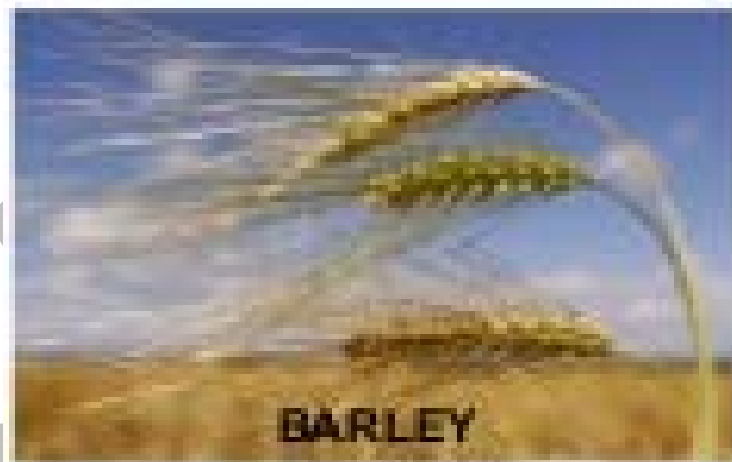


**DRAFT PROJECT REPORT(DPR) FOR ESTABLISHMENT OF  
PROCESSING UNIT FOR EXTRACTING MALT FROM BARLEY IN  
RAJASTHAN**



## **ABBREVIATIONS**

- DPR – DRAFT PROJECT REPORT
- NCDC – NATIONAL COOPERATIVE DEVELOPMENT CORPORATION
- CAGR – COMPOUND ANNUAL GROWTH RATE
- CSISAC – CENTRAL SECTOR INTEGRATED SCHEME FOR AGRICULTURE & COOPERATION
- PFA – PREVENTION OF FOOD ADULTERATION ACT
- FSSA – FOOD SAFETY AND STANDARDS ACT
- FSSAI – FOOD SAFETY AND STANDARDS AUTHORITY OF INDIA
- PSU – PUBLIC SECTOR UNDERTAKING
- NGO – NON GOVERNMENT ORGANISATION
- SHG – SELF HELP GROUP
- CFTRI – CENTRAL FOOD TECHNOLOGICAL RESEARCH INSTITUTE

## **1. Project Details**

Establishment of processing unit for extraction of malt of 30,000MT per year through State Govt. by ABC Cooperative Malt Processing Society Ltd., Rajasthan.

## **2. Introduction**

Barley is one of the cultivated cereal grain and currently rank fourth in acreage crop production worldwide, after wheat, rice and maize. It is a major source of food for large population of cool and semi-arid area of the world, where wheat and other cereals are less adapted. It is a winter season (rabbi) cereal crop grown mainly in Uttar Pradesh, Rajasthan, Bihar, Madhya Pradesh, Punjab and Haryana. In India, area under barley is 7.7 lakh hectares and production is 4.72 lakh tones. Barley is an annual grass that stands 60-120cm. The depth of the roots depends on the condition, texture, and structure of soil, as well as on the temperature.

## **3. Objective:**

- a. Ensure remunerative price to the farmers of the catchment area in respect of their agri produce i.e. barley through increased demand by the cooperative malt processing unit.
- b. Increase in income by value addition of the agri produce.
- c. Create direct and indirect employment in the area of operation.

## **4. Industry Outlook and Market Potential**

Malt is a product prepared from grains through a malting process, which involves partial germination, to modify the grains' natural food substances. Barley is generally

used to prepare malt, while rice wheat, corn and rye are used less frequently. The principle use of malt is in brewing beer. Malt is also used for preparation of whiskey and other beverages. Its wide usage in alcohols, beverages and food products makes it an important product in the food and beverage industry. It is also used to make confections such as malted shakes, malt vinegar, flavoured drinks such as Horlicks, and Milo, and some baked goods, such as bagels, malt loaf, and rich tea. Malted barley is an ingredient in blended flours specifically used in the manufacture of yeast breads and other baked goods.

