Diagnostic Study of Pulses Cluster in Rayagada District, Odisha

Submitted to: The DC (MSME), Ministry of MSME (Government of India)

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MICRO, SMALL & MEDIUM ENTERPRISES
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सत्यमेव जयते

Acknowledgement

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We appreciate the hard work of our field coordinators who braved all odds to complete this study in time. We thank all of you without whose cooperation, the study could not have seen its fructification.

Cluster Team, CSREM

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INTRODUTION

A pulse is an annual leguminous crop and are used for food and animal feed. The term "pulse", as used by the Food and Agricultural Organization (FAO), is reserved for crops harvested solely for the dry grain. Pulses are important food crops due to their high protein and essential amino acid content. Like many leguminous crops, pulses play a key role in crop rotation due to their ability to fix nitrogen. The following are the major pulses crop grown in India.

Chick Pea

Chick pea is the most important pulse in India. There are two types of variety of chick pea namely, Desi and Kabuli. India mainly produces Desi variety. Accepted all over the country, about 40% of the production is used for making besan (fine flour) which is used for making sweets, snacks, and mixed with wheat flour for making chapattis (flat bread); about 35% is split to make dal and the remaining 25% is left whole. About 10% of the production is green-seeded which is used as a delicacy in rice pulao in metropolitan cities.

Pgeon Pea

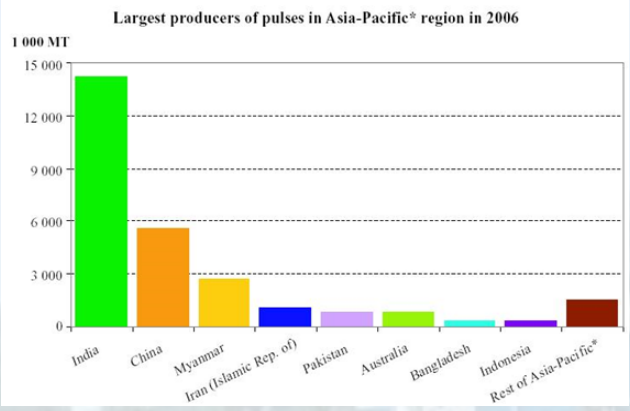
Pigeon pea (Tur): is the second major crop in terms of production. In India, split pigeon peas are one of the most popular pulses and are used to prepare daal, a popular soup like curry. The pigeon pea (*Cajanus cajan*, syn. *Cajanus indicus*) is a perennial member of the family Fabaceae. Other common names are arhar (Hindi), Rohor (Assamese), Rahar (Nepali), red gram, toovar/toor (Gujarati/Marathi/Punjabi), tuvaram paruppu),toovara paruppu (Malayalam).

Urad

Urad is the third important pulse, liked throughout the country and used in various forms (whole, shelled and split, only split, and milled). Urad is mainly used in the preparation of fermented foods such as idli (rice cake), papad, vada (deep fried balls), dosa (fermented crepes), and other regional foods in India. It is also consumed in split, boiled or roasted forms or ground into flour and used to make, cake, bread and porridge. The product sold as "black lentil" is usually the whole urad bean or urad dal. The product sold as "white lentil" is the same lentil with the black skin removed.

Moong

Moong beans in Indian cuisine are stripped of their outer coats to make moong dal. Although whole moong beans are also occasionally used, mainly in Kerala, beans without skins are more popular and commonly used ones.



WORLD PULSES PRODUCTION

The world total pulses output is around 604 million MT. India is the major producer of pulses in the world. The other major producing countries are China, Afganistan, Myanmar and Indonesia. The following table provides the details of global pulses out put as on 2006.

Table 1 World Pulses Production

Country		2004	2005	2006	Annual Growth Rate 1996-2006
	SOUTHEAST ASIA				
1.	Cambodia	28.5	45.0	59.9	15.8%
2.	Indonesia	322.0	317.1	328.4	0.8%
3.	Lao PDR	16.1	16.5	16.5	2.3%
5.	Myanmar	2 570.6	2 571.1		
6.	Philippines	56.3	56.7		
7.	Thailand	214.9	191.9		
9.	Viet Nam	252.8	255.0	255.0	1.5%
10.	Afghanistan	42.1	42.1	2 676.2	7.7%
11.	Bangladesh	429.8	337.5	55.6	-1.1%
13.	India	14 686.4	13 750.5	14 264.0	0.8%
14.	Iran (Islamic Rep. of)	1 037.3	1 006.6	1 065.0	0.5%
16.	Nepal	245.5	249.0	245.8	1.7%
17.	Pakistan	956.3	1 170.6	803.0	-3.1%
18.	Sri Lanka	17.0	20.2	18.1	-6.0%
19.	Kazakhstan	40.4	44.0	48.0	5.8%
20.	Kyrgyzstan	36.8	45.9	62.0	31.3%
21.	Tajikistan	31.2	40.3	58.2	28.4%
22.	Turkmenistan	8.0	9.0	14.0	7.2%
23.	Uzbekistan	12.3	11.6	10.1	0.2%
24.	China	4 942.8	4 792.8	5 556.5	1.7%
25.	DPR Korea	310.0	310.0	280.0	0.4%
27.	Rep. of Korea	17.2	15.4	13.5	-7.4%
	SUB-TOTAL	26 291.4	25 315.3	26 422.7	1.2%
42.	Australia	1 628.4	2 111.8	803.0	-11.0%
43.	Japan	118.8	105.4	84.1	-2.9%
44.	New Zealand	33.3	40.8	35.1	-3.1%
	SUB-TOTAL	1 780.5	2 258.1	922.2	-10.3%
ASIA & PACIFIC*		28 071.9	27 573.3	27 344.9	0.5%
REST OF WORLD		32 820.6	33 136.4	33 067.7	1.6%
WORLD		60 892.6	60 709.7	60 412.6	1.1%

FAO Statistics: 2007

INDIAN SCENARIO

India is the world's largest producer of pulses. Pulses are cultivated in nearly 23.76 million hectares and the production is about 14.11 million MT per year (2006). Pulses form an important component of Indian diet. India is also the largest consumer of accounting for nearly 27% of world's pulses consumption. India is also the world's largest importer of pulses which accounts for 12-13% of the world's import of pulses. Pulse is the common name of the *leguminosae* (pea) family (Lucier and Plummer). In India, the word "pulse" is used to describe the seeds of legumes that are dicotyledons and have no seed coats. The main pulses grown in the country are arhar, moong, urad, gram, peas, masoor and others. Table given below the details of production of major pulses in India. Out of the total pulse production in India nearly 30% of production happens in Kharif season and the rest in Rabi season. Gram and arhar together constitute nearly 65 % of the total pulse production in the country and moong, urad, peas and others nearly 25% of total production.

Table 2: Area, production and productivity of pulses in India

Year	Area in million Hectares	Production in million tones	Yield in Kg/Hectare	% Coverage Under Irrigation
2000-01	20.35	11.08	544	12.5
2001-02	22.01	13.37	607	13.3
2002-03	20.50	11.13	543	14.4
2003-04	23.46	14.91	635	13.6
2004-05	22.76	13.13	577	NA
2005-06	22.39	13.39	598	NA
2006-07	23.76	14.11	594	NA

