

DETAILED PROJECT REPORT

ON

ESTABLISHMENT OF RICE-MILL

SAMPLE

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Introduction:

The State of Chhattisgarh is known for abundant production of paddy among other crops. The major varieties of Rice produced in the State are Kalinga-3, Aditya, Tulsi, Danteshwari, Mahamaya, HMT-Sona, etc. The fine scented rice varieties of Vishnubhog, Javaphool being traditional rice varieties of the State could carve their own niche. The State Government is also lending its support by way of providing MSP (Minimum Support Price) in the procurement of paddy.

It can be noticed that the Primary Cooperative societies have been made as the Paddy Procurement centers by the St. Govt and the societies have been procuring paddy and earning commission. This gives an opportunity and scope for the cooperative societies in the State for establishment of Rice-mill. The societies, by establishing the Rice-mills would have an opportunity for taking up the Custom Paddy milling for the St. Government procurement where the milled/ processed rice may be provided to the Civil Supplies / St. Govt and as well as take up own procurement of fine variety of paddy and milling the same and selling the rice in the open market which will generate additional income to the society.

The society, basing on the quantum of the paddy procurement, can decide upon establishing a justifiable capacity Rice-mill or may setup a mini Rice-mill. However the Rice-mill business would be more justifiable and generates more revenues provided the societies takes up its own procurement of paddy, processing/milling of the paddy and marketing of the paddy on its own brand or by collaborating with any locally established players. This not only generates additional income for the society, but also helps in improving the members' confidence in the functioning of the society and thereby more utilisation of the society services by the members.

PROJECT SUMMARY

The Rice production in the State of Chhattisgarh has been overwhelming over the years and the State Government has been supporting the paddy procurement process in the State. The Cooperative societies are the procurement centers of paddy through which Paddy is procured by the State Cooperative Marketing Federation Ltd. Since, paddy is procured due to which the societies are earning commission which is adding to their profits, there is a tremendous opportunity for the societies to add value to the Paddy by milling it and to enhance the Income levels.

This Report on the Establishment of Rice mill gives information on the kind of opportunities available for Rice milling and how it can increase the income levels for the society. The Rice milling process has been explained in the report along with analysis of the Strengths that supports the milling business, Weaknesses or Challenges that needs proper addressing before leaping in, Opportunities which substantiates the establishment of the mill and Threats which needs to be kept in mind before venturing. The report also explains the importance of various factors for efficient running of the mill such as the Capacity of the Management, Market Conditions and targeting the market.

The Financial Analysis of the Project is also given highlighting the impact of various processes in terms of cost, loan repayment and the expected profit margins under given assumptions.

Overall the Rice milling could be the turnaround activity for the cooperative societies. As the societies are the procurement centers, their income can be increased by adding the milling activity which can be custom milling by the St. Government or own milling and sale of Rice by the society.

GOAL / PURPOSE

VISION:

To be the Cooperative Rice mill of the State that stands for providing customers delight with range of Rice and Rice products.

Mission Statement:

To give enhanced value to all the stakeholders by engaging in Procurement, Processing and Supply by adapting apt procedures and policies and implementing through committed people.

Goal:

To meet the Rice requirement of the customers present in the area of operation and to reach 50% Rice market share in the area of operation.

To be a pioneer for Cooperatives in the State of Chhattisgarh in the activity of Rice milling as the same is negligibly undertaken by the Cooperative societies. The Purpose of this Study is to understand the intricacies of establishing and running the Rice mill, to give the customers with not only high quality Rice and Rice products to understand what it takes to be able to adapt the situations that might arise in future due to change in the Life style of people and their eating habits.

The Project Proposal: Establishment of Rice Mill:

The Process of Rice milling:

The Process of rice milling involves removal of husk and bran layers, which produce rice that can be edible, free of impurities. Rice milling business has been around for a long time. Especially, in countries where rice farming is major source of income, the rice milling business is one of the business in the agriculture that grows fast and help in economic development.

