



**Odisha Pulse Mission**



# **Mini Dal Mill**



**CONCEPT | OPERATION | BUSINESS PLAN**

**Government of Odisha and ICARDA Collaborative Project**



## 1. INTRODUCTION

### 1.1 Current Scenario

India is the largest producer, largest consumer & largest importer of pulses in the world. In Odisha, pulse is the second largest crop next to paddy. In Odisha total area in pulses are 20.5 lakhs hect with total production of 10.5 lakh metric ton. Pulses are rich source of protein & play vital role in the vegetarian diet. There is daily requirement of 50 gms dal per adult per day. Odisha has good potential to establish pulse processing mill as many districts are engaged in pulse production. So it justifies the setting of a processing plant of pulses in Odisha.

### 1.2 Status of pulse processing in Odisha & reasonable for setting of Mini dal mill at Jajpur by ICARDA

The Objective of agriculture development includes not only enhancing the productivity of agril but also maximizing the value of produce generated. Value addition to the agriculture produce involves proper post harvesting; processing, grading, packing, transportation and storage. The poor handling of farm produce results in a loss up to 30 % of produce. So the provision of post harvesting, processing and storage facilities assume great importance in increasing the income level of the farmers in the state.

Processing activities are not very strong in Odisha as most of producers come under small & marginal category who process the pulses at home with help of grinding stone (Chakki) or in the atta chhakki & rice mil. In the context of Jajpur district, pulse crops occupy largest area in rice fellow during Rabi season. Marketing of surplus produce is a great constraint.

Generally farmers of Odisha usually use only 10% of dal by processing through Chaki for domestic purpose. Farmers are compelled to sale 90 % of pulses with low price. Therefore use of mini dal mil will definitely solve this problem in the villages. Besides it also provides employment and income to rural SHG .It also provide dal to mid day meal which will promote the dal business. Considering this, ICARDA has taken step to provide mini dal mil to the SHG of the Bidyadharpur village of Gurudaspur GP in sadar block of Jajpur under OPM Project. Its main purpose is value addition and post-harvest management of surplus pulse seed of that locality. It will check up distress sale and farmer will get remunerative price.

## 2. RAW MATERIAL AVAILABILITY

There is sufficient quantity of raw material especially biri, mung & grams are available in this locality. The material should procure in harvesting season & store for use. Supply of good quality raw materials, adoption of conditioning techniques to loosen the husk without resorting to sun drying, extension of storage facilities & infrastructure support & proper market linkage are important.

## 3. MACHINERIES

ICARDA will establish mini dal mil at Bidyadhar pur at Jajpur district. SHG will get free machineries. The SHG will arrange site for installation. Initially they will take 2 big room with proper partition for machinery room (Cleaning section, Milling section, Policing section & sortex section) & raw material store , finishing goods store, gunny bag & packing material store & office space cum sale counter.

### 4.1 PROCESSING OF PULSES.

Since pulses are commonly consumed in de-husked & spilt form, the processing of pulses is a definite activity as assumed a lot of importance. The processing of pulses is under taken at 3 levels. That is primary, secondary & tertiary.

- (I) Primary processing-Consist mainly of production of cleaned graded & packed pulses.
- (II) Secondary processing- Consisting of de-husking, splitting, polishing, turmeric coating & also the powder besan & packed dal.
- (III) Tertiary processing- Consist mainly of preparation of roasted, fried dal & other associated dal product.

### 4.2 CONVENTIONAL PULSES MILLING PROCESS

- I) Wet milling operation - consisting of cleaning of chaffs , dirt etc > soaking> Mixing with red soil> conditioning > de-husking & splitting> separation & grading> dehusk & split pulses> bagging
- II) Dry Milling Operation- Consisting of cleaning of chaffs & dirt > pitting> pre treatment with oil > Conditioning > de-husking and splitting the mixture of husk, broken & powder > grading > polishing > grade 1 pulses.

### 4.3 PRODUCT (MAIN PRODUCT & BY PRODUCT)

Recovery rate of dal from the processing facility is around 75 to 80 %. The other bi-product of pulses processing are husk, broken pulses, powder pulses, unhusked/dehusked whole pulses etc. The product along with their share in % are indicating in the table 1.

