Status paper on marketing channels and pricing of small millets

Market Chain Actors in Small Millets (Eg :Barnyard Millet)

Farmers

Small local traders in village

Big traders

Wholesalers

Small mills at village level

Processers at Nashik

Brokers at Bangalore

Processers at TN (Semi Processing)

Wholesale Marketers

Processers at TN (Full Processing)

Retailers

Consumers

Farmers

- **Present Situation:**
- Sale immediately after harvest to repay the loan availed for cultivation
- In general, storage space is not available for the farmers
- Some store in their home
- Traders do not come later for small quantity

Issue

Mostly, price is low at the time of harvest

Farmers

Ways to overcome the issues

- Farmers can aggregate the produce and store in the regulated market or in the private godowns and get receipts for availing the loan from the regulated market and banks

Small Traders at Village level - Procurement

Present Situation:

- Second chain Actor in Market chain next to farmer
- Dwell in the village itself
- Deal with only small quantity of produce –With in 15 to 20 quintal a day in his village or nearby villages (around 60 tons in a year) once the transportable quantity is pooled, they market the stock to the next chain actor(Big traders) on the same day.
- Collect 2 kgs of grain in excess from farmers

Small Traders Contd…

Present Situation

- Operate with little investments or sometimes on faith with among the farmers.
- Mostly they get advance and gunnies from big traders for procurement.
- **Procurement price from the farmers Rs.1900/quintal for barnyard millet and incur the expenditure of Rs.20 towards transportation and retain the margin of Rs.40/quintal**

Small Traders at Village level - Procurement

- Advance will be adjusted on the same day or maximum on next day retaining 3% margin on the value of the products, which is Rs.60/per bag of 100 kgs.

Small Traders Contd…

Issues:

- Do not take up any improvement in quality such as drying or cleaning for want of facilities
- Quality may be affected if drying is not taken up.

Ways to overcome the issues:

- Drying and primary cleaning of the produce at village itself
- Direct selling from farmer to whole salers/processing mills by aggregation of the produce.

Big Traders

Present Situation:

- Third Chain actor in market chain
- Operate in the close proximity of many villages mostly through small traders.
- Some farmers directly bring their produce to the big traders
- Mostly multiple products are traded based on the season

Big Traders Contd…

- They trade small millets for a month or two in the harvesting period.
- Trading volume of small millets is around 150 to 170 tons in a year.
- **Purchase price from the small traders : e.g for barnyard millet Rs 2000/quintal and incur an expenditure of Rs.65 towards the gunnies ,transportation and labour charges and retain the margin of Rs.85/quintal**

Big Traders Contd…

- Charge 3 % commission from the small traders.
- Take up drying and cleaning in their own drying yard.
- Big traders sell the produce to whole salers (Fourth chain actor)

Big Traders Contd…

Issues

- They do not store the produce for longer period

Ways to overcome the issues

Direct selling of the produce by farmers to the whole salers/processing mills

Whole Salers (Procurement)

Present Situation:

- Fourth chain actor in market chain
- Have their own shops and mandies with transport and storage facilities
- They are directly linked with processing mills through brokers at Bangalore.
- They reimburse cost of the gunnies , transport, loading and unloading charges to the traders & farmers.
- Charge commission of 3% from traders and 4 % from farmers.
- **Purchase price from the big traders : e.g for barnyard millet Rs.2150/ quintal and incur expenditure of Rs.125**

Whole Salers (Procurement) Contd…

- They Pay Rs.5 /bag of 100 kgs to the brokers at Bangalore who link them to the millers
- Assumed trading volume will be 10-25 tons /day and total quantity handled by them per year varies from 5000-15000 tons

Whole Salers (Procurement) Contd…

Issues

- Higher Investment
- Depend mainly on big & small traders for procurement
- Need big godown facilities
- Market only through brokers at Bangalore and do not have direct contact with the mill owners.
- Sometimes loose money due to non payment by mill owners towards quality problem

Whole Salers (Procurement) Contd…

Ways to overcome the issues

- Avail loan from bank for working capital and subsidy from government for godown construction
- Have to ensure the quality at the time of procurement

Brokers

- Act as catalyst between whole salers & mill owners.
- Realizing Rs 5/bag commission on either side

Issues

- Adding further expenditure on price spread

Way to overcome the issues

- Could not over come – Building confidence on either side through brokers.

Small mills

Present Situation:

- Small processers in the village
- Available in the rice mills of the villages to under take dehusking of small millets for the domestic consumption.
- Processing charges Rs.5 to 6 /Kg or compensated with bran during processing

Small mills Contd..