The process involves the following:

1. Pre-cleaning
2. De-husking
3. Paddy removal
4. Polishing or whitening
5. Grading and separation of white rice
6. Mixing
7. Mist polishing
8. Weighing of rice
9. Packing / Bagging of rice

In the modern Rice milling system, following proportion of Rice and other by-products are obtained and the details are given below.

S.no	Item	Percentage
1	Rice	67-69%
2	Husk	6%
3	Bran	10%
4	Broken Rice	12%
5	Wastage	5%

Income from the By-Products:

- The Rice-milling leads to other by-products such as Husk, Bran, Broken Rice besides giving polished and protein rich Rice.

- The society can sell the husk @ Rs. 2000/- per MT which can generate income to the society as it is used as fuel in power tanks, brick industries and rice mill. This is also used as packing material for transport and as thermal barrier.



- Bran, the valuable by-product from the Rice contains 20-22% Oil. The bran can be sold to Oil extractors @ Rs.2000/- per Qtl. The market for edible Rice Bran Oil is increasing and further the rice bran oil is used for fortification with certain other oils such as safflower oil (eg. Suffola) which has good potential in the market in coming years too. The defatted bran is used as raw material by poultry feed making plants.



- The Broken rice also can be sold by the societies @ Rs.1500.00 per Qtl, which is used in making Rice powder / atta, Rice rava, by companies dealing in ready to eat products (Idli , Dosa mix/ Rava-mix, etc)



- In the State of Chhattisgarh, Muri (Puffed Rice) and Chiwada (Flaked Rice) are major value added products of Rice and cooperative societies may take up the same for additional income.



Overall the Rice-milling has a huge potential of earning additional income to the societies which can bring a better price to farmers for their produce, provides an opportunity for providing quality rice to the customers and to strengthen the society's image in the eyes of the members and the farmers.

Availability of the raw material:

The raw material for the Rice-mill is Paddy which is cultivated and will be procured from the local farmers of the society's area of operation. The rice (68.8%) is the major crop of the state. The final estimation of Rice production during the year 2016-17 was 80.48 lakh MT and the advance estimate of Rice production for the year 2017-18 is 73.00 lakh MT. This clearly shows that Raw material would be widely available to the mill.

▲ **Challenges in establishing Rice milling business**

Capital Intensive:

As the establishment of Rice-mill is capital intensive, for many cooperatives which are not financially buoyant, keeping in view the potential the societies may be assisted by the State Government in establishment of the Rice mill subject to the suitability of the Rice-mil to that particular society, production of paddy in its area, its location, Management and financial viability of the project.

Regular maintenance is required:

Unlike traditional rice milling machines, the modern machine will require routine maintenance for it to give the required efficiency that produces the desired output. The cost of maintaining such machines can be expensive.

Storage facilities:

The processed / milled rice needs to be stored under suitable conditions to preserve the quality and longevity. Thus the societies are required to have scientific storage facilities. Initially, society's which are not having any storage facilities may be provided with godown of 200MT capacity.

Marketing Facilities:

The Rice so milled needs to be sold in the open market and gaining confidence of the customers on the quality of the rice and its continued usage is a major challenge. The same can be addressed by entering into an understanding with the local Rice distributors / dealers.

Deciding on the Rice milling type

There are three ways starting a Rice-mill however though all the methods work, the profit level defer from one another.

1. One pass

This is the method where husk and bran are removed at the same time.

2. The two step process

This process involves the removal of the husk and bran separately. The top two methods of the rice milling process employs the use of traditional rice milling

machines that many communities do. Most of the rice in the above are done locally for local consumption

3. Commercial milling

This is the method where rice undergoes several modern rice milling processes before taking it to the market. Every step is carefully taken to ensure the desired result is realized because the end product is meant for the wider market.

Thus, depending on the Scale and Market Potential cooperative societies may take up establishing a Mini Rice Mill or a full-fledged Modern Rice mill with Capacity over 1TPH.