The end users of Malt and Malt Extracts are as follows:

- ♣ Breweries - for beer production
- ♣ Distilleries - for the manufacture of premium quality whisky
- ♣ Food – Malted Milk Foods, Bakery, Biscuits, Confectionery, Chocolate Powder, Cornflakes, Immitation Coffee, Baby food, etc.
- ♣ Pharmaceuticals –Tonics, Health foods, Slim diets
- ♣ Others - Pet foods, Medium for bacteria cultivation.

The Global beer market is expected to reach USD 758 billion by 2023 registering a CAGR of about 6.2% during 2018-20. Indian beer market is expected to grow to 6500 million liters) per year by the year 2020. Barley malt demand will go up to 20 lakh tons from 14.25 lakh tons. If we assume 20 % of additional demand will be met with grain based alcohol, market for malt will go up by 40000 tons by 2025. This represents additional demand of 25000 tons per year. The domestic demand for Malt and Malt Extract is poised for growth because of growth of end user industry. The major portion of malt consumption is expected from the breweries and there would also be requirement for better quality malt as a number of foreign companies have joint ventures in India now. According to the experts, the industry is expected to maintain a growth rate of 15-20% per annum for the next ten years. The food and pharma industry (malt extract users like cornflake manufacturers, health foods etc.) is also poised for growth due to a small production at present, and this is likely to grow

at 10% per annum and a moderate growth rate for 5% of the remaining end user segments is expected.

### Information of the Cooperative Society

Details of Members of the society

|        |      |
|--------|------|
| Male   | 290  |
| Female | 70   |
| Total  | 360* |

Including Gen- 180, SC 120, ST 60

Financials of the society

It is a new society. The available funds are as follows:

Share capital fund Rs.360 lakhs

### 5. Availability of Raw Material

Barley is the main raw material required for production of Malt. Barley is available in abundant quantity in the Region and the adjoining areas of Rajasthan and Haryana.

#### Production data of Barley in Rajasthan

|  | Average( last 5 yrs)<br>Area (inHect.) Under<br>cultivation | Average(5 yrs)<br>Production<br>(ton) | Average(5<br>yrs) Yied<br>Kg /Hect |
|--|---|---------------------------------------|------------------------------------|
| <b>All Rajasthan<br/>(Actual)</b>            | <b>313301</b>   | <b>917220</b>                         | <b>2928</b>                        |
| <b>All Rajasthan<br/>(Estimates 2017-18)</b> | <b>281161</b>   | <b>909622</b>                         | <b>3235</b>                        |
| <b>Region (Actual)</b>                       | <b>58738</b>  | <b>169489</b>                         | <b>2886</b>                        |

Sources: Agricultural Statistical at a glance 2015-16 by Commissionerate of Agriculture, Rajasthan.

The MSP of Barley was 1225 per qt. in 2015-16 and average market price was Rs.1236 per Quintal.

Grain size is an important descriptive based on the physiology of the grain. For thousands of years, when grain was used specifically for human consumption, the grain was selected based on size. Within the last century, barley breeders have continued to target large grain cultivars in association with improved yield and grain quality attribute. Industry standards on large grain are based on the amount of grain > 2.5mm. Smaller grain generally has lower starch and protein levels, thus reducing the extract/feed potential. However, excessively large grain could impact on malt quality particularly on the rate of water hydration and modification during malting.

Barley grain is typically pearled to remove the hull and bran layer before being consumed or further processed. In general, malting barley cultivars can be classified as soft, whereas non-malting or feed cultivars are classified as hard . Hardness has also been associated with the level of modification of malt, which would imply that grain components within the endosperm directly affect modification. Milling energy (ME) has been used as a measure of barley grain hardness.

A pure lot of an acceptable variety fully mature, free from frost damage , germination of 95% or higher(3 days test) ,moisture content of 13.5% maximum ,less than 5% peeled and broken kernels , free from heat damage , free of insects, admixtures, ergot, treated seeds, smut and odors, not artificially dried, plump kernels of uniform size , free from residue.

