in Lacs)
PARTICULARS	**Amount**
Own Contribution @ 10%	2.42
Term Loan @ 90%	15.75
Working Capital (Bank Finance)	6.00
Total	**24.17**

FISH FEED MANUFACTURING PLANT

1. INTRODUCTION

Fish feed is a plant or animal Derived material intended for use in aquariums or ponds by pet fish. In order to maintain the required nutrition of fish, the Fish feed usually contains Macronutrients, Trace elements, and Vitamins. Generally, 80% of fish keepers exclusively feed their fish in the form of flake, pellet, or tablet form which are specially prepared for fish. Pelleted types of feed are mostly used for larger fish or underfeeding species, such as layers and catfishes, and are some of them sink rapidly. Some fish foods also include additives like sex hormones or beta carotene, which improve the color of ornamental fish artificially.

Fish food should preferably be fatty (for energy) and amino acids (building blocks of proteins), and fish food (whether pellets or flakes) should be easily digested. Carnivorous aquatic diets should include plants such as Spirulina. In order to prevent the build-up of intestinal gas, renal failure, and influences (such as swim bladder and dropsy) and avoid aquarium toxins due to excessive ammonia.

In the choice of food ingredients for aqua feeds, three main considerations are :

- Quality – the composition of nutrients and the presence of anti-nutrients (substances that directly influence nutrients and contaminants absorption).
- Quantity – the Quantity of usable ingredients.
- The price of ingredients.

Additionally, feed formulations, feed processing, and storage, handling, and transport are other problems of fish feed management.

2. PRODUCT DESCRIPTION

2.1 PRODUCT USES

Aquaculture feed is one of the farming's least spoken areas, particularly with regard to animal feed. In general, those who hear the word "livestock" think of ordinary farm animals, such as cows, chicken, goats, and horses. The word does, however, include a wide range of species, including fish, crustaceans, mollusks, and algae used in commercial environments. Like all animals, fish and other forms of marine life require a constant stream of nutritious feed in order to grow into viable livestock products. Nutrition also plays a crucial role in encouraging reproduction. The nutrients provided by aquaculture feed include: Like all animals, fish and other types of marine life need a steady flow of food to become viable livestock products. In promoting reproduction, nutrition also plays an important role. Aquaculture nutrients include

- Lipids and fats
- Carbohydrates
- Protein
- Vitamins and minerals

Aquaculture feed comes in the form of extruded bits, or pressure-pelleted feed. Extruded aquaculture feed will float on the surface of the water, whereas pressure-pelleted feed will sink. Due to manufacturing costs, extruded feeds often command higher prices; however, these feeds also offer the advantage of allowing a producer to directly observe the feeding habits of the fish.

2.2 RAW MATERIAL REQUIREMENT

No single feedstuff can supply all of the nutrients and energy required for optimum fish growth. Fish feed needs certain nutrients that allow farmers to maximize growth and increase their livestock farms' income.

The fish feed can be produced with the following ingredients.

- Soybean Meal
- Cottonseed Meal
- Wheat Flour.
- Fish Meal/Animal waste meal
- Mineral Mixture.

Soybean Meal

Dehulled soy meal, which is free from solvents, is prepared after removal by solvent extraction by grinding the flakes. It contains 48% protein and is the most popular source of protein in fish feed. Soya meal has the highly palatable and digestible amino acid profile of every plant protein source.

Cottonseed Meal

By grinding the remaining cake after the oil has been removed, a solvent-extracted cottonseed meal is obtained. Generally, the commodity contains 41% protein but must not contain less than 36% protein. It is highly palatable but deficient in lysine for fish. Cottonseed meal has generally been used in fish feeds at a level of 10–15%, but levels up to 30–35% can be used when the feed is supplemented with lysine. Approximately half the soybean meal in fish feed can be supplemented by cottonseed meal.

Wheat Flour

Wheat is an important energy source for fish, but it's typically more costly than maize. As a result, wheat grain, mainly for its pellet-binding properties, has been sparingly used (2-5 percent) in fish feeds.