Source: http://dacnet.nic.in/eands/agStat06-07.htm

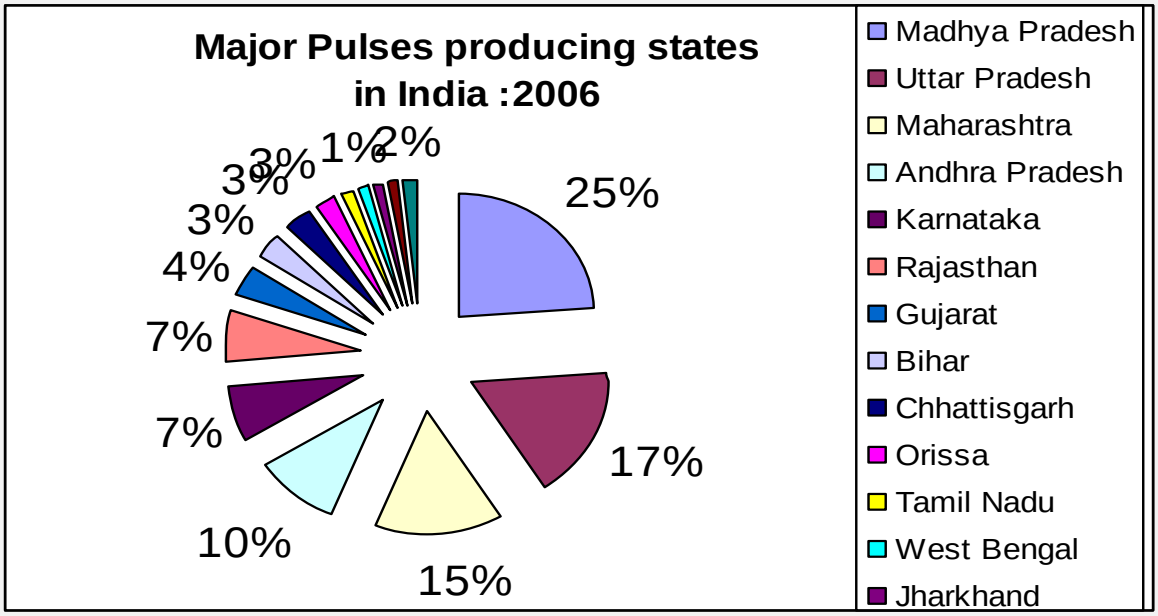
Table 3: Pulses production in India (Quantity in lakh Tons): 2005-06

Pulses	Kharif	Rabi	Total
Arhar	21.8	2.5	24.3
Moong	10.5	1.6	12
Urad	8.1	2.8	10.9
Masoor	0	11	11
Gram	0	57	57
Peas	0	6.5	6.5
Others	0	0	5.5
Total	40.3	81.4	127.2

Source: http://dacnet.nic.in/eands/agStat06-07.htm

Madhya Pradesh is the largest pulses producing state in India with a production of 3.3 million MT and accounts for nearly 25% of the total pulses production in the country. Other major pulses producing states in India include Uttar Pradesh (17%), Maharashtra (15%), Andhra Pradesh (7%), and Karnataka (7%).

Figure 2: Major pulses producing state in India



Source: http://dacnet.nic.in/eands/agStat06-07.htm

Table 4: Area, yield and production of pulses in different states in India: 2005-06

State	Area	% of Total Area	Production	% of Total Production	Cumulative % of Total Production	Yield
1	2	3	4	5	6	7
Madhya Pradesh	4.28	19.12	3.23	24.14	24.14	754
Uttar Pradesh	2.75	12.28	2.23	16.67	40.81	811
Maharashtra	3.43	15.32	2.01	15.02	55.83	584
Andhra Pradesh	1.78	7.95	1.38	10.31	66.14	772
Karnataka	1.98	8.84	0.96	7.17	73.32	487
Rajasthan	3.44	15.36	0.90	6.73	80.04	261
Gujarat	0.78	3.48	0.55	4.11	84.16	704
Bihar	0.60	2.68	0.45	3.36	87.52	749

Chhattisgarh	0.95	4.24	0.45	3.36	90.88	477
Orissa	0.81	3.62	0.34	2.54	93.42	416
Tamil Nadu	0.53	2.37	0.18	1.35	94.77	337
West Bengal	0.22	0.98	0.17	1.27	96.04	785
Jharkhand	0.29	1.30	0.17	1.27	97.31	592
Haryana	0.19	0.85	0.12	0.90	98.21	622
Others	0.36	1.61	0.24	1.79	100.00	-
All India	22.39	100.00	13.38	100.00	-----	598

Source: http://dacnet.nic.in/eands/agStat06-07.htm

The last few years observed a marginal increase in the area under production and total production of pulses in the country. As compared to 2005-06 the total pulses production in the country increased from 13.39 million MT to 14.11 million MT. Table given below provides the trends in the production of pulses in the country during past few years.

Table 5: Trends in pulses production in India

Year	Area in million Hectares	Production in million tones
2000-01	20.35	11.08
2001-02	22.01	13.37
2002-03	20.5	11.13
2003-04	23.46	14.91
2004-05	22.76	13.13
2005-06	22.39	13.39
2006-07	23.76	14.11

Source: http://dacnet.nic.in/eands/agStat06-07.htm

Figure 3: Trends in pulses production in India

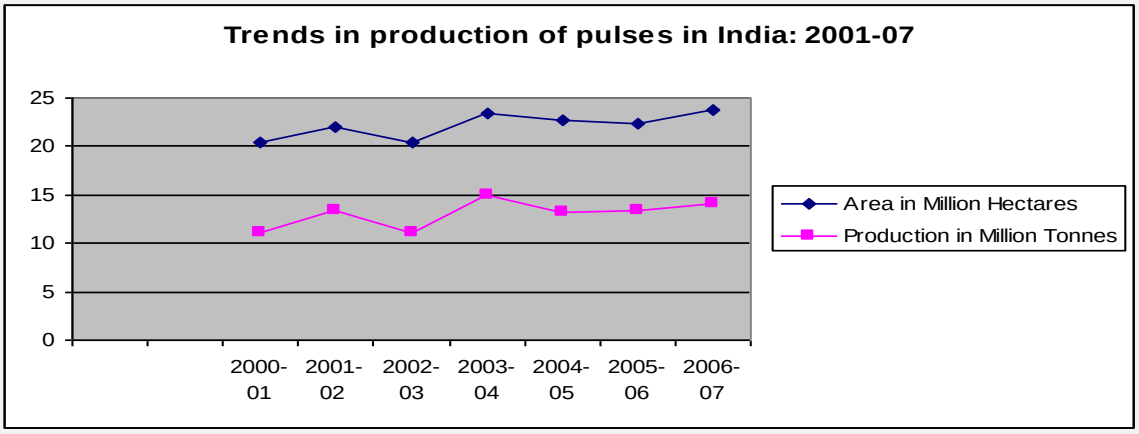
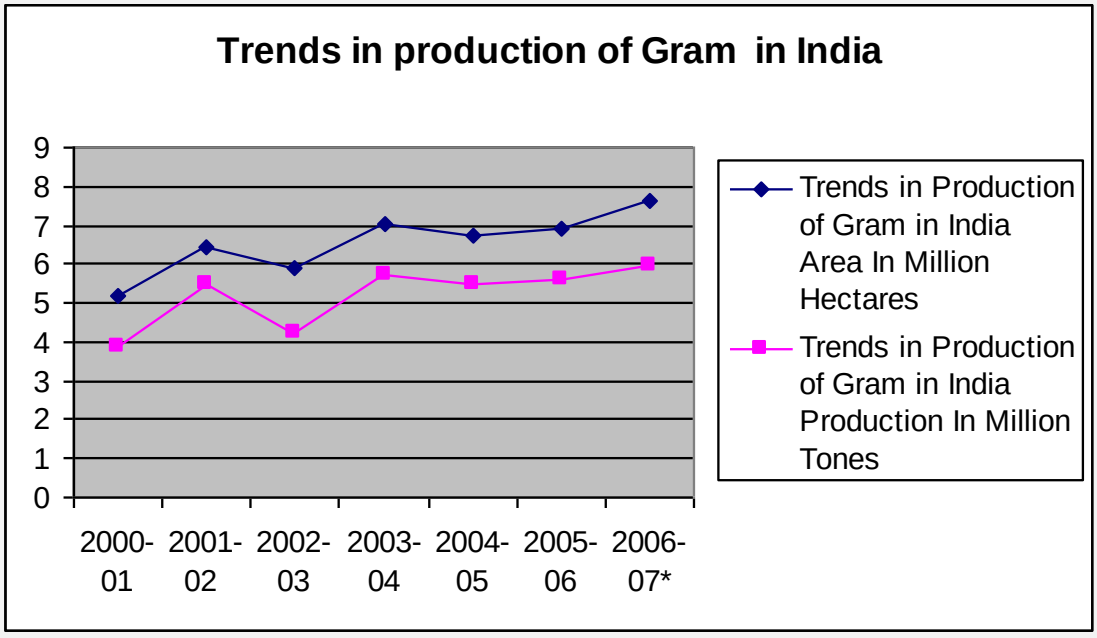