## **6. Capacity of the Project**

The capacity of the Malting Unit is as follows:

Malting Unit: 30,000 MT/year

This can be expended later on as per the requirements

## 7. MANUFACTURING PROCESS:

Processing of Malt is the product created through controlled germination and drying (or kilning) of barley. Malt production is a natural biological process during which barley kernels are partially sprouted resulting in the modification of the barley endosperm. This modification involves the breakdown of the cell wall components, the partial breakdown of proteins, and the generation of the enzymes necessary for converting starch into sugars during brewing. In bio-chemical terms: It disintegrates the envelopes of the small nucleus containing starch chains; it produces enzymes (diastase), which will remain inside the germinated grains. To gain an understanding of some of the dust management challenges in the malting industry it is necessary to have basic understanding of the malt manufacturing process. The malt manufacturing consists of three distinct processes, barley storage and handling, malt processing and malt storage/handling each of which can be illustrated as:

- ♣ Barley receiving
- ♣ Barley cleaning
- ♣ Barley grading
- ♣ Barley storage
- ♣ Cleaned barley transfer to Malt Processing

**Malt Processing:** The processing cycle is completed in approximately 7 days. Process of production of Malt Duration Conditions & Effects the output. Impurities are eliminated as well as broken Grain placed in water to encourage germination; Embryo awakes within the kernel; Humidity of the grain increase from 12-15% up to 44- 46% in 2 days. 4 to 5 Days Dampened grain is allowed to sprout is in contact with cool moistened air; Internal chemical transformations within the grain; “Green Malt” is treated with heat / 85o -115oC. Germination process is stopped and humidity decreased down to around 4-5% 24-48 hours Approximately 120 to 130 kg of barley grains are necessary to obtain 100 kg of malt (depending upon grain quality and purity). The average ratio used is 1,267. Processing of Malt Extracts the barley malt

is tested for extract content, extract colour, protein content, water content, diastatic powder and grain size.

Barley malt is tipped and conveyed to Silos. Before entering the mills the grain passes through a cleaner and destoner. Grain is crushed in a roller mill to produce grist. Grist is mixed with water and heated. For the best extraction, the mash is held for fixed times, known as rests at a series of specified temperatures. The malt own enzymes help to convert insoluble starches and proteins to soluble sugars, which dissolve in water to form wort. After extraction, the wort is separated from husks and residues known as “spent grains”. Separation is carried out in the lauter by a natural process using the husks as a filter. The wort, consisting of 5-20% solids, is evaporated under vacuum to form liquid malt extract, containing around 80% solids. By vacuum evaporation, keeping things Cool Atmospheric Dryers, Vacuum Dryers and Different Dryers for Different Extracts and Agglomeration are applied. Liquid malt extract is stored in silos before processing or for sale to industrial customers.

## 8. MANPOWER REQUIREMENT :

The Unit requires 30 employees as detailed below:

| Sr. | Designation          | SALARY | Salary ₹      | Number of Employees |           |           |           |           |
|-----|----------------------|--------|---------------|---------------------|-----------|-----------|-----------|-----------|
|     |                      |        |               | PER Month           | Year-1    | Year-2    | Year-3    | Year-4    |
|     | <b>Working Staff</b> |        |               |                     |           |           |           |           |
| 1   | Production Manager   | 25000  | 75000         | 3                   | 3         | 3         | 3         | 3         |
| 2   | Operators            | 15000  | 75000         | 5                   | 5         | 5         | 5         | 5         |
| 3   | Helpers              | 12000  | 180000        | 15                  | 15        | 15        | 15        | 15        |
|     | Sub Total            |        | <b>330000</b> | <b>23</b>           | <b>23</b> | <b>23</b> | <b>23</b> | <b>23</b> |
| 1   | <b>Fixed Staff:</b>  |        |               |                     |           |           |           |           |
| 2   | Admin Manager        | 20000  | 20000         | 1                   | 1         | 1         | 1         | 1         |
| 3   | Accounts/Assistant   | 15000  | 45000         | 3                   | 3         | 3         | 3         | 3         |
|     | Office Boy           | 10000  | 30000         | 3                   | 3         | 3         | 3         | 3         |
|     | <i>sub-total</i>     |        | <b>95000</b>  | <b>7</b>            | <b>7</b>  | <b>7</b>  | <b>7</b>  | <b>7</b>  |
|     | <b>Total</b>         |        | <b>425000</b> | <b>30</b>           | <b>30</b> | <b>30</b> | <b>30</b> | <b>30</b> |