Issues

- Time consuming process as the grains could be polished by 6 to 8 process
- Stones will not be removed completely thus affects the palatability of grain rice
- Infestation of pest is high due to un hygienic processing.
- Do not gain momentum because of time consuming process

Processing mills(semi process & Fully process)

- Mostly semi processing is taken up for Barnyard millet and kodo millets in Tamilnadu and fully processing at Nashik.

Semi polishing

- **semi processing mills procure from the whole salers : e.g for barnyard millet Rs.2350/ quintal and incur expenditure of Rs.650 for processing and retain the margin of Rs.100 /quintal**
- **1st stage :** Using destoner machine, small stones and sand are removed and the cleaned grains are passed in to the first polisher where 15 % dehusking and 10 % polishing is

Processing mills(semi process & Fully process) Contd…

- **2nd stage**: After removal of the husk in the blower ,partially dehusked grains are passed into the second polisher where 20% dehusking and 20% polishing are completed.
- **3rd stage:** Again the husks are blown off and the remaining grains are passed on to the next polisher for further process
- After 7 such polishers, semi polished grains are stocked and sent to Nashik for full polishing.
- All the polishers are interconnected with elevators

- Grain recovery would be 65-70% in semi polishing.

Full Polishing

- **Full processing mills procure from the semi processers E.g for barnyard millet Rs.3100/ quintal and incur expenditure of Rs.990 (345+645) towards transportation & processing charge and retain the margin of Rs.410/quintal**
- **Stage 1 :**Grading the raw grains before processing
- **Stage II :** Cleaning the raw materials –De stoning, removal of foreign materials like sand ,mud and other admixtures of other crops and materials

Full Polishing Contd…

- **Stage III:** Cleaning & polishing
- The grains passed through 15 to 17 times. The semi processed material received from semi processing units is polished with cone polishers from the 7th stage and the final product is sampled into 3 form:

  1st grade:100% white grains

  2nd Grade: White grains 50% and Red grains 50 %

  3rd Grade: White grains 25% and Red grains 75%

- The 3rd grade sample will not be used for reprocessing and is considered as an output under the name bran.

Full Polishing Contd…

- **Stage IV :** Colour sorting

  one or two colour sorters are kept to get 100 % white grains

- **Stage V : Packing**

  Packing size – 50 kgs,30 kgs in jute/poly oven bags:1 kg or ½ kg in laminated packing or Nitrogen infused packing

Full Polishing Contd…

Output

Finished product:45-50 % (100% white grains)

Obtained from 70 % from 65% semi processed grains)

Bran:17%

Husk:35%

Foreign Material : 2.5 %

Issues:

Loss of lot of nutrients in full polishing process

Ways to overcome the issues:

Finding out optimal level of polishing to conserve more nutrient and ensure the palatability

Whole salers of processed rice

Present Situation

- Non availability of consistent, uniform quality of the product
- Buy materials from the mill owners.
- Frequent fluctuation of price
- Mostly un organized marketing
- **Whole salers buy at the rate of Rs 4500/quintal from millers and incur an expenditure of Rs 200 towards transport ,keeping the margin of Rs.300 /Qtl**

Whole salers of processed rice Cont…

Issues:

- Higher investment
- Lack of cold storage facilities
- Poor shelf life
- Slow movement of sales
- Lack of promotional support
- Volatile price

Whole salers of processed rice Co

Way to overcome the issues:

- Cold storage facility to be ensured in the whole saler locations
- Laminated poly packs should be used to pack the small millet rice to improve shelf life
- The promotional activities to be takenup to popularize the small millets
- Production should be improved

Retailers of processed rice

- Limited retailers
- Transportation is high because of small quantity.
- Less demand due to lack of promotion, lack of knowledge on nutritional aspects and health benefits among consumers.
- Lack of knowledge on different recipes
- Availability of free rice (paddy) in Public distribution system
- **Retailers buy at the rate of Rs 4800 from wholesalers and incur an expenditure of Rs 200 towards transportation after retaining the margin of Rs.500 /Qtl**

Retailers of processed rice Contd…

Way to overcome the issues

- Promotion on nutrition aspects & health aspects
- Recipes training
- Improving shelf life by suitable packing
- Bulk purchases to reduce the cost
- Ensure the availability of quantity & quality of product at all time.