Table 6: Trends in production of major pulses in India: 2001-2006

Trends in Production of Gram in India						
	Gram		Arhar		Lentil	
Year	Area In million Hectares	Production In million tones	Area In million Hectares	Production In million tones	Area In million Hectares	Production In million tones
2000-01	5.19	3.86	3.63	2.25	1.48	0.92
2001-02	6.42	5.47	3.33	2.26	1.47	0.97
2002-03	5.91	4.24	3.36	2.19	1.38	0.87
2003-04	7.05	5.72	3.52	2.35	1.39	1.04
2004-05	6.71	5.47	3.52	2.35	1.47	0.99
2005-06	6.93	5.6	3.58	2.74	1.51	0.95
2006-07	7.63	5.97	3.53	2.51	--	--

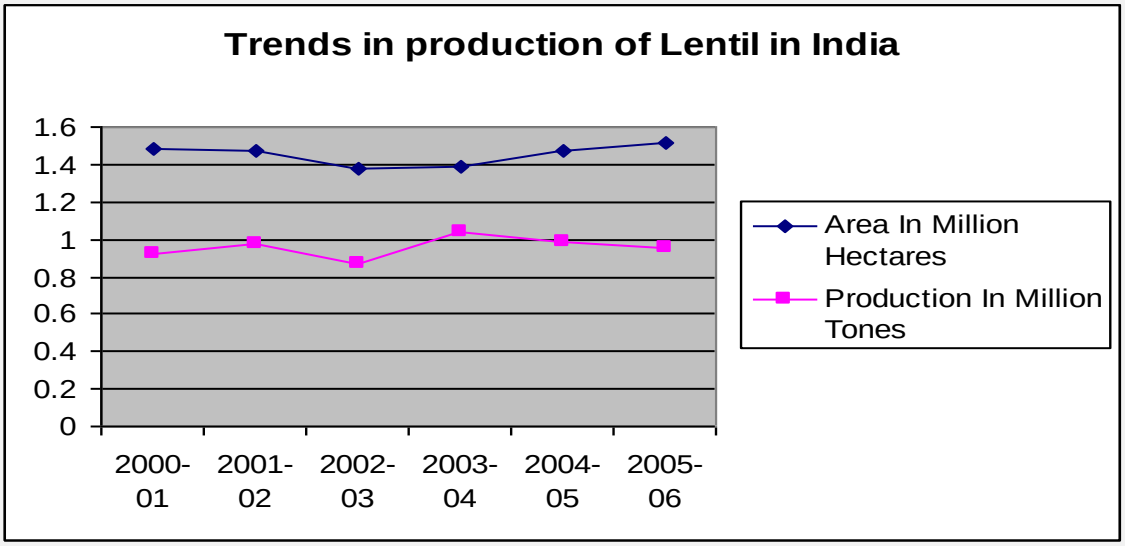
Source: *http://dacnet.nic.in/eands/agStat06-07.htm*

Figure 3: Trends in production of gram in India



Source: *http://dacnet.nic.in/eands/agStat06-07.htm*

Figure 4: Trends in production of arhar in India

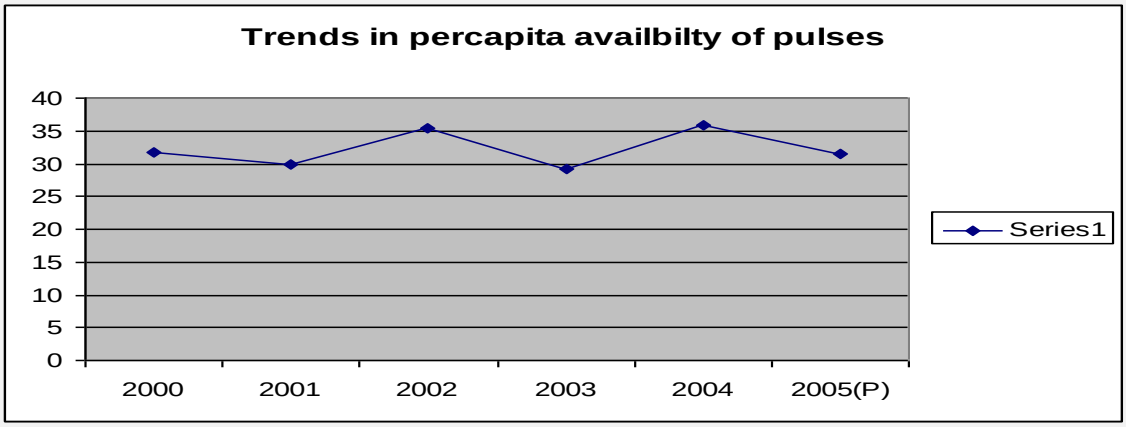


Source: http://dacnet.nic.in/eands/agStat06-07.htm

PULSES CONSUMPTION IN INDIA

Pulses are one of the major components of diet of the people in the country and is a major source of protein and energy. Virtually all people in the country, irrespective of vegetarian and non-vegetarian, consume pulses. Most pulses are consumed in shell and split form except few. In general the consumers prefer locally available pulses for consumption because of their perceived superior quality and taste. The demand for pulses is directly related to the income level of the people. During the last few years the per capita availability of pulses shows a declining trend. The percapita availability of pulses as on year 2005 stood nearly 35 grams.

Figure 5: Trends in percapita availability of pulses in India



Source: http://dacnet.nic.in/eands/agStat06-07.htm

Pulses trading in India

Pulses trading happen in India through wholesale, retail channels for both domestic and export import trade. The major wholesale markets for pulses in India include, Delhi's Naya Bazaar Mumbai (Vashi), Kolkata (Postha), and Chennai. The major wholesale markets comprise numerous sellers—about 150 and 200 wholesale pulse traders. Wholesale trade is fragmented because each seller operates independently. The markets in general do not maintain formal sales records, but sellers typically keep tallies of their own sales. Moreover, there is no official price reporting or regulation at any of the markets. Unlike at the retail level (particularly in urban areas), pulses are generally not branded. However, wholesalers pass origin information on to buyers.

Numerous layers exist in the marketing chain between farmers and consumers—as many as 6 to 7 levels, including brokers, wholesalers, millers, and retailers. However, the frequency of transactions is highest at the wholesale level, since commodities change hands several times with the assistance of brokers. Vertical integration, whether between importers and wholesalers, producers and wholesalers, or wholesalers and retailers, is not evident. Key factors preventing integration within the wholesale level include historical fragmentation in business transactions due to multiple layers of agents, the prevalence of multigenerational, family owned businesses, and a lack of regional or national firms. Efforts to vertically integrate would threaten many wholesale businesses and replace longstanding business practices based on experience and trust. Another factor that may inhibit vertical integration is the small-scale nature of pulse processing. The only grade and standard specification available to pulses is Fair Average Quality. The detail of marketed surplus available for the major pulses in the country is provided in the following table.

Table 7: Marketed Surplus Ratio of Pulses in different states: 2003-05

Crops	State	MSR	
		2003-04	2004-05
Arhar	Karnataka	32.16	97.42
	Madhya Pradesh	66.35	47.04
	Maharashtera	75.81	90.42
	Orissa	66.91	73.70
	Uttar Pradesh	41.81	70.32
All-India Weighted Average*		**60.27**	**79.52**
Gram	Bihar	77.64	65.55
	Madhya Pradesh	86.27	96.34
	Rajasthan	69.82	85.26
	Uttar Pradesh	69.61	96.25

All-India Weighted Average*		**80.28**	**93.76**
Urad	Andhra Pradesh	72.69	77.00
	Madhya Pradesh	83.72	90.63
	Maharashtra	84.37	88.74
	Orissa	47.64	66.13
	Rajasthan	83.02	58.62
	Tamil Nadu	98.53	93.03
	Uttar Pradesh	80.13	89.09
All-India Weighted Average*		**82.16**	**85.76**
Moong	Andhra Pradesh	97.17	61.20
	Maharashtra	87.44	77.91
	Orissa	54.22	51.16
	Rajasthan	85.44	86.73
All-India Weighted Average*		**85.16**	**76.79**
Lentil	Bihar	77.43	73.44
	Madhya Pradesh	80.16	91.92
	Uttar Pradesh	59.36	86.01
All-India Weighted Average*		**68.06**	**85.86**

Source: http://dacnet.nic.in/eands/agStat06-07.htm

Import and export of pulses

India is the net importer of the pulses. During 2006, the export of pulses 4.4 lakh MT against the import of 16.08 lakh MT. The export and import of pulses from the country from 2001 to 2006 are given in the following table.