## 9. IMPLEMENTATION SCHEDULE:

The project can be implemented in 10 months' time as detailed below:

| Sr. No. | Activity  | Time Required |
|---------|---|---------------|
| 1       | Acquisition of premises                                     | 2.00          |
| 2       | Construction (if applicable)                                | 3.00          |
| 3       | Procurement & installation of Plant & Machinery             | 3.00          |
| 4       | Arrangement of Finance                                      | 1.00          |
| 5       | Recruitment of required manpower                            | 1.00          |
|         | Total time required ( <i>some activities may also run</i> ) | <b>10.00</b>  |

## 10. COST OF PROJECT:

The project shall cost ₹ 4267.37 lacs as detailed below:

| Sr. No. | Particulars                               | ₹ in Lacs      |
|---------|---|----------------|
| 1       | Land & site development                   | 250.00         |
| 2       | Building & Civil Works                    | 1028.62        |
| 3       | Plant & Machinery                         | 2210.00        |
| 4       | Furniture, other Misc. Equipments         | 239.64         |
| 5       | Pre-operative expenses                    | 50.00          |
| 6       | Provision for Contingencies @5% on 2 to 4 | 173.91         |
| 6       | Margin for Working Capital                | 315.20         |
|         | <b>Total</b>                              | <b>4267.37</b> |

## 11. MEANS OF FINANCE:

|   | Particulars                       | ₹ in Lacs      |
|---|-----------------------------------|----------------|
| 1 | Members contribution (30.36%)     | 360.00         |
| 2 | Term Loan from NCDC (54.64%)      | 3053.90        |
| 3 | Subsidy under CSISAC scheme (20%) | 853.47         |
|   | <b>Total (100%)</b>               | <b>4267.37</b> |

## 12. WORKING CAPITAL CALCULATION:

The project requires working capital of Rs.810 lacs as detailed below:

**(Rs. in lakhs)**

| ITEMS                 | HOLDING |         |
|-----------------------|---------|---------|
|                       | PERIOD  |         |
|                       | IN DAYS | YEAR I  |
| RAW MATERIAL CONSUMED | 120     | 600.00  |
| PACKING MATERIAL      | 30      | 100.00  |
| WORK IN PROGRESS      | 15      | 100.00  |
| FINISHED GOODS        | 30      | 350.00  |
| DEBTORS               | 30      | 250.00  |
| TOTAL                 |         | 1400.00 |
| Less: Creditors       | 30      | 139.20  |
| Total                 |         | 1260.80 |
| MARGIN(%)             | 25%     | 315.20  |

## 13. LIST OF MACHINERY REQUIRED:

The total cost of the plant and machinery is Rs. 2210 Lakhs.

### A. IMPORTED

|                            |        |
|----------------------------|--------|
| STEEPING PLANT             | 440.00 |
| GERMINATION PLANT          | 575.00 |
| KILNING PLANT              | 325.00 |
| CONVEYING/ELEVATING SYSTEM | 150.00 |
| PACKING/FREIGHT            | 110.00 |
| DUTIES - L C CHARGES       | 70.00  |
| CLEARING & TRANSPORT       | 35.00  |

### B. INDEGENOUS

|                             |        |
|-----------------------------|--------|
| BARLEY PRE CLEANING/GRADING | 140.00 |
| ELECTRICALS                 | 170.00 |
| STRUCTURALS                 | 80.00  |
| ERECTION                    | 115.00 |

**TOTAL 2210.00**

All the machines and equipments are available from local manufacturers. The entrepreneur needs to ensure proper selection of product mix and proper type of machines and tooling to have modern and flexible designs. It may be worthwhile to look at reconditioned imported machines, dies and tooling.