Corn Grain

Corn grain has historically been used in catfish feed as a primary source of nutrition. During extrusion, corn increases the expansion of feed pellets, resulting in a floating pellet. The levels of maize in fish feeds have decreased due to recent drastic increases in its price. To ensure proper expansion and floatability of feed pellets, a minimum of 15-20 percent corn is usually included in the feed. The energy digestibility of maize for catfish is improved by cooking during the extrusion process.

Meat and Bone/Blood Meal Blend

Blended goods that are blends of meat and bone meal and blood meal are available for use in fish feed. To offer the desired nutritional characteristics, the two feedstuffs are blended, and the blend will imitate the nutritional profile of menhaden fish meal (at least with regard to lysine) and provides 60-65 percent protein. Blended products are an excellent source of

protein for use in fish feed and are widely used as a supplement for fish meals.

Groundnut cake

It contains 40% crude protein. Using no more than 25 percent in total along with full-fat soybean meal because of the fat content. Other ingredients may also be added, such as wheat offal, vitamins, growth boosters, to make fish feed.

Rice bran

The bran layer and germ of the rice. It is high in fat, which limits its use in fish feeds.

Other components-

DDGS (Dried Distillers Grains), vitamins, hormones for special Purpose packaging material etc. will be required to fix handle and lid.

2.3 MANUFACTURING PROCESS

The main process for floating fish feed contains:

Grinding

Generally, before grinding, combine the raw materials together. The hammer mill is the most popular machine for grinding. The size of the particle directly affects the pellet making quality. Materials are compressed under the high- speed rotation of hammers until they are fed into the crushing chamber. The shattered raw materials are further reduced to particle size or very small parts for further processing due to the high pressure and quick movement of airflow. For your specifications, there are different capacities of hammer mills. The suggested screen sizes are as follows: 0.75mm for 2mm pellets; 1.0mm for 3-5mm pellets; 1.0-1.25mm for bigger pellets.

Mixing

To ensure high-quality nutritious feed, powdery feed materials need to be carefully blended in the blender. In the meantime, micro-ingredients and measures are being applied and mixed.

We supply a single and twin-ribbon feed mixer. It strengthens convection, shearing, and mixing effects and constitutes an integral component of the entire line.

Extrusion

The only well-known way for water-stable slow sinking or floating feed pellets is by extrusion. The general extrusion method takes a short period of time with a high temperature. The material is often subjected to very high pressures at the same time. The difference in pressure inside the extruder and the external atmosphere causes the aquatic feed extrusion.

Drying

Pellet feeding machine pellets must minimize high humidity and temperature. Fish feeding pellets Therefore dryer in the production line should be fitted. A low-temperature dryer, <80°C, and a long drying cycle ensure the fastest and easiest drying process. For the highest drying efficiency, a multi-layer dryer is recommended.

Oil Spraying Process

The oil spraying machine can be used to sprinkle oil over the surface of the fish feed pellets to achieve a better smell and taste that come from the dryer. It sprays atomized oil on the pellet surface at high speeds and the excess oil can be recycled through the filter.

Cooling and bagging

Pellets can be hardened by cooling. Controlling flow cooler is the type of cooling widely used in the pellet industry currently in opposing directions with air direction and product of pellets. The fish feed pellets are placed in bags to be transported and stored further. Pellet packaging machine suitable for weighing and bagging pellets is here to be picked.

3. PROJECT COMPONENTS

6.1 Land /Civil Work

The land required for this manufacturing unit will be approx. around 25,000 square feet.