Table 8: Import / export of pulses from India

Year	Import		Export	
	Quantity in 000Tons	Value in Rs Crores	Quantity 000Tons	Value in Rs Crores
2001	349.84	498.47	244.08	537.08
2002	2217.82	3160.18	161.64	369.13
2003	1992.29	2737.05	148.08	345.02
2004	1701.16	2251.20	150.09	322.57
2005	1300.00	1718.64	246.00	553.81
2006	1608.24	2346.90	444.61	1102.61

Source: http://dacnet.nic.in/eands/agStat06-07.htm

PULSES PRODUCTION IN ORISSA

In Orissa, pulses are cultivated in nearly 19 lakh hectares. The total pulses production in the state constitutes nearly 8.65 lakh MT which accounts 6.7 % of the total pulses produced in the country. Moong, biri and arhar are the major pulses available in the state which together accounts for nearly 75 % of the total pulses production in the state. Table given below provides the details of the area, yield and production of various pulses crops in the state.

Table 9: Pulses production in Orissa

Pulses production in Orissa: 2006-07			
Pulses crops	Area in 000 ha	Yield in Kg/ha	Production in 000 MT
Arhar	132.55	803	106.48
Mung	739.53	396	293.13
Biri	597.31	407	242.83
Kulthi	259.28	359	93.16
Gram	36.84	651	23.98
Cowpea	83.28	650	54.1
Fieldpea	23.49	709	16.66
Lentil	11.85	447	5.3
Other pulses	67.26	449	30.22
Total pulses	1951.39	444	865.86

Source: Orissa Agriculture Statistics 2006-07

PULSES PROCESSING CLUSTER, RAYAGADA

CLUSTER LOCATION

Rayagada district is one among the 30 districts of Orissa and is located in southern part of Orissa. The district was formed in 1992 by carving some part out of Koraput district.

The district comprises of two subdivisions (Rayagada and Gunupur), 11 Blocks, 171 Panchayat and 2245 inhabitated villages. The total geographical area of the district consists of 7584 sq.km. The district has a total population of 8.23 lakh which comprises 2.24 % of the population of the state. Nearly 70.32% of the population belong to scheduled caste (14.28%) and scheduled tribe communities (56.04%). The district is predominantly rural where more than 90 percent of people reside in villages. Poverty is rampant in the district with more than 72 % of the rural families belong to BPL category. The literacy rate in the district is very low (35%) compared to the state average of (65%). Female literacy is only 24.3%. Agriculture forms the major economic activities of the people in the district. Out of the total geographical area (7584 sq.km), nearly 80 % is cultivable land. The gross cropped area consists of of 2.29 lakh ha with a cropping intensity of 133.

ODISHA

Area under major crops consists of food crops (147170 ha), cereals (45867 ha), pulses (34100 ha) and oil seeds (27500). Major crops include paddy, maize, ragi, biri, mung, kulthi, thill and ground nut. The district receives normal rainfall of 1521 M.M. The irrigation facility is available in only for nearly 30% of the cultivable land. Out of the total farming communities (118395) nearly 72% belongs to small and marginal farmers.

Table 10: Socio-economic profile of Rayagada district

Socio-Economic details of Rayagada district			
	Rayagada	Orissa	% to total
Total population in '000 No	831	36804	2.26
Total Male population in '000 No	410	18660	2.20
Total female population	421	36804	1.14
Scheduled Caste	116	6082	1.91
Scheduled Tribes	463	8145	5.68
Population density per sq. km	118	236	--
Literacy rate (%)	36.15	63.08	--
Geographical area Sq. km	707	15571	4.54
Cultivated area (000ha)	193	6180	3.12
Net sown area(000ha)	143	5654	2.53
Gross cropped area (000ha)	241.35	8960	2.69
Kharif cropped area	183.46	6135.87	2.99
Rabi cropped area (000ha)	43.44	2487.62	1.75
Normal rainfall in mm	1285.9	1451	--

Source: www.rayagada.nic.in

PULSES PRODUCTION IN THE DISTRICT

Rayagada district is one among the major pulses producing areas of the state. Out of the total pulses cultivated in the state (19.52 lakh ha), Rayagada accounts for nearly 40 % of the cultivated area and accounts for nearly 30 % of the total pulses production in the state. Table given below provides the area production and productivity of pulses in the district. It should be noted majority of the cultivation (68% of the cultivated area) happens in Kharif season and the rest 32% in Rabi season. The average productivity of the crop (583 kg/ha) is the highest of the state average of 444 kg/ha and comparable with national average of 598 kg/hectares. The details of area, production and productivity of the major pulses in the district are provided in the following table. The total area under pulses in the district consists of nearly 49000 ha with average annual production of 28000 MT. The major pulses based on area under cultivation consist of arhar (17220 ha), biri (11250 ha), cowpea (8470 ha) and Kulthi (6640 ha).

Table 11 : Area, production and yield of pulses in Rayagada: 2006-07

	Rayagada			Orissa		
	Kharif	**Rabi**	**Total**	**Kharif**	**Rabi**	**Total**
Area in '000Hec	33.81	15.31	49.12	708.3	1243.09	1951.39
Yield (Kg/ha)	664	405	583	482	422	444
Production in '000 MT	22.44	6.2	28.64	341.73	524.13	865.86

Source: Compiled from Orissa Agricultural Statistics: 2006-07

Table 12: Pulses production in Rayagada: 2006-07

	Rayagada			Orissa		
Pulses crops	Area in 000ha	Yield in Kg/ha	Production in 000 MT	Area in 000ha	Yield Kg/ha	Production 000 MT
Arhar	17.22	929	16.00	132.55	803	106.48
Mung	3.71	229	0.85	739.53	396	293.13
Biri	11.25	305	3.43	597.31	407	242.83
Kulthi	6.64	400	2.66	259.28	359	93.16
Gram	0.14	460	0.06	36.84	651	23.98
Cowpea	8.47	524	4.44	83.28	650	54.10
Fieldpea	0.84	824	0.69	23.49	709	16.66
Lentil				11.85	447	5.30
Other pulses	0.85	600	0.51	67.26	449	30.22
Total pulses	49.12	4271	28.64	1951.39	444	865.86

Source: Compiled from Orissa Agricultural Statistics: 2006-07

CLUSTER DETAILS

A synoptic view of the Rayagada pulses processing cluster is provided in following lines:

- There are 21 pulses processing units (micro enterprises] in the cluster. These micro enterprises are owned by women entrepreneurs belong to the BPL families. In addition to this, a small scale unit is also present in the cluster
- The average age of the unit is 6.5 years. The average age of the units is 6 years
- The processing capacity of the units ranges fro 20 to 120 quintal per month. The average processing capacity is 47.5 quintals per month.
- Yearly processing of units in the cluster ranges from 3 quintals to 273 quintals, the average yearly processing being 53.8 quintals
- Almost all the units received financial assistance from the bank. The amount of bank loan ranges from Rs. 40000 to Rs. 280000.
- Almost all units have received revolving fund assistance of Rs. 20000.

- Yearly turnover of the units ranged from Rs18000 to Rs. 1700000
- Almost all units reporting operating profit. The profit amount ranges from Rs 1200 to 83000.
- The DIC, DAO, DRDA and Financial Institutions in the district play a very proactive role in the business development of the cluster.