Table 1 : Product & By Product

S.No.	Item	Share in %
1.	Dehusked & split pulses	75
2.	Fine dust powder	0.5 - 1
3.	Brokens	0.5 - 1
4.	Husk	13 - 15
5.	Un husked pulses	1
6.	Dehusked whole pulses	1
	Total	100

### 4.1 WEIGHING & PACKING

After polishing the de-husked pulses are packed in bulk or retail packing as desired. The packing material may be pre-printed or plain pack.

### 5.1 COST OF OPERATION

For purchase of raw material, gunny bags, wages & other operational cost at least SHG may take up loan RS 4 Lakhs from bank at 3% interest.

### 5.2 BUSINESS PLAN

The processing of dal in dal mil & sale it after value addition is a very good profit business. There are 2 types of business. One business is SHG will purchase the raw product & process it & sale the dal for which capital is required. Second one is SHG will simply mill the farmers produce by charging milling charges for which no capital is required. So SHG should follow both the process. A detailed 5 years indicative model business plan is furnished below.

Table 2 : Cost benefit Calculation Sheet

A. Expenses						
Sl.No	Item	Year wise estimation of fund & produce quantity				
		1ST	2ND	3RD	4TH	5TH
1	Procurement of raw material (Qnt.)	60	70	80	90	100
2	Year wise fund requirement for purchase of raw material @ Rs. 55, 60, 65, 70, 75 per KG respectively	3,30,000/-	4,20,000/-	5,20,000/-	6,30,000/-	7,50,000/-
3	Godown rent for 2 room one for mil another for store @ Rs 2000/- for 12 months	24,000/-	24,000/-	24,000/-	24,000/-	24,000/-
4	Transportation & other logistic support Rs 20/- per Qtl	1200/-	1400/-	1600/-	1800/-	2000/-
5	Electric rent of godown & mil	22,000/-	24,000/-	26,000/-	28,000/-	30,000/-
6	Gunny bag for procurement @ Rs. 20 per 50 KG bag	2400/-	2800/-	3200/-	3600/-	4000/-
7	Packing material with printing	10,000/-	11,000/-	12,000/-	13,000/-	14,000/-
8	One wages for running machine for 150 days @ Rs 250/- per day	37,500/-	37,500/-	37,500/-	37,500/-	37,500/-
9	Insurance & other incidental charges	2000/-	2500/-	3000/-	3500/-	4000/-
10	Interest on working capital of Rs. 4 Lakhs @ 3% per annum	12000/-	12000/-	12000/-	12000/-	12000/-
11	Other misc. expenses	3000/-	3500/-	4000/-	4500/-	5000/-
12	Total Expenses	4,44,100/-	5,38,700/-	6,43,300/-	7,57,900/-	8,82,500/-
B. Income						
1	Milling quantity of dal in QTL	60	70	80	90	100
2	Process product after milling (80%) in QTL	48	56	64	72	80
3	Revenue earned after sale of packed dal @ Rs 9500/-, 10,000/-, 10,500/-, 11,000/-, 11,500/- per QTL	4,56,000/-	5,60,000/-	6,72,000/-	7,92,000/-	9,20,000/-
4	Revenue from waste product of 12,14, 16,18,20 QTL @ 500 per QTL	6000/-	7000/-	8000/-	9000/-	10000/-
5	Revenue from milling of raw dal of farmer produce @ 4 QTL per day X 150 days = 600 QTL @ Rs. 500/- per QTL	3,00,000/-	3,00,000/-	3,00,000/-	3,00,000/-	3,00,000/-
	Total Revenue (3+4+5)	7,62,000/-	8,67,000/-	9,80,000/-	11,01,000/-	12,21,000/-
C. Net Profit (B - A)		3,17,900/-	3,28,300/-	3,36,700/-	3,43,100/-	3,38,500/-

### 5.3 MANAGEMENT COMMITTEE

SHG should form 5 member management committee for day today management, supervision & monitoring of mini dal mill. They will maintain all book & record keeping. A detail operational guide line & maintenance of record keeping are to be followed as mention.

#### Following activities will be taken in this project.

1. Krusak Committee will nominate a SHG for dal mil .
2. Management committee of SHG may be formed.
3. Details discussion should be made on installation, space for installation, working group, working capital etc with details of its activities.
4. Following register will be maintained

#### 1) Grower Register :

SHG will enlist the name of farmers who will sell the pulses for mini dal mil.