6.2 Plant & Machinery

- **Intake Hopper**

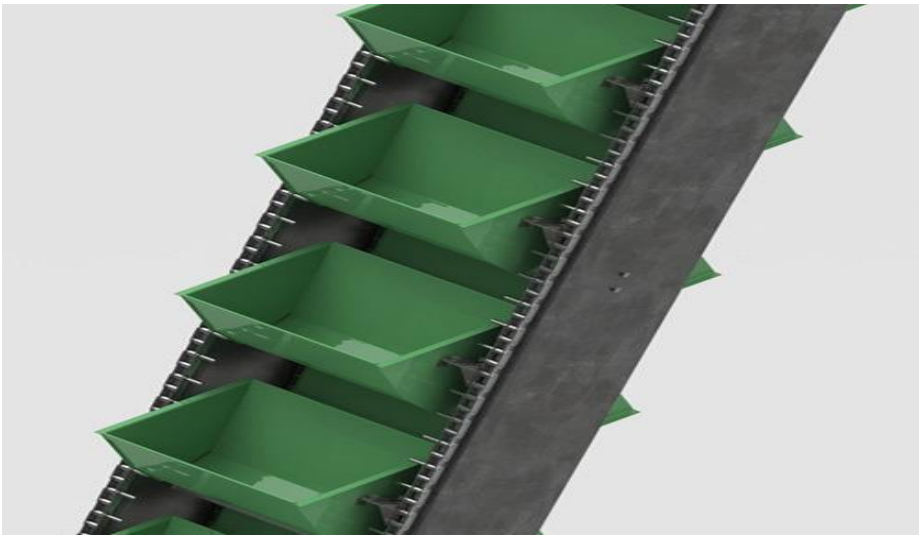
Intake Hopper is used to lift the adequate batches of Raw material. Intake hoppers are used in various plants to receive bulk Raw material unloaded from tilting trucks. They are installed in intake pits i.e. underground. On top of the hopper, there is a frame supporting the grating. The frame is supported by the concrete intake pit.

- **Screw Conveyor**

Screw conveyors in modern equipment that are often used horizontally or at a slight incline as an efficient way to move semi-solid materials.

- **Elevator**

It is used to shift the material between multiple floors.



- **Grinding Bin**

It is fitted on Grinding Machine and used for Store the batch for Grinding Machine.

- **Grizzly Feeder**

The Grizzly vibrating feeder is used extensively in many industries, including metallurgy, mining, miners, building material, chemical, melting, etc., for matching crushing and severing equipment.

- **Hammer mill**

A hammer mill is a mill that, through the repeated blows of little hammers, aims at shaking or crushing material into smaller parts.

- **Air Fan connected with cyclone:** Blow the pressurize air in cyclone.

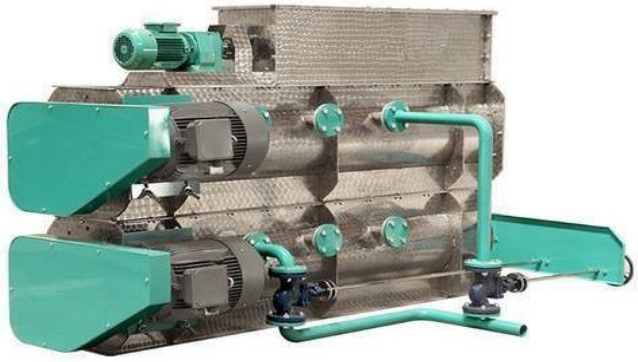
- **Cyclone:** This cyclone is connected with cooler outlet and sucks the Cooled Pallet material

- **Mixer Hopper:** This hopper is used to hold particulate matter or flow-able material of any sort, like dust, gravel, nuts, seeds, etc.

- **Mixer Machine (Paddle Type):** Used for mixing the ingredient.

- **Pallet Hopper:** The Hopper is used for store mixed material.

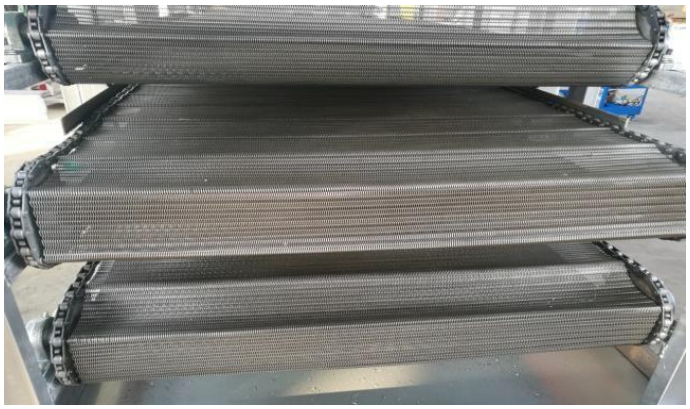
- **Pallet Conditioner:** This machine is used for moisturizing the material with Steam.