SL No	Name of the Unit	Year of strating	Age of the unit	No. of Members	Assets with	Monthly Production capacity in Quintals	Average yearly Production [Quantity in Quintals]	Average yearly Business in Rs	Average yearly Profit	Bank Loan	Revolving Fund Assistance
1	Jagat Janani	3/12/2002	5	12	Dal Mil/CFC	50	138	378136	37813.33	258000	Y
2	Ma Singhabahini	3/12/2003	5	12	Dal Mill/CFC	50	53	137314	13793.33	70000	40000
3	Mahila Vikas	3/12/2002	6	15	CFC/Da l Mill	50	103	228054	35908	0	40000
4	AgniGangama	06	6	12	CFC/Da l Mill	50	15	52500	5250	220000	0
5	Mother Teresa SHG	3/12/2002	5	15	CFC/Da l Mill	50	33	89080	12583	85000	0
6	Lakshmi Narayan SHG	8/7/2001	6	20	CFC/Da l Mill	50	34	46806	13693	160000	0
7	Maa Annapurna SHG	25/05/2001	6	17	CFC/Da l Mill	50	21	49365	8287	120000	20000
8	Kalyani Mahila Sangha	10/12/2002	5	15	CFC/Da l Mill	20	3	6287	1047	210000	0
9	Samartha SHG	19/09/2001	7	11	CFC/Da l Mill	20	38	41435	5467	150000	20000
10	Priya SHG	19/09/2001	7	10	CFC/Da l Mill	20	5	12650	2000	288000	0
11	AgniGangama	25/10/2002	5	10	CFC/Da l Mill	120	28	65846	11133	108000	0
12	Bangaramma SHG	1/10/2002	5	12	CFC/Da l Mill	120	253	527766	83790	270000	20000
13	Mahaveer SHG	5/5/1997	10	10	N0	20	67	148817	24093	100000	20000
14	Jagabalia SHG	5/5/1997	10	10	CFC/Da l Mill	20	29	98509	11115	80000	20000
15	Ma Jagat Janani SHG	5/5/1997	10	12	CFC/Da l Mill	20	9	21292	3467	80000	0

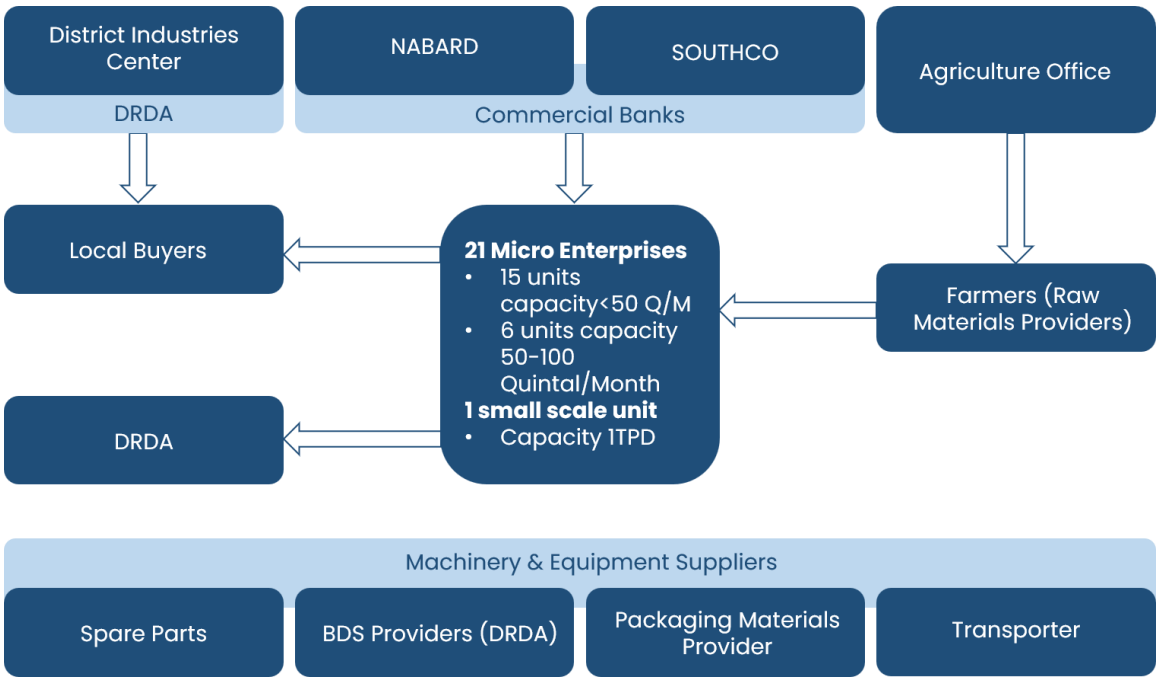
16	Ugratara SHG	20/08/2001	6	10	CFC/Da 1 Mill	30	7	16867	2667	280000	0
17	Manikeswari SHG	27/02/2001	7	10	n	0	0	0	0	0	0
18	Sathya Sai SHG	3/12/2003	4	11	CFC/Da 1 Mill	100	257	571376	56813	145000	0
19	Indira Mahila Sanga(A)	19/09/1999	8	13	CFC/Da 1 Mill	50	12	29767	4933	180000	0
20	Jyothi SHg	30/10/2001	6	11	CFC/Da 1 Mill	20	3	6949	1200	160000	0
21	Deepa Mayee SHG	5/7/2002	5	11	CFC/Da 1 Mill	50	25	59257	10143	180000	0

Source: Field Survey

EVOLUTION OF THE CLUSTER

Pulses production is a major economic activity in the district. However, the district does not have major pulses processing units till recently. There existed only one pulses processing unit in the district. Way back in 2002-03 a government sponsored Special SGSY programme has been implemented in the district. As part of the programme 21 pulses processing units were started. These units were owned by women entrepreneurs. These units are involved in procurement, and primary processing of pulses and marketing in the local market.

Present Cluster Map



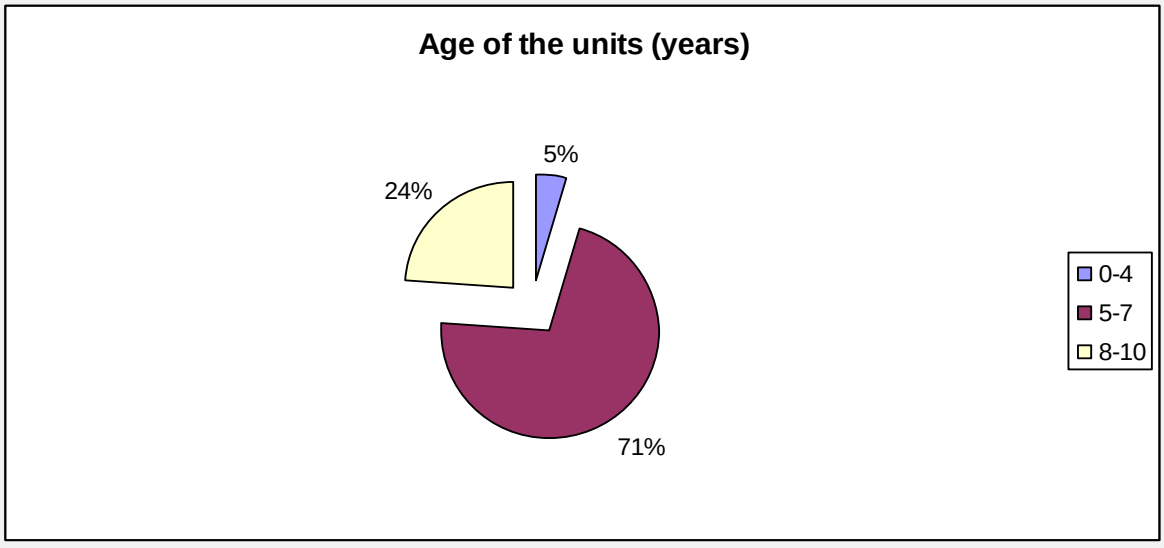
Production Process	Quantity	Price/Cost	Total Value	
Raw Material	**100**	**2800.00**	**2800.00**	
Transportation		**10**	**2810**	
Cleaning/soaking/drying		**100**	**2910**	
Dehusking				
Electricity		**25**	**2935**	
Labour		**30**	**2965**	
Final Product(Dal)	**90**		**2965**	
Wastage	**10**	**15**	**150**	
Packing (50 kg)		**20**	**2985**	
Production cost per kg		**33.16**		
Sales Price/kg				
Government(DRDA)		**35**		
Local sales		**38**		

ANALYSIS OF BUSINESS OPERATION

NUMBER OF ENTERPRISES

There are 21 micro enterprises involved in processing of pulses in the cluster. These enterprises are owned by women entrepreneurs in the district. These units were in existence for the last 5-6 years. Each unit consists of 10-15 members belong to the BPL families. Majority of the members belong to Scheduled Tribe communities. These units procure pulses from farmers and process in their units. The final product is sold in the local market as well as through CBPO.