▲ *Management & Its Role:*

The success of any business activity undertaken by the cooperative society by and large depends of the level of commitment of the Cooperative society's Board / Management. The Rice-mill is a capital intensive project and the Management of the society should be in a position to balance the key resources. The running and monitoring of all the related activities such as procurement, transportation, maintenance of processed rice, marketing i.e. every step of the Value Chain needs to be under supervision of the management and failure of handling any one or combination of the above may result in huge risk and may even pose a challenge in continuing the business.

▲ *Market Analysis:*

As the Rice is the staple food in most of the regions of the country, as well as its growing acceptance in adding it to the food / dietary requirement by people all over the country, the potential for the business of polished fine variety rice is immense in India. The Rice and all other By-products are saleable which makes Rice milling a lucrative business to enter. However the business needs constant monitoring and is also prone to vagaries of nature.

The market can be tapped from the local level to a wider area of market. Initially a tie-up with the established dealer/distributor in the local area has a very important role to play in the acceptance of the rice by the customer. The cooperative society may also explore tie-up with super markets in the area of operation such as Ask Me Bazaar, etc for store space.

▲ **Potential Target Market:**

With the changing life style and increased awareness on the importance of taking healthy and nutritious diet in the present generation of people, the demand and availability of multifarious options with respect to food items is increasing and is expected to continue over the time.

Keeping in view the Health consciousness of the people, the cooperative may also explore leaping forward by way of marketing and selling Brown Rice, Protein enriched rice, Diet Rice, etc which can meet the niche market requirements and also helps in establishing its own brand.



The Promising Export Potential:

India is the 2nd largest rice producer after China with the estimated Rice produced during 2018-19 at 115.60 million tonnes. India is also the largest exporter of Basmati Rice and 2nd largest exporter of Non-Basmati Rice. The export potential and increasing domestic requirement presents ample scope for venturing in the Rice trade. The Rice could play a key role in starting the export business of the cooperatives and could place them in a competitive advantage with the private enterprises.

SWOT Analysis

Strengths:

- Availability of Raw Material:

The State of Chhattisgarh is known as Rice Bowl of Central India and that the availability of Paddy is abundant for the Mill. However, the society's tie-up with the farmers should be effective that the paddy is supplied to the society's mill during the season on regular basis. This can be addressed by providing a better price to the farmers.

- Demand for the output:

The Rice along with wheat is also a staple food in the State. Further, the surplus Rice can be exported to the consumer States such as Kerala, Goa, etc domestically. The Rice also can be process further to the forms of Chiwada and Murmura which are also regularly taken by the people of this State in their diet.

- St. Government Policy:

The St. Government has Agro & Food Processing Industries policy with the objectives of enhancing farmers income, value addition of agro produce, fruits & vegetables, pulses, etc, encourage farmers for diversifying for farming fruit & vegetable and other horticulture crops as alternate to paddy, generation of employment opportunities in food processing sector, provision of secured storage for agro products. Thus the State Government's stand will have a positive impact on the running of the Rice mill.

Weakness:

- Marketing of Rice: Since the Rice mill is new, to get the customer is the biggest weakness/challenge for the society. The society has to make strategic arrangements with the local dealers and should develop a good and effective mode of publicizing the society's Rice. Initially this can be achieved by targeting the local populace of the Village, Tehsil and District and gradually expanding the market.

- Competition: Since the end product is similar to already available product there is challenge for the society from the Competitive millers mostly belonging to private and established millers. Through a Strategic planning for pushing the product in the market should address the matter.

Opportunities:

- The Rice can be processed to Poha and Murmura which has wide acceptance in the State and in various states in the country. This value addition helps the society to place in adding to the bottomline.
- The by-products of the especially Bran which is used in making of edible oil is showing increasing demand over the years. Further all the by-products has the potential to turn into cash/profit.
- In the State of Chhattisgarh, the branding of Rice is yet to pick up. Thus, if society could able to instill confidence among the customers on its quality which helps in establishing a brand. The society should have its own competitive advantage.