- **Extruder Machine:** The floating fish feed pellet machine is used to make floating fish feed.

- **Air Conveyor:** This Air conveyor is used for shifting the product from pallet machine to airlock.

- **Dryer with electric heater:** This is a 5 layer heater used for dry pelleted feed.



- **Collar:** This machine come with electric motor and is used to cool the hot pallets to ambient temperature.

- **Vibratory Screen:** This screen separator is used to separate the fine and over size particles before final packing

- **Packaging machine:** The machine used for filling and sealing of bags as per the

required weight.

- **Boiler:** To produce steam, boilers are used. Energy is released either from the burning of fossil fuels or from waste heat from the process.

4. LICENSE & APPROVALS

Basic registration required in this project:

- Registration at Bureau of Indian standards.
- Trade License from the local authority.
- MSME Udyam online registration.
- GST Registration
- Factory license
- NOC from pollution control board
- NOC from fire safety board

PROJECTED BALANCE SHEET					**(in Lacs)**
PARTICULARS	**1st year**	**2nd year**	**3rd year**	**4th year**	**5th year**
Liabilities					
Capital					
Opening balance		5.21	7.72	10.87	14.15
Add: - Own Capital	2.42				
Add: - Retained Profit	4.79	7.01	9.14	12.28	15.56
Less: - Drawings	2.00	4.50	6.00	9.00	12.00
Closing Balance	**5.21**	**7.72**	**10.87**	**14.15**	**17.71**
Term Loan	14.00	10.50	7.00	3.50	-
Working Capital Limit	6.00	6.00	6.00	6.00	6.00
Sundry Creditors	1.71	2.00	2.31	2.64	2.99
Provisions & Other Liability	0.40	0.48	0.58	0.69	0.83
TOTAL:	**27.32**	**26.70**	**26.75**	**26.98**	**27.53**
Assets					
Fixed Assets (Gross)	17.50	17.50	17.50	17.50	17.50
Gross Dep.	2.58	4.77	6.64	8.23	9.59
Net Fixed Assets	**14.93**	**12.73**	**10.86**	**9.27**	**7.91**
Current Assets					
Sundry Debtors	4.24	5.08	5.84	6.73	7.68
Stock in Hand	4.12	4.78	5.47	6.22	7.01
Cash and Bank	3.03	2.71	2.98	2.96	2.93
Loans & Advances	1.00	1.40	1.60	1.80	2.00
TOTAL:	**27.32**	**26.70**	**26.75**	**26.98**	**27.53**

PROJECTED PROFITABILITY STATEMENT					**(in Lacs)**
PARTICULARS	**1st year**	**2nd year**	**3rd year**	**4th year**	**5th year**
Capacity Utilisation %	**45%**	**50%**	**55%**	**60%**	**65%**
SALES					
Gross Sale					
Fish Feed	84.83	101.66	116.80	134.63	153.66
Total	**84.83**	**101.66**	**116.80**	**134.63**	**153.66**
COST OF SALES					
Raw Material Consumed	51.30	60.00	69.30	79.20	89.70
Electricity Expenses	2.70	3.30	3.63	3.96	4.29
Depreciation	2.58	2.19	1.87	1.59	1.36
Wages & labour	9.36	10.30	11.33	12.46	13.70
Repair & maintenance	2.97	3.56	4.09	4.71	5.38
Consumables	2.12	2.54	2.92	3.37	3.84
Packaging	1.27	1.52	1.75	2.02	2.30
Cost of Production	72.30	83.41	94.88	107.31	120.58
Add: Opening Stock	-	2.41	2.78	3.16	3.58
Less: Closing Stock	2.41	2.78	3.16	3.58	4.02
Cost of Sales	69.89	83.04	94.50	106.89	120.13
GROSS PROFIT	**14.94**	**18.62**	**22.29**	**27.73**	**33.52**
Gross Profit Ratio	**17.61%**	**18.31%**	**19.09%**	**20.60%**	**21.82%**
Salary to Staff	3.12	3.59	4.13	4.75	5.46
Interest on Term Loan	1.55	1.36	0.98	0.59	0.21
Interest on working Capital	0.66	0.66	0.66	0.66	0.66
Rent	3.00	3.30	3.63	3.99	4.39
Selling & Administrative Exp.	1.70	2.03	2.34	2.69	3.07
TOTAL	**10.02**	**10.94**	**11.73**	**12.68**	**13.79**
NET PROFIT	4.91	7.67	10.56	15.05	19.73
Taxation	0.12	0.66	1.42	2.76	4.17
PROFIT (After Tax)	4.79	7.01	9.14	12.28	15.56
Net Profit Ratio	**5.65%**	**6.90%**	**7.83%**	**9.12%**	**10.13%**