Figure 7: Age profile of Enterprises



Source: Field survey

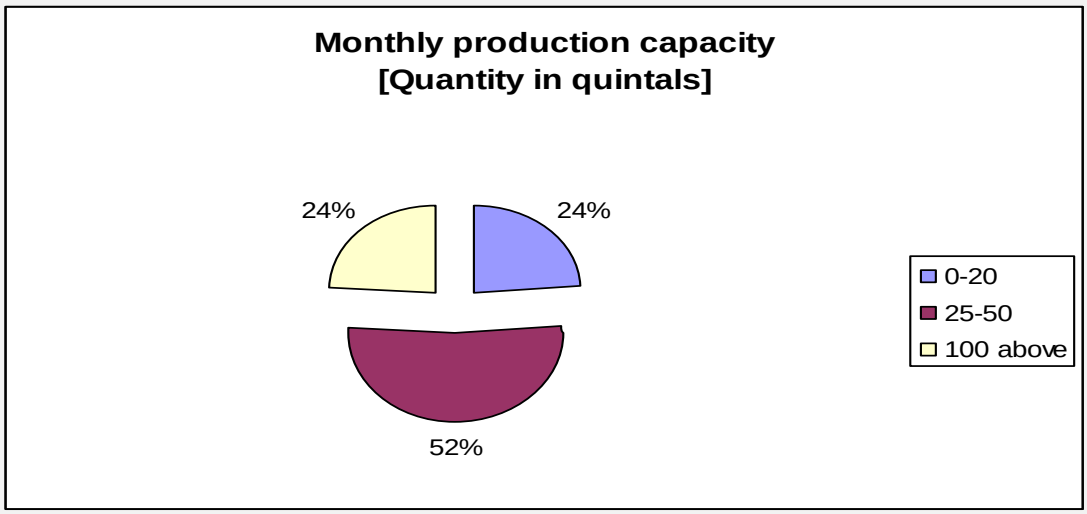
PRODUCTION PROCESS & TECHNOLOGY

The units have semi automated mini dal Mills. These machineries are sourced from Bihar. The DRDA arranged the procurement of the machineries on behalf of the units. The cost of machineries ranges from Rs.75000 to Rs.115000

PROCESSING CAPACITY

The total installed capacity of the units consists of 960 quintal per month. The processing capacity of nearly 50 % of the units falls in between 25-50 quintals per month. The average capacity of the units is 45.6 quintals per month. The units are very small and operating in a low scale. However it has the significance of providing employment and source of income of the members who belong to the BPL families.

Figure 8: Monthly production capacity of the units



Source: Field survey

In the case of nearly 70 % of the units the yearly production falls below 50 quintals. Majority of the units are operating far below their processing capacity. The production process is constrained by the seasonality of the crop. Many of the units are not able to operate through out the year for non availability of pulses in off-season. Nearly 20% of the units have yearly processing of above 100 quintals of pulses.

BUSINESS TURNOVER

The classification of the processing units based on the average yearly business is provided in the following figure. Turnover of nearly 30 % of the units falls below Rs.25000, whereas in the case of 38% of the units the annual business turnover is above Rs.1-2 lakhs.

Figure 9: Average yearly Production

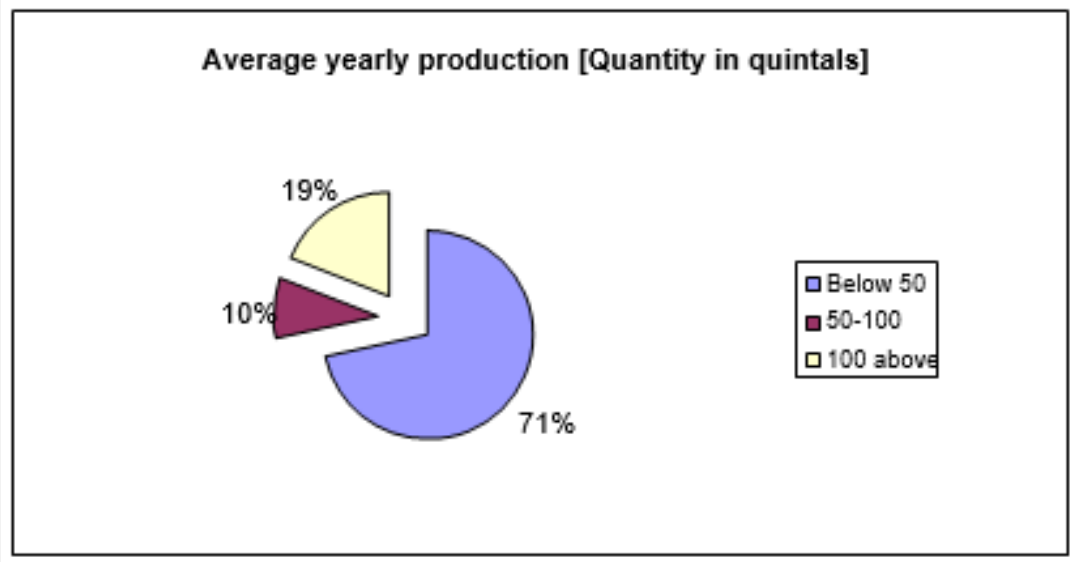
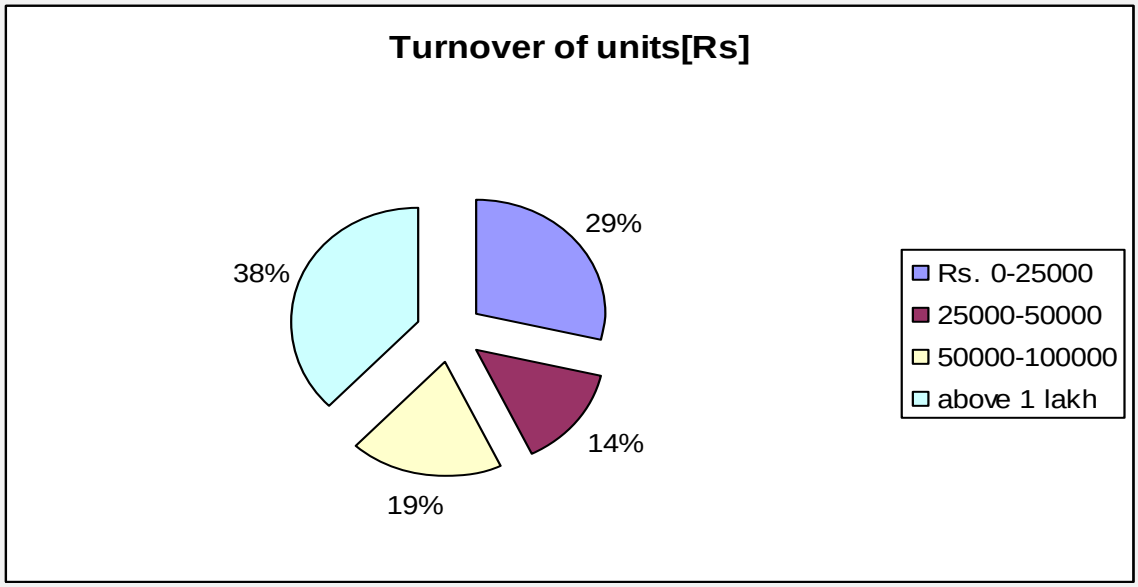