#### 14. BREAKEVEN ANALYSIS:

The project shall reach cash break-even at 22.36 % of projected capacity

#### **BREAK EVEN ANALYSIS @ 95% CAPACITY UTILISATION**

(Rs. In Lakh)

| SL.N<br>O | PARTICULARS                               | AT<br>OPTIMUM<br>CAPACITY<br>UTILISATIO<br>N | 5%<br>DECREASE<br>IN SALES<br>REALISATI<br>ON | 5%<br>INCREASE<br>IN RAW<br>MATERIAL<br>COST |
|-----------|---|--|---|--|
| A.        | SALES REALISATION                         | 4620.00                                      | 4389.00                                       | 4620.00                                      |
| B.        | <b>VARIABLE COST OF PRODUCTION</b>        |  |   |  |
|           | RAW MATERIAL COST                         | 3018.75                                      | 3018.75                                       | 3169.68                                      |
|           | POWER COST                                | 24.48  | 24.48   | 24.48  |
|           | PACKING MATERIAL COST                     | 6.00   | 6.00  | 6.00   |
|           | LABOUR WAGES                              | 3.30   | 3.30  | 3.30   |
|           | STORES & SPARES                           | 1.50   | 1.50  | 1.50   |
|           | SELLING & DISTRIBUTION EXPENSES           | 5.00   | 5.00  | 5.00   |
|           | REPAIRS AND MAINTENANCE<br>(MACHINES)     | 2.00   | 2.00  | 2.00   |
|           | INTEREST ON WORKING CAPITAL               | 113.40                                       | 113.40  | 113.40                                       |
|           | <b>TOTAL</b>                              | <b>3174.43</b>                               | <b>3174.43</b>                                | <b>3325.36</b>                               |
| C.        | <b>FIXED COST OF PRODUCTION</b>           |  |   |  |
|           | SALARIES                                  | 11.40  | 11.40   | 11.40  |
|           | POWER COST (HUMIDIFICATION +<br>LIGHTING) | 4.32   | 4.32  | 4.32   |
|           | ADMIN.EXPENSES                            | 1.00   | 1.00  | 1.00   |
|           | INSURANCE                                 | 5.00   | 5.00  | 5.00   |
|           | INTEREST ON TERM LOAN                     | 301.49                                       | 301.49  | 301.49                                       |
|           | DEPRECIATION                              | 435.81                                       | 435.81  | 435.81                                       |
|           | <b>TOTAL</b>                              | <b>759.02</b>                                | <b>759.02</b>                                 | <b>759.02</b>                                |
| D.        | CONTRIBUTION                              | 1445.57                                      | 1214.57                                       | 1294.63                                      |
| E.        | BREAK EVEN POINT %                        | 52.51  | 62.49   | 58.63  |
| F.        | CASH BREAK EVEN POINT %                   | 22.36  | 26.61   | 24.97  |

## 15. Cost of Building & Civil Work

(Rs. In Lakh)

| S.No         | Particulars  | Area (Sq.Mtr)  | Estimated cost |
|--------------|--|----------------|----------------|
| 1            | Main factory building including false ceiling (Precoated sheet roof and RCC columns with brick masonry wals duly plastered with steel window and doors)  | 3500           | 670.00         |
| 2            | Barley Godown with RCC structure & GI sheet roofing  | 506.57         | 41.03          |
| 3            | Pacaging Unit with RCC structure & GI sheet roofing  | 215.39         | 17.45          |
| 4            | Malt Storage with RCC structure & GI sheet roofing with false ceiling  | 749.32         | 70.21          |
| 5            | Administrative Building with RCC structure and RCC Slab including panel room, compressor room, workshop, store & toilets etc                             | 1575.27        | 149.22         |
| 6            | Miscellaneous civil works towards water reservoir, water supply, drainage & harvesting, construction of roads, compound wall and fire hydrant system etc |                | 61.75          |
| 7            | Architect fees @2% of S.No. 1 to 5   |                | 18.96          |
| <b>TOTAL</b> |  | <b>6546.55</b> | <b>1028.62</b> |