Threats:

- Technology: The technology is becoming obsolete in less than the projects payback period, which may affect the profits as establishing a Rice mill is Capital intensive.
- Counter the Competition: As the end product is already being dealt by various competitors, unless the society has USP (Unique Selling Proposition) and customer reach, beating competition would be tough.

ESTABLISHMENT OF RICEMILL OF 1 TPH CAPACITY AT A PROJECT COST OF
₹.80.00 LAKH –

PHYSICAL & FINANCIAL RESOURCES

The detail of Physical and financial resources required for establishment of 1 TPH Rice Mill is given below.

(Rs in Lakh)

1	Land & Building	5.00
2	Principal Plant & Equipment	55.00
3	Other Fixed Assets	2.50
	Preliminary / Pre-Operative Expenses	2.00
	TOTAL FIXED CAPITAL	64.50
	Margin Money/Working Capital (two months)	15.64
4	TOTAL PROJECT COST (TPC)	80.14

The Total Project Cost (TPC) of Rice Mill is ₹.80.14 lakh or say ₹.80.00 lakh.

Financial Assistance:

The establishment of Rice mill of 1 TPH capacity at a Project cost of ₹.80.00 lakh. 85% of the financial assistance would be sourced from financial institution and the society' own contribution would be @ 15% of the Project Cost.

PROJECT ECONOMICS:

- I. Fixed Capital (Land & Site Development) : ₹.5.00 lakh
- II. Machinery & Equipment : ₹.55.00 lakh

Working Capital

- i) Salaries & Wages (per month)*

S.No	Details of employees	No.of person	Salary p.m.	Total
1	Supervisor / Skilled worker	1	8,000.00	8,000.00
2	Semi / Unskilled Worker	2	5,500.00	11,000.00
TOTAL		3		19,000.00

* The expenses on salaries are increased @10% every year.

ii) Raw Material (Own procurement)

S.No	Raw Material	Unit	Quantity in Qtls	Rate per Qtl	Total
1	Paddy	Qtl	5000.00p.a	1800.00	90,00,000.00

The Avg Raw material requirement per month = Rs. 7.50 lakh.

iii) Utilities (Power & Water /p.m.)

S.No	Description	Amount
1	Power	2,500.00
2	Water	500.00
3	TOTAL	3,000.00

iv) Other Expenses per month:

S.No	Description	Amount
1	Postage, Tele & Stationery Items	500.00
2	Transportation & Conveyance	3,000.00
3	Consumable Stores	1,500.00
4	Repairs & Maintenance	2,500.00
5	Miscellaneous Expenses	3,000.00
TOTAL		10,000.00

v) Working Capital Requirement per month:

S.No	Description	Amount
1	Salaries & Wages	19,000.00
2	Raw Material	7,50,000.00
3	Utilities	3,000.00
4	Other Expenses	10,000.00
TOTAL		7,82,000.00

INFLOWS

Base Procurement for own business	5000.00	Qtls
Rate of Procurement	1800.00	Per Qtl
Selling Price of Rice	3300.00	Per Qtl
Custom milling Procurement	30000.00	Qtls

₹. in Lakh)

Inflow Details		I Year	II Year	III Year	IV Year	V Year	VI Year	VII Year	VIII Year
	Capacity Utilisation / Procurement		75%	75%	80%	80%	90%	90%	90%
Paddy Procured in Qtls		3750	3750	4000	4000	4500	4500	4500	4500
Sale of Rice		82.913	91.204	97.284	97.284	109.445	109.445	109.445	109.445
Sale of Husk		0.000	0.000	0.000	0.000	0.001	0.001	0.001	0.001
Sale of Bran		0.075	0.075	0.080	0.080	0.090	0.090	0.090	0.090
Sale of Broken Rice		0.081	0.081	0.086	0.086	0.097	0.097	0.097	0.097
Proc'mt Commission		9.000	9.000	9.000	9.000	9.000	9.000	9.000	9.000
Milling Commission		6.825	6.825	6.825	6.825	6.825	6.825	6.825	6.825
Income from Cust' mill By Products		0.939	0.939	1.001	1.001	1.126	1.126	1.126	1.126
TOTAL INFLOW		99.833	108.124	114.277	114.277	126.584	126.584	126.584	126.584