Figure 10: Turnover of the units

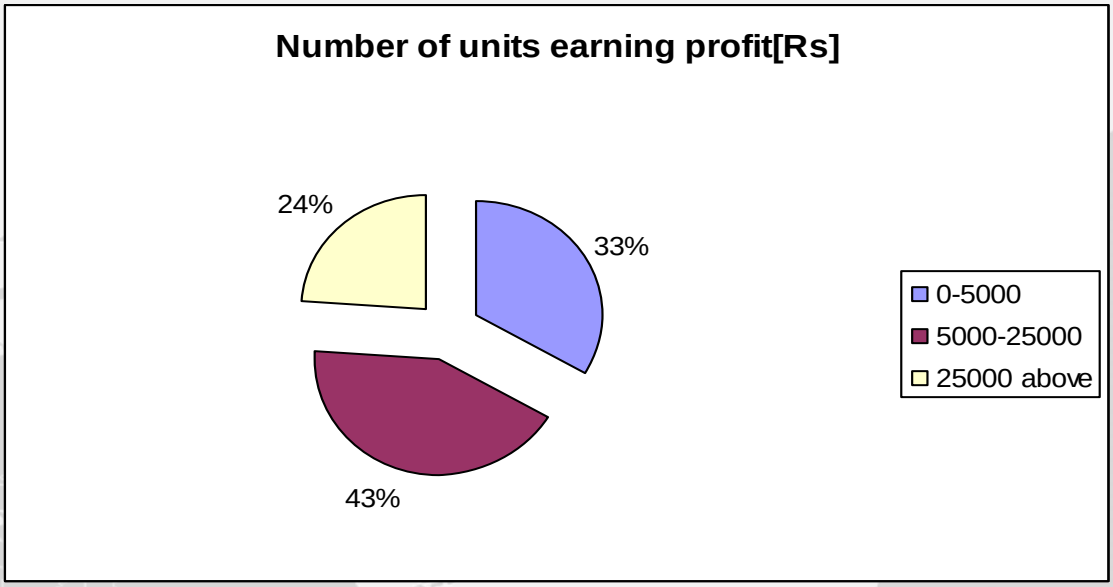


Source: Field survey

PROFIT EARNED

Almost all the units reported making profit out of their operation. The average yearly profit ranged from Rs. 1200 to Rs 83000. The classification of units based on the average profit earned is provided in the following figure. The profit earned by nearly 30% of the units falls below Rs.5000 where as nearly 25% of the units earned profit above Rs.25000.

Figure 11: Number of units earning Profit

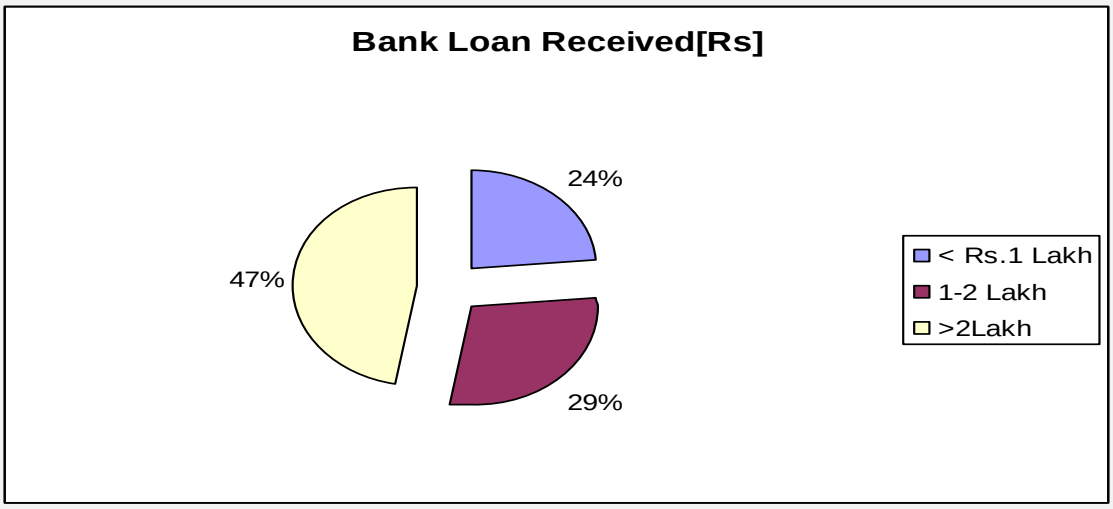


Source: Field survey

CREDIT ISSUES

Almost all the units received financial assistance from the bank. All the units were set up under the self employment programme called SGSY. In addition to the loan amount almost all units received a revolving fund assistance of Rs.20000. The amount of bank loan ranged from Rs. 40000 to Rs. 265000. The units are facing difficulties for arranging working capital. Due to shortage of working capital, many of the units are unable to stock the raw materials and is constrained to operate only 180-200 days in a year.

Figure 12: Financial assistance receive by the units



Source: Field survey

MARKETING ISSUES

At present all the units have marketing arrangement with DRDA. The units supply their produce to DRDA which in turn is used for supply to Schools and Anganwadi centers under the mid-day meals programme. One of the difficulties facing by many of the units is the delay in payment by DRDA. In most cases the payment is delayed by three to four months. The local sale is very limited. One of the difficulties in local sale is the inability of the entrepreneurs to find orders for the product. However there exist potential for local sales of the products since dal is one of the essential item in the daily food habit of the people in the locality. Another difficulty is the packaging. None of the units have the facility to package for retails sales. At present the units sell their products in 50 kg bags.

INFRASTRUCTURAL ISSUES

All the units are well connected with road facilitating procurement of raw materials. All units have the electricity connection as well. The quality of power supply is very weak with low voltage and frequent power failure. The units lack facilities for storage and drying. Due to lack of storage facilities the produce are eaten by rats causing loss in operation.

PRESENSE OF SUPPORT INSTITUTIONS IN THE CLUSTER

The cluster has the presence of the following support institutions

- District Rural Development Agency
    - Facilitating formation of units and financial assistance in terms of subsidy and provision of training
- District Agriculture Office
    - Supporting farmers to produce HYV seeds and other production support
- Commercial Banks
    - Providing financial support to existing units

MAPPING OF SOCIAL CAPITAL

The cluster has the presence of 21 SHGs spread over different villages. These SHGs consists of 15-20 members. These SHGs are involved in procurement of raw materials for the units. These SHGs have regular weekly meetings. These meeting are often attended by DRDA officials. The members have business relations with the commercial banks in the area. The presense of SHGs, and frequent interaction with officials of DRDA, and Commercial Banks have resulted in the formation of social capital in the district.

PRESENSE OF BDS IN THE CLUSTER

- At present DRDA is providing various support facilities for the units. The support facilities include sourcing of machinery, provision of packaging materials and assistance in marketing the products.

SWOT Analysis of the Cluster

The various strengths, weaknesses, opportunities and threats of the pulses processing cluster is provided in the following paragraphs.

Strengths

- Raw material availability: Rayagada is one of the pulses production center in the state. Pulses cultivation happens nearly 49000 hectares and the district contribute to nearly 3% of the total pulses produced in the state. Arhar, mung, kulthi and cowpea are the major pulses crops in the district. Arhar is cultivated in nearly 17000 hectares and the production is nearly about 16000 MT which contribute 15% of the arhar produced in the state. The productivity of the crop is also very high (929 kg/hectares) compared to the state average of 803 kg/hectares.
- Agro-climatic condition: The agro-climatic condition is conducive for pulses production in the district. Most of the production happens (nearly 75% of the production) in Kharif season and the rest in Rabi season.
- Institutional support: The District Agriculture Office, Nabard, DRDA, District Industries Center and Financial institutions play a very proactive role in the development of the cluster. The institutional support can be utilized properly for further development of the cluster bringing synergy in operation.
- Quality products: The products of the units are of good quality and have wider customer preference because of its freshness, superior quality and taste.
- Assured market: There exist assured market for the products of the units since arrangements have been made for purchase of products through CDPO for distribution for mid day meal. In addition to that the units also sell their products in local market.
- Locally adaptable technology: Each unit has a semi automated dal mill. The technology used is very simple and is adaptable to local condition. The machine can be operated with minimum technical expertise. The cost of the machinery is also less and is available in the local market.