## 16. COST OF MISCELLANEOUS FIXED ASSETS

|              |   | (Rs. In Lakh)        |
|--------------|---|----------------------|
| S.No         | Particulars   | Total estimated cost |
| 1            | False ceiling, underdeck insulation and square ducting for main factory building                | 20.00                |
| 2            | Electrification including transformer & its accessories, panels, cables, earthing, lighting etc | 120.00               |
| 3            | Compressor, Air drier, Air receiver & filters   | 12.00                |
| 4            | Pipeline material and work for entire factory building from compressor                          | 22.00                |
| 5            | Testing lab equipment   | 15.00                |
| 6            | Workshop equipment  | 2.42                 |
| 7            | Fire fighting equipment & fire hydrant system   | 10.00                |
| 8            | Erection tools & equipments   | 1.00                 |
| 9            | Pallet truck (2500 Kg capacity with 1150mm fork length)   | 0.90                 |
| 10           | Electronic weighing scales  | 1.32                 |
| 11           | Air conditioning for testing lab  | 12                   |
| 12           | Stabiliser ( 2 X 225 KVA)   | 8.00                 |
| 13           | Office furnitures and computers   | 10.00                |
| 14           | Other Accessories   | 5.00                 |
| <b>TOTAL</b> |   | <b>239.64</b>        |

**17. Depreciation schedule (WDV method) after implementation of proposed project**

(Rs. in lakh)

| <b>PARTICULARS</b>  | <b>FACTORY BUILDING<br/>(inclusive of contingencies)</b> | <b>NON-FACTORY BUILDING<br/>(inclusive of contingencies)</b> | <b>PRE-OPERATIVE EXPENSES</b> | <b>PLANT &amp; MACHINERY<br/>(inclusive of contingencies)</b> | <b>MISC.FIXED ASSETS<br/>(inclusive of contingencies)</b> | <b>TOTAL</b> |
|---|--|--|-------------------------------|---|---|--------------|
| Total fixed assets excluding land & Dev. after implementation of proposed project | 703.50   | 376.55   | 50.00                         | 2320.50   | 251.62  | 3702.17      |
| <b>Depreciation rate %</b>  | <b>10</b>  | <b>5</b>   | <b>10</b>                     | <b>15</b>   | <b>10</b>   |              |
| 2 <sup>nd</sup> year  | 35.18  | 9.41   | 2.50                          | 174.04  | 12.58   | 233.71       |
| 3 <sup>rd</sup> year  | 66.83  | 18.36  | 4.75                          | 321.97  | 23.90   | 435.81       |
| 4 <sup>th</sup> year  | 60.15  | 17.44  | 4.28                          | 273.67  | 21.51   | 377.05       |
| 5 <sup>th</sup> year  | 54.13  | 16.57  | 3.85                          | 232.62  | 19.36   | 326.53       |
| 6 <sup>th</sup> year  | 48.72  | 15.74  | 3.46                          | 197.73  | 17.43   | 283.08       |
| 7 <sup>th</sup> year  | 43.85  | 14.95  | 3.12                          | 168.07  | 15.68   | 245.67       |
| 8 <sup>th</sup> year  | 39.46  | 14.20  | 2.80                          | 142.86  | 14.12   | 213.45       |

### **18. Term loan repayment schedule after implementation of proposed project**

(Rs. In Lakh)

| <b>Period after release of first installment</b> | <b>Principal Installment</b> | <b>Interest @ 10.90% on monthly compounding basis</b> | <b>Total debt service</b> |
|--|------------------------------|---|---------------------------|
| 2 years  | 234.92                       | 170.41  | 405.32                    |
| 2.5 years  | 234.92                       | 157.30  | 392.21                    |
| 3 years  | 234.92                       | 144.19  | 379.11                    |
| 3.5 years  | 234.92                       | 131.08  | 366.00                    |
| 4 years  | 234.92                       | 117.97  | 352.89                    |
| 4.5 years  | 234.92                       | 104.87  | 339.78                    |
| 5 years  | 234.92                       | 91.76   | 326.67                    |
| 5.5 years  | 234.92                       | 78.65   | 313.57                    |
| 6 years  | 234.92                       | 65.54   | 300.46                    |
| 6.5 years  | 234.92                       | 52.43   | 287.35                    |
| 7 years  | 234.92                       | 39.32   | 274.24                    |
| 7.5 years  | 234.92                       | 26.22   | 261.13                    |
| 8 years  | 234.92                       | 13.11   | 248.02                    |
| <b>TOTAL</b>                                     | <b>3053.90</b>               | <b>1192.85</b>  | <b>4246.75</b>            |

#### **Rate of interest taken into consideration for computation**

- a. Rate of interest per annum (%) on monthly compounding basis 10.90  
b. Rate of interest (%) compounded upto 6 months for half yearly repayments 5.58

Note : Interest on term loan during moratorium period of 1.5 years has been included in the project cost.