Assumptions:

Govt. Procurement for custom milling has been taken as 30000 Qtls p.a

Commission for paddy procurement is taken @ Rs 30 per Qtl

Commission for Rice milled under Govt. operation @ 35 per Qtl

Net Realisation of Rice from paddy is taken @ 67%

Sale price of Rice is increased by avg rate of 10% every year

Sale of Husk is taken @Rs.2000 per MT at net realisation of 6% of Paddy

Sale of Bran is taken @Rs.2000 per Qtl at net realisation of 10% of Paddy

Sale of Broken Rice is taken @Rs.1500 per Qtl at net realisation of 12% of Paddy

Income from custom milling by products is taken @ 6 times of income generated from own procurement

INCOME OUTFLOWS

Outflow Details		I Year	II Year	III Year	IV Year	V Year	VI Year	VII Year	VIII Year
	Capacity Utilisation / Procurement	75%	75%	80%	80%	90%	90%	90%	90%
	Paddy Procured in Qtls	3750	3750	4000	4000	4500	4500	4500	4500
	Cost of Procurement	67.500	74.250	79.200	79.200	89.100	89.100	89.100	89.100
	Depreciation @10%	8.700	8.700	8.700	8.700	8.700	8.700	8.700	8.700
	Salaries & Wages	0.912	1.003	1.104	1.214	1.335	1.469	1.616	1.777
	Utilities & Other expenses	1.560	1.716	1.888	2.076	2.284	2.512	2.764	3.040
	TOTAL Outflow	78.672	85.669	90.891	91.190	101.419	101.781	102.179	102.617

Assumptions:

- Rate of procurement is increased @10% every year*
- Salaries of the staff is increased @10% every year*
- Utilities and other expenses are increased @10% every year*
- Depreciation is calculated as per Straight Line Method @ 15% of ₹.58.00 lakh i.e cost of machinery and other fixed assets.*

Loan & Repayment particulars:

(₹. in Lakh)

Term Loan	52.000
Rate of Interest	10.98%

(₹. in Lakh)

		I Year	II Year	III Year	IV Year	V Year	VI Year	VII Year	VIII Year
Details of Repayment	Term Loan Instlmnt	0	7.429	7.429	7.429	7.429	7.429	7.429	7.429
	Interest on Term loan	5.710	5.710	4.894	4.078	3.263	2.447	1.631	0.816
	Total Repayment	5.710	13.139	12.323	11.507	10.692	9.876	9.060	8.245

Details of Fixed Costs:

(₹. in Lakh)

		I Year	II Year	III Year	IV Year	V Year	VI Year	VII Year	VIII Year
Fixed Cost Details	Depreciation	8.700	8.700	8.700	8.700	8.700	8.700	8.700	8.700
	Salaries & Wages	0.912	1.003	1.104	1.214	1.335	1.469	1.616	1.777
	Utilities & Other expenses	1.560	1.716	1.888	2.076	2.284	2.512	2.764	3.040
	Interest on Term loan	5.710	5.710	4.894	4.078	3.263	2.447	1.631	0.816
	TOTAL Fixed Cost	16.882	17.129	16.585	16.069	15.582	15.128	14.711	14.333

PROFIT AND OTHER KEY FINANCIAL INDICATORS:

Diff between Inflow - Outflow (Profit)	15.451	9.317	11.064	11.580	14.473	14.927	15.344	15.722
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*Income Tax has been taken as NIL