Weaknesses

- Seasonality of production: One of the constraints in production is the non-availability of raw materials in off-season. Majority of the production (nearly (75%) happen in Kharif season. Because of the seasonality of the product, the units face difficulty in procurement of products. Most of the units operates only for 180-200 days in a year
- Weak infrastructure: The infrastructure available with the units is very weak. Apart from the semi automated machine and the work shed the units have no facilities for cleaning, drying, storage, and packing. Because of the lack of storage facilities, many of the units are not able to operate in off-season. Inadequate storage facility also causes damage of the raw materials by pest attack and rat eating.
- Inefficiency in production: The machinery available with almost all the units are of is very small with a monthly production capacity of 5 tones. The machine is of one HP which is very inefficient in operation resulting wastage of raw materials (10-15%). The entrepreneurs are of the opinion that the machine should be of at least 2 HP.

- Poor power supply: The power supply in the rural areas of the district is very erratic. Power failure is quite frequent and the voltage is very low to operate the machines.
- Low scale of operation: The volume of operation of the units is very low at present. Many of the units are operating far below their capacity. The low volume of operation is caused by non-availability of raw materials in off-season and lack of finance for meeting the working capital requirement of the units. None of the units have the facilities for stocking the raw materials.
- Low price realization: At present the price realization is very low(Rs.35 per Kg). The entrepreneurs generally supply the products to CDPO. One of the issues facing many of the units is the non-timely payment from CDPO. The price in the local market ranges from Rs.38-40 per/kg.
- Lack of local sales: Despite having huge demand for the products in the local market, the units were not able to capitalize the potential for marketing. One of the reasons for this is the low level of education and exposure to business operation. These units have no facilities for packaging the products.
- Low profitability: Even though may of the units report operating profit, the amount of profit is very low. The low volume of operation constrains the units to explore the potential for increasing the profitability.

Opportunities

- Increasing demand: One of the opportunities for the business in the cluster is the increasing demand for the products. In general people prefer locally available pulses for their freshness and superior quality. Irrespective the food habit of the people pulses are highly demanded.
- Setting up of large scale units: The volume of operation of the units is very low. There exist opportunities for setting up large scale pulses processing units in the district.
- Upgrading technology: The technology used at present is traditional and is very inefficient. There exist opportunities for upgrading the technologies and improving the efficiency of production process. The technology available with CFTRI can be explored.
- Improved price realization: The present level of low price realization is due to lack of marketing effort. Considering the huge demand for the products even in the local market, the market opportunity can be capitalized for the benefit of the units in the cluster. It requires efforts in ensuring quality of products, proper grading and standards, and proper packaging.
- Profitability; Considering the availability of raw materials, increasing demand, increased price realization, availability of technology and financial assistance, pulses processing is a viable and profitable business. This opportunity can be explored by the potential entrepreneurs.

- Poor power supply: The power supply in the rural areas of the district is very erratic.

- Potential for organic products: In general the demand for organic products is increasing in domestic as well as foreign markets. There is good market potential for organic pulses products. The price realization for organic products is also very high.

Threats

- Seasonality of operation: One of the threats facing many of the unit is the seasonality in operation caused by non-availability of raw materials in off-season. The units are operating only for 18-200 days in year.
- Competition from established units: The competition from the established units is very high. In order to compete with the established units, the units in the cluster have to improve their business operation.

Figure 13: SWOT Matrix of the cluster

Strengths	Opportunities
• Raw material availability • Conducive agro-climatic condition • Quality products(Freshness) • Assured market • Institutional support • Locally adaptable technology	• High demand for the products • Potential for high growth • Scope for polished products • Standardised Packaging
Weaknesses	**Threats**
• Seasonality • Weak infrastructure • In efficiency in production • Poor power supply • Low volume of business • Lack of marketing support • Low Quality of products resulting low price realization • Delayed payment • Low profitability	• Competition from traders • Seasonality in operation

KEY ISSUES FACING THE CLUSTER

The various issues facing the cluster which have been identified during the participatory workshop are provided in following lines.

1. Lack of hygienic cleaning and processing facilities
2. Lack of drying yards
3. Lack of storing and packing facilities
4. Lack of facilities for polishing
5. Inadequate credit facilities for meeting working capital requirement.
6. Shortage of power supply
7. Under utilized local market
9. Inadequate market information
10. Lack of facilities for grading, standardization and quality control
11. Difficulties to market the products [local sales]

CLUSTER VISION AND STRATEGY

- Increasing the capacity utilization of the existing units to the level of 60% to 70% within 2-3 years
- Developing post harvest processing facilities for drying , storage, processing and packaging
- Marketing the products under a common brand name
- Credit linkage of all existing units with the banks for availing working capital

BROAD STRATEGIES

- Establishment of post harvest processing facilities for drying, storage and processing
- Facilitating credit linkage to financial institutions and help the members to get easy credit and subsidy assistance from government under various schemes
- Inculculating entrepreneurial spirit and business skills of existing entrepreneurs
- Improvement of technology and facilitating adoption of new technologies
- Tailoring production to meet increased customer satisfaction
- Improvement of packaging and grading
- Improving the raw material quality by encouraging farmers to cultivate high yielding variety
- Promotion of an SPV for co-ordinating various activities for overall improvement of units in the cluster
- Creation of Common facility centers for procurement, storage, processing and packaging
- Provision of marketing support to entrepreneurs

CLUSTER ACTION PLAN

Based on the assessment of the strengths and issues facing the cluster the following action plan has been proposed for further development of the cluster in the district.

- Training on post harvest operation involving , drying, and processing
- Organising awareness and training programmes on grading, standardization, and quality standards
- Facilitating interaction of various cluster participants such as entrepreneurs, DIC, DAO, NABARD, Banks and Financial institution, Raw material suppliers, equipment and machinery providers etc.
- Awareness creation on various schemes and programmes available with various government department, banks and financial institutions. Information with regard to various government programme, qualification, criteria for selection, mode of assistance, etc should shared in the awareness creation workshops
- Organising exposure visits to similar clusters to understand best practices
- Business skill development workshops: The business skill development workshops should focus of various facets of business operation including training on operation of machineries, maintenance, business opportunities identification, identification of markets, mobilization of finance and marketing, maintaining of records, accounts etc.
- Provision of market information: Timely market information is a key element in the marketing of the products. The market information should be focused on weekly price movements, demand and supply information, information on potential buyers etc.
- Facilitating common brand: A common brand name can be considered for the products of the cluster. The common brand name with standard quality specification will help to attract potential customers from within and outside the state.
- Organizing buyer seller meets: In order to facilitate the marketing of the products of the cluster buyer-sellers meets may be organised on a regular basis.
- Participation in trade fairs and exhibitions
- Establishment of retail outlets: In order to market the products in the local market, retail outlets can be opened in prime market locations.
- Facilitating networking with potential buyers: It is possible to explore captive market for pulses with proper networking and negotiations it prospective buyers. Mid- day meals schemes in schools, Professional college hostels, hotels and tea shops etc are some of the potential market which can be explored.
- Setting up of packaging units
- Facilitating quality certification

- Facilitating BDS Provision in the cluster: Business opportunities in the cluster can be exploited in its potential through the provision of business development services. The provision of BDS should adopt a single window approach for facilitating identification of potential entrepreneurs, provision of business counseling, preparation of business plans, facilitating registration of new and existing units, networking with banks and financial institutions etc.

IMPLEMENTATION

The proposed action plan can be considered for implementation within a period of three years. The implementation of the activities should focus on bringing synergy among various cluster participants. Efforts should be made to have a cluster centric approach in implementation of the proposed activities. The service of a cluster development agent may be considered to bring the synergy in operation. The cluster development agent should work in the cluster at least for a three year period on a regular basis and should play a key role in strengthening the social capital and level of confidence among various cluster participants. In delivering the responsibilities the CDA should act as a mentor and, business development counselor for the potential entrepreneurs in the cluster.

Conclusion

The pulses processing cluster in the district offers tremendous scope for growth and development. There exists considerable demand for the products within and outside the state. It requires sincere attempt from various cluster participants and support agencies for providing expertise for the future growth of the cluster. The cluster will also support ensuring the food security in the state.