## 19. Projected Profitability & Cashflow statement after implementation of proposed project

(Rs. In lakhs)

| S.No | Particulars                          | Period after release of first installment |                    |                    |                    |                    |                    |                    |
|------|--------------------------------------|---|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
|      |                                      | 2 <sup>nd</sup> Yr                        | 3 <sup>rd</sup> Yr | 4 <sup>th</sup> Yr | 5 <sup>th</sup> Yr | 6 <sup>th</sup> Yr | 7 <sup>th</sup> Yr | 8 <sup>th</sup> Yr |
| 1    | CAPACITY UTILISATION %               | 60  | 70                 | 80                 | 90                 | 100                | 100                | 100                |
| 2    | PRODUCTION ( MT)                     | 18000.00                                  | 21000.00           | 24000.00           | 27000.00           | 30000.00           | 30000.00           | 30000.00           |
| 3    | WORKING DAYS PER ANNUM               | 300                                       | 300                | 300                | 300                | 300                | 300                | 300                |
| 4    | SALES REALISATION                    | 3960.00                                   | 4620.00            | 5280.00            | 5940.00            | 6600.00            | 6600.00            | 6600.00            |
| 5    | RAW MATERIAL COST                    | 2587.50                                   | 3018.75            | 3450.00            | 3881.25            | 4312.50            | 4312.50            | 4312.50            |
| 6    | POWER AND UTILITIES                  | 24.00                                     | 24.00              | 24.00              | 24.00              | 24.00              | 24.00              | 24.00              |
| 7    | PACKING MATERIAL COST                | 5.00                                      | 5.00               | 5.00               | 5.00               | 5.00               | 5.00               | 5.00               |
| 8    | LABOUR WAGES COST                    | 3.30                                      | 3.30               | 3.30               | 3.30               | 3.30               | 3.30               | 3.30               |
| 9    | STORES & SPARES COST                 | 1.50                                      | 1.50               | 1.50               | 1.50               | 1.50               | 1.50               | 1.50               |
| 10   | SELLING & DISTRIBUTION EXPENSES      | 5.00                                      | 5.00               | 5.00               | 5.00               | 5.00               | 5.00               | 5.00               |
| 11   | INTEREST ON WORKING CAPITAL          | 113.40                                    | 113.40             | 113.40             | 113.40             | 113.40             | 113.40             | 113.40             |
| 12   | SALARIES                             | 11.40                                     | 11.40              | 11.40              | 11.40              | 11.40              | 11.40              | 11.40              |
| 13   | REPAIRS & MAINTENANCE EXPENSES       | 2.00                                      | 2.00               | 2.00               | 2.00               | 2.00               | 2.00               | 2.00               |
| 14   | ADMINISTRATION EXPENSES              | 1.00                                      | 1.00               | 1.00               | 1.00               | 1.00               | 1.00               | 1.00               |
| 15   | INSURANCE                            | 5.00                                      | 5.00               | 5.00               | 5.00               | 5.00               | 5.00               | 5.00               |
| 16   | TOTAL COST OF PRODUCTION (5)+..(15)  | 2759.10                                   | 3190.35            | 3621.60            | 4052.85            | 4484.10            | 4484.10            | 4484.10            |
| 17   | PBITD (4) - (16)                     | 1200.90                                   | 1429.65            | 1658.40            | 1887.15            | 2115.90            | 2115.90            | 2115.90            |
| 18   | INTEREST ON TERM LOAN                | 170.41                                    | 301.49             | 249.06             | 196.62             | 144.19             | 91.76              | 39.32              |
| 19   | DEPRECIATION BY WDV                  | 233.71                                    | 435.81             | 377.05             | 326.53             | 283.08             | 245.67             | 213.45             |
| 20   | PROFIT BEFORE TAX (17)-(18)-(19)     | 796.78                                    | 692.35             | 1032.29            | 1364.00            | 1688.63            | 1778.47            | 1863.13            |
| 21   | INCOME TAX (30% + 3% SURCHARGE)      | 246.21                                    | 213.94             | 318.98             | 421.48             | 521.79             | 549.55             | 575.71             |
| 22   | PROFIT AFTER TAX (20) - (21)         | 550.57                                    | 478.41             | 713.31             | 942.52             | 1166.84            | 1228.92            | 1287.42            |
| 23   | CASH ACCURALS (22) + (19)            | 784.28                                    | 914.22             | 1090.36            | 1269.05            | 1449.92            | 1474.59            | 1500.87            |
| 24   | FUNDS AV. FOR DEBT SERVICE (23)+(18) | 954.69                                    | 1215.71            | 1339.42            | 1465.67            | 1594.11            | 1566.35            | 1540.19            |
| 25   | DEBT SERVICE REQUIREMENT             | 405.32                                    | 771.32             | 718.89             | 666.45             | 614.02             | 561.59             | 509.16             |
| 26   | DSCR                                 | 2.36                                      | 1.58               | 1.86               | 2.20               | 2.60               | 2.79               | 3.02               |
| 27   | AVERAGE DSCR                         | 2.28                                      |                    |                    |                    |                    |                    |                    |
| 28   | IRR                                  | 16.83%                                    |                    |                    |                    |                    |                    |                    |