PROJECTED CASH FLOW STATEMENT					**(in Lacs)**
PARTICULARS	**1st year**	**2nd year**	**3rd year**	**4th year**	**5th year**
SOURCES OF FUND					
Own Margin	2.42				
Net Profit	4.91	7.67	10.56	15.05	19.73
Depreciation & Exp. W/off	2.58	2.19	1.87	1.59	1.36
Increase in Cash Credit	6.00	-	-	-	-
Increase In Term Loan	15.75	-	-	-	-
Increase in Creditors	1.71	0.29	0.31	0.33	0.35
Increase in Provisions & Oth liabilities	0.40	0.08	0.10	0.12	0.14
	-				
TOTAL:	**33.77**	**10.24**	**12.84**	**17.09**	**21.58**
APPLICATION OF FUND					
Increase in Fixed Assets	17.50				
Increase in Stock	4.12	0.66	0.69	0.74	0.79
Increase in Debtors	4.24	0.84	0.76	0.89	0.95
Repayment of Term Loan	1.75	3.50	3.50	3.50	3.50
Loans & Advances	1.00	0.40	0.20	0.20	0.20
Drawings	2.00	4.50	6.00	9.00	12.00
Taxation	0.12	0.66	1.42	2.76	4.17
TOTAL:	**30.73**	**10.56**	**12.57**	**17.10**	**21.61**
Opening Cash & Bank Balance	-	3.03	2.71	2.98	2.96
Add : Surplus	3.03	-0.33	0.27	-0.01	-0.04
Closing Cash & Bank Balance	**3.03**	**2.71**	**2.98**	**2.96**	**2.93**

CALCULATION OF D.S.C.R.

PARTICULARS	1st year	2nd year	3rd year	4th year	5th year
CASH ACCRUALS	7.37	9.21	11.01	13.88	16.92
Interest on Term Loan	1.55	1.36	0.98	0.59	0.21
Total	8.92	10.57	11.99	14.47	17.13
REPAYMENT					
Instalment of Term Loan	1.75	3.50	3.50	3.50	3.50
Interest on Term Loan	1.55	1.36	0.98	0.59	0.21
Total	3.30	4.86	4.48	4.09	3.71
DEBT SERVICE COVERAGE RATIO	**2.70**	**2.17**	**2.68**	**3.53**	**4.62**
AVERAGE D.S.C.R.	**3.09**				