Price spread of Barnyard millet for each market chain actor

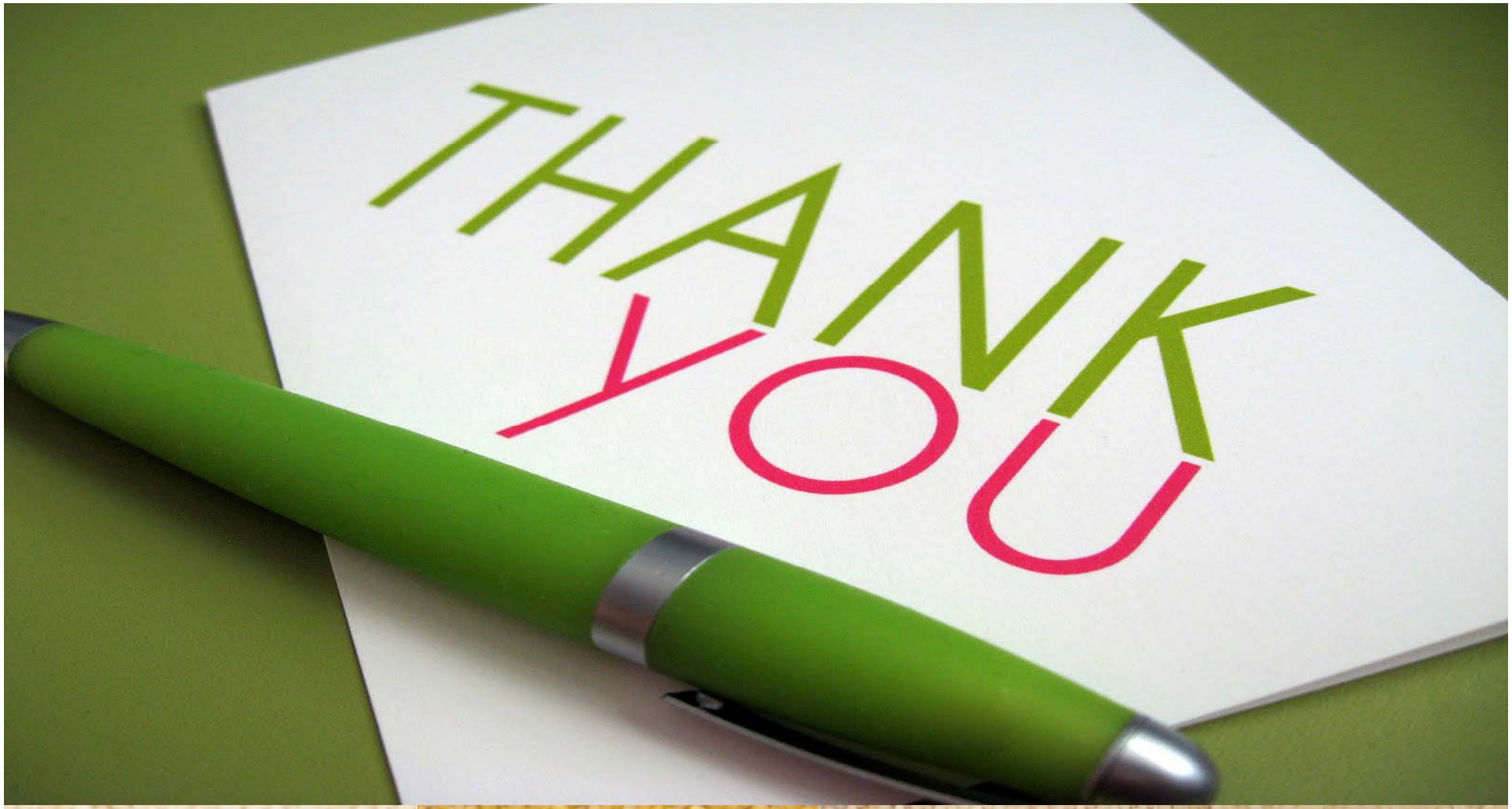
S.No.	Price paid to actors	Cost Price Rs/Qtl	Selling Price Rs/Qtl	Expenses*	Value addition charges**	Net price realized	Nature of grains	Price spread Rs/Qtl
1	Farmers	Nil---	1900	----------	----------***	1900	Raw	--Nil---
2	Village level small traders	1900	2000	60	----------***	1940	Raw	40
3	Big traders	2000	2150	65	----------***	2085	Raw	85
4	Whole sale traders	2150	2350	125	----------***	2225	Raw	75
5	Processors at Theni	2350	3100	55	595	2450	Semi-processed	100
6	Processor at Nashik	3100	4500	345	645	3510	Fully processed	410
7	Wholesalers at Madurai other places	4500	5000	200	----------***	4800	Fully processed	300
8	Retailers	4800	5500	200	----------	5300	Fully processed	500
							Total Price Spread	1510