### Assumptions

Barley average rate of Rs. 1250 PQ

Malt average rate Rs.2200 PQ

Power rate Rs.8 per KW



## **20. STATUTORY / GOVERNMENT APPROVALS**

The Indian food processing industry is regulated by several laws which govern the aspects of sanitation, licensing and other necessary permits that are required to start up and run a food business. The legislation that dealt with food safety in India was the Prevention of Food Adulteration Act, 1954 (hereinafter referred to as "**PFA**"). The PFA had been in place for over five decades and there was a need for change due to varied reasons which include the changing requirements of our food industry. The act brought into force in place of the PFA is the Food Safety and Standards Act, 2006 (hereinafter referred to as "**FSSA**") that overrides all other food related laws.

FSSA initiates harmonization of India's food regulations as per international standards. It establishes a new national regulatory body, the Food Safety and Standards Authority of India (hereinafter referred to as "**FSSAI**"), to develop science based standards for food and to regulate and monitor the manufacture, processing, storage, distribution, sale and import of food so as to ensure the availability of safe and wholesome food for human consumption. The Society may contact State **Pollution Control Board** where ever it is applicable.

## **21. BACKWARD AND FORWARD INTEGRATIONS**

The objective of the scheme is to provide effective and seamless backward and forward integration for processed food industry by plugging the gaps in supply chain in terms of availability of raw material and linkages with the market. Under the scheme, financial assistance is provided for setting up of primary processing centres/ collection centres at farm gate and modern retail outlets at the front end along with connectivity through insulated/ refrigerated transport.

The Scheme is applicable to perishable horticulture and non-horticulture produce such as, fruits, vegetables, dairy products, meat, poultry, fish, Ready to Cook Food

Products, Honey, Coconut, Spices, Mushroom, Retails Shops for Perishable Food Products etc. The Scheme would enable linking of farmers to processors and the market for ensuring remunerative prices for agri produce.

The scheme is implemented by agencies/ organizations such as Govt. / PSUs/ Joint Ventures/ NGOs/ Cooperatives/ SHGs / FPOs / Private Sector / individuals etc.

**Backward Linkage:**

- Integrated Pack-house(s) (with mechanized sorting & grading line/ packing line/ waxing line/ staging cold rooms/cold storage, etc.)
- Pre Cooling Unit(s)/ Chillers
- Reefer boats
- Machinery & equipment for minimal processing and/or value addition such as cutting, dicing, slicing, pickling, drying, pulping, canning, waxing, etc.
- Machinery & equipment for packing/ packaging.

**Forward Linkage:**

- Retail chain of outlets including facilities such as frozen storage/ deep freezers/ refrigerated display cabinets/cold room/ chillers/ packing/ packaging, etc.
- Distribution centre associated with the retail chain of outlets with facilities like cold room/ cold storage/ ripening chamber.