REPAYMENT SCHEDULE OF TERM LOAN							
					Interest		11.00%
Year	**Particulars**	**Amount**	**Addition**	**Total**	**Interest**	**Repayment**	**Closing Balance**
1st	Opening Balance						
	1st month	-	15.75	15.75	-	-	15.75
	2nd month	15.75	-	15.75	0.14	-	15.75
	3rd month	15.75	-	15.75	0.14	-	15.75
	4th month	15.75	-	15.75	0.14		15.75
	5th month	15.75	-	15.75	0.14		15.75
	6th month	15.75	-	15.75	0.14		15.75
	7th month	15.75	-	15.75	0.14	0.29	15.46
	8th month	15.46	-	15.46	0.14	0.29	15.17
	9th month	15.17	-	15.17	0.14	0.29	14.88
	10th month	14.88	-	14.88	0.14	0.29	14.58
	11th month	14.58	-	14.58	0.13	0.29	14.29
	12th month	14.29	-	14.29	0.13	0.29	14.00
					1.55	**1.75**	
2nd	Opening Balance						
	1st month	14.00	-	14.00	0.13	0.29	13.71
	2nd month	13.71	-	13.71	0.13	0.29	13.42
	3rd month	13.42	-	13.42	0.12	0.29	13.13
	4th month	13.13	-	13.13	0.12	0.29	12.83
	5th month	12.83	-	12.83	0.12	0.29	12.54
	6th month	12.54	-	12.54	0.11	0.29	12.25
	7th month	12.25	-	12.25	0.11	0.29	11.96
	8th month	11.96	-	11.96	0.11	0.29	11.67
	9th month	11.67	-	11.67	0.11	0.29	11.38
	10th month	11.38	-	11.38	0.10	0.29	11.08
	11th month	11.08	-	11.08	0.10	0.29	10.79
	12th month	10.79	-	10.79	0.10	0.29	10.50
					1.36	**3.50**	
3rd	Opening Balance						
	1st month	10.50	-	10.50	0.10	0.29	10.21
	2nd month	10.21	-	10.21	0.09	0.29	9.92
	3rd month	9.92	-	9.92	0.09	0.29	9.63
	4th month	9.63	-	9.63	0.09	0.29	9.33
	5th month	9.33	-	9.33	0.09	0.29	9.04
	6th month	9.04	-	9.04	0.08	0.29	8.75
	7th month	8.75	-	8.75	0.08	0.29	8.46
	8th month	8.46	-	8.46	0.08	0.29	8.17
	9th month	8.17	-	8.17	0.07	0.29	7.88
	10th month	7.88	-	7.88	0.07	0.29	7.58

	11th month	7.58	-	7.58	0.07	0.29	7.29
	12th month	7.29	-	7.29	0.07	0.29	7.00
					0.98	**3.50**	
4th	Opening Balance						
	1st month	7.00	-	7.00	0.06	0.29	6.71
	2nd month	6.71	-	6.71	0.06	0.29	6.42
	3rd month	6.42	-	6.42	0.06	0.29	6.13
	4th month	6.13	-	6.13	0.06	0.29	5.83
	5th month	5.83	-	5.83	0.05	0.29	5.54
	6th month	5.54	-	5.54	0.05	0.29	5.25
	7th month	5.25	-	5.25	0.05	0.29	4.96
	8th month	4.96	-	4.96	0.05	0.29	4.67
	9th month	4.67	-	4.67	0.04	0.29	4.38
	10th month	4.38	-	4.38	0.04	0.29	4.08
	11th month	4.08	-	4.08	0.04	0.29	3.79
	12th month	3.79	-	3.79	0.03	0.29	3.50
					0.59	**3.50**	
5th	Opening Balance						
	1st month	3.50	-	3.50	0.03	0.29	3.21
	2nd month	3.21	-	3.21	0.03	0.29	2.92
	3rd month	2.92	-	2.92	0.03	0.29	2.63
	4th month	2.63	-	2.63	0.02	0.29	2.33
	5th month	2.33	-	2.33	0.02	0.29	2.04
	6th month	2.04	-	2.04	0.02	0.29	1.75
	7th month	1.75	-	1.75	0.02	0.29	1.46
	8th month	1.46	-	1.46	0.01	0.29	1.17
	9th month	1.17	-	1.17	0.01	0.29	0.88
	10th month	0.88	-	0.88	0.01	0.29	0.58
	11th month	0.58	-	0.58	0.01	0.29	0.29
	12th month	0.29	-	0.29	0.00	0.29	-
					0.21	**3.50**	
DOOR TO DOOR		60	MONTHS				
MORATORIUM PERIOD		6	MONTHS				
REPAYMENT PERIOD		54	MONTHS				

1-CONNECT
UTTAR PRADESH MSME

DISCLAIMER

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