Sn.	Name of the Farmer	Pulse Crop	Variety	Area Grown	Expected production in QTL	Expected quantity to sale to the dal mil.

#### 2) Purchase Register :

Sn.	From whom Purchase	Village	Name of the seed with variety	Quantity Purchases (QTL)	Amount Paid	Signature of the Seller	Signature of the Buyer

#### 3) Transaction Register For Processing of Dal :

Sn.	Date of milling	Quantity milled (QTL)	Process Dal Quantity	Strover Quantity	Hour of milling	Charges per hour	Total Charge

#### 4) Packing Register :

Sn.	No of ½ KG Pkt	No of 1 KG Pkt	No of 5 KG Pkt	No of 10 KG Pkt	Total quantity(QTL)

#### 5) Sales Register :

Date	To whom sold	Total no. of pkt with size	Quantity (QTL)	Cost	Amount paid by the Buyer	Signature of the Custodian



## THE ORGANIZERS



**Government of Odisha** (ଓଡ଼ିଶାସରକାର) governs the state of Odisha in the Republic of India. The state government has various well established departments to undertake the integral development of the state. The head of state of Odisha is the Governor, appointed by the President of India on the advice of the Central government, who heads the council of ministers, a judiciary, and a legislative branch. The Chief Minister is the head of the council of the ministers and is vested with most of the executive powers. The State High Court is located in Cuttack. The Legislative Assembly of Odisha is unicameral, consisting of 147 Member of the Legislative Assembly (M.L.A); (for details on various government initiatives, please visit <http://www.odisha.gov.in/portal/default.asp>).



**Orissa University of Agriculture and Technology**, established in 1962 by Legislature of the State of Odisha through the Orissa University of Agriculture and Technology Act, 1965 (Orissa Act 17 of 1965) establishing and incorporating a university of agriculture and technology for the agricultural education, research and development of the people of the State of Odisha. The vision is for "Education on Agriculture & Technology, Research & Extension". The mandate of the Orissa University of Agriculture and Technology as specified in the University Act is (1) education of the rural people of the state in agriculture and allied disciplines, (2) advancement of research and learning to generate appropriate technology in various branches of agriculture and allied sciences, (3) undertake extension activities, and (4) such other activities as may be required in course of time; (for details, please visit <http://www.ouat.nic.in/>).



**The Department of Agriculture and Farmers' Empowerment (Govt. of Odisha)** mainly consists of 4 executive wings namely, Directorate of Agriculture, Directorate of Horticulture, Directorate of Soil Conservation and Watershed Mission. Besides these, a number of autonomous bodies like Odisha State Seeds Corporation (O.S.S.C), Odisha Agro Industries Corporation (O.A.I.C.), Agriculture Promotion and Investment Corporation of Odisha Limited (APICOL), Odisha State Seed and Organic Products Certification Agency (OSSOPCA), Institute on Management of Agricultural Extension (IMAGE), Odisha Cashew Development Corporation are also working under the Department. The Directorate of Agriculture is the oldest, which started functioning from 1945 onwards as the Directorate of Development, subsequently renamed as the Directorate of Agriculture and Food Production, Odisha from which the other two Directorates got separated in the years 1977 and 1978 (for details, please visit [http://agriodisha.nic.in/Http\\_public/index.aspx](http://agriodisha.nic.in/Http_public/index.aspx)).



**ICARDA (International Center for Agricultural Research in the Dry Areas)** established in 1977 is one of 15 such centers supported by the CGIAR and mandated to promote agricultural development in the dry areas of developing countries. The center works on the problem-solving needs of resource-poor farmers through development and delivery of new technologies for sustainable growth in agriculture, in a partnership and multi-stakeholder approach, working in 32 countries. Its research and training activities cover crop improvement, water and land management, integrated crop-livestock-rangeland management, and climate change adaptation. The ICARDA genebank holds over 1,55,000 accessions from over 110 countries: traditional varieties, improved germplasm, and a unique sets of wild crop relatives of food legumes such as chickpea, lentil, field pea, and fababean, wheat, barley, oats and other cereals, forage crops, rangeland plants, and wild relatives of each of these species. ICARDA works in strong partnership with national agricultural research systems, government ministries, community linked institutions; (for details, please visit: <http://www.icarda.org/>).





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