DSCR (PAT+Int on TL+Depr') (Int on TL+TL Inst)	5.173	1.797	1.992	2.109	2.464	2.633	2.828	3.058
Avg DSCR:	2.558							

Percentage Profit on Sales	15.36%	8.51%	9.59%	10.05%	11.37%	11.73%	12.07%	12.37%
IRR	19%							

Payback Period	5 Years 2 months
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BEP (Capacity)	63.39%	68.54%	72.25%	71.89%	79.71%	79.39%	79.09%	78.82%
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SAMPLE

Project in Brief

Establishment of 1 TPH Capacity Rice Mill		
1	Final Output	Fine Rice & By Products: a) Broken Rice b) Rice Bran c) Husk
2	Market	State of Chhattisgarh and Pan India
3	Project Cost	₹.80.00 lakh
4	Term Loan	₹.52.00 lakh
5	Subsidy under CSISAC	₹.16.00 lakh
6	Society Contribution	₹.12.00 lakh
7	Method of Funding	Direct Funding
8	Security for Loan	Mortgage of Fixed Assets
9	Repayment	8 years including 1 year moratorium
Financial Indicators		
i)	IRR	19% (Norm: Above 15%)
ii)	Avg DSCR	2.558 (Norm: Above 2%)

Schedule / Timeline

S.No	Activity	Time line
1	Development of Land & Civil works	2 Months
2	Transportation & Installation of Machinery	1 month
3	Statutory Requirements such as obtaining necessary permissions, dedicated electric connection (if requiren) licences, TIN number, GST Requirements from the authorities concerned,	2 months
4	Commercialisation	1 month

Note:

- a. It is assumed that the society already has the godown for storing the Rice. In case the same is not available with the society the cost of the project and the time line will increase further.
- b. The construction of the Rice mill shed and other related structures needs to be taken in coordination with the supplier of the machinery.
- c. It is ideal to take up the establishment of Rice mill from the month of Feb-March of the year. At an estimated project completion period of 6 months, the Rice mill can be ready for operation by the end of the Khariff season of the year i.e by Oct – November.

Additional Information:

- ▲ In order to reduce cost on purchase of Plant & Machinery, indigenously available machinery has been considered for installation of Rice mill. Further, the commission earned towards the procurement of paddy under the St.Govt. operations has been considered @ Rs.30/- on a conservative side, however the existing rate of commission on procurement is on higher side which makes the profit levels higher and thus making the financial viability of the project more strong.
- ▲ In India, Paddy is cultivated in many states in two seasons viz., Khariff (Monsoon) & Rabi. The establishment of Rice mill would be more feasible and financially viable, provided the rice mill operates for regular milling of the paddy procured during the Khariff season and Parboiling and milling the paddy procured during the Rabi season as the nature of the paddy seed differs from season to season. However the machinery for Parboiled Rice mill is Capital intensive and has associated variable costs. Further, depending only on custom

milling is not sufficient in earning income to the society and thus the society should aim for own procurement and own marketing of fine variety rice.

▲ **Statutory Adherences:**

The establishment of Rice mill also requires certain statutory adherences such as

- Obtaining dedicated power supply,
- No objection from the Gram Panchayat and / or related administrative local bodies of the area,
- Certificate from Pollution Control Department, etc.

ABBREVIATIONS

MSP	:	Minimum Support Price.
MT	:	Metric Tons
TPC	:	Total Project Cost
NCDC	:	National Cooperative Development Corporation
CSISAC	:	Central Sector Integrated Scheme on Agricultural Cooperation
DSCR	:	Debt Service Coverage Ratio.
PAT	:	Profit after Tax
TL	:	Term Loan
DEPR	:	Depreciation
Avg. DCSR	:	Average Debt Service Coverage Ratio.
IRR	:	Internal Rate of Return
BEP	:	Break Even Point
QTL	:	Quintal
USP	:	Unique Selling Proposition
SWOT	:	Strength, Weakness, Opportunities & Threats