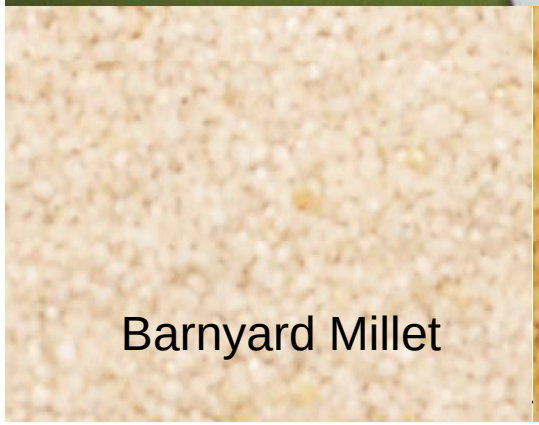
Price Spread for Kodo Millet

S.No.	Price paid to actors	Cost Price Rs/Qtl	Selling Price Rs/Qtl	Expenses*	Value addition charges**	Net price realization	Nature of grains	Price spread Rs/Q
1	Farmers	Nil---	1200	----------	---------- ***	1200	Raw	--Nil---
2	Village level small traders	1200	1300	36	---------- ***	1264	Raw	64
3	Whole sale traders	1300	1600	94	-------***	1506	Raw	206
5	Processors at Theni (Semi processed)	1600	3100	215	720	2165	Semi-processed	565
6	Processor at Nashik (Full Processed)	3100	4500	345	655	4500	Fully processed	400
7	Retailers at Madurai & other places	4500	5000	200	-------***	4800	Fully processed	300
					Total Price Spread			**1535**

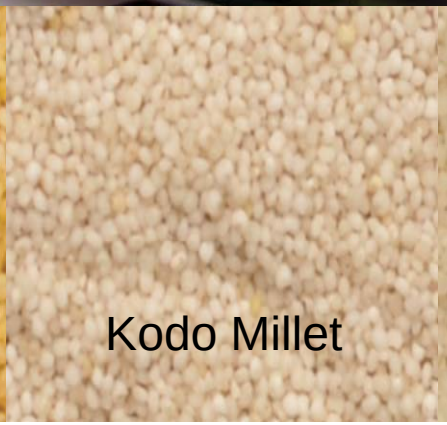
Price Spread for Little Millet

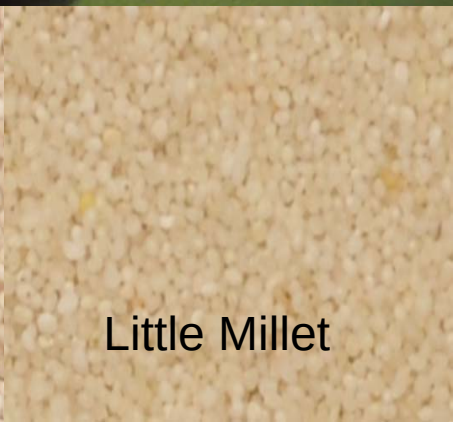
S.No.	Price paid to actors	Cost Price Rs/Qtl	Selling Price Rs/Qtl	Expenses*	Value addition charges**	Net price realized	Nature of grains	Price spread Rs/Qtl
1	Farmers	Nil---	2300	----------	---------- ***	2300	Raw	--Nil---
2	Village level small traders	2300	2400	50	----------***	2350	Raw	50
3	Whole sale traders	2400	2850	315	***	2535	Raw	135
4	Processor at Nashik	2850	4500	345	645	3500	Fully processed	660
5	Retailers at Madurai other places	4500	5000	200	----------***	4800	Fully processed	300
Spread							**Total Price**	**1145**




Barnyard Millet


Foxtail Millet


Kodo Millet


Little Millet

Nutrient Analysis of Barnyard Millet

S.No.	Test /Parameter	Method	K.V.01	K.V.02	K.V.03	Unit
1	Crude protein	AOAC 920.87	8.38	9.32	9.49	g/100g
2	Fat	AOAC 922.06	1.95	3.62	4.58	g/100g
3	Total Carbohydrates (by difference)	By Difference (Ref. AOAC 986.25)	78.28	75.46	75.76	%
4	Energy	Nutritive value of Indian food (ICMR)	364.1	371.7	382.2	kcal/100g
5	Tota dietary fibre	IS 11062:1984	15.39	13.71	11.43	g/100g
6	Iodine	SO-CHML-CTS-01-QU-056-by ICP-MS	BLQ (LOQ:25.0)	BLQ (LOQ:25.0)	BLQ (LOQ:25.0)	µg/100g
7	Calcium (as Ca)	SO-CHML-CTS-01-QU-063-by ICPOES	39	69.4	162.48	mg/kg
8	Iron (as Fe)	SO-CHML-CTS-01-QU-063-by ICPOES	6.17	9.56	52.32	mg/kg

Nutrient Analysis of Barnyard Millet

S.No.	Test /Parameter	Method	K.V.01	K.V.02	K.V.03	Unit
9	Magnesium (as Mg)	SO-CHML-CTS-01-QU-063-by ICPOES	422.21	999.25	1460.66	mg/kg
10	Phosphorous (as P)	SO-CHML-CTS-01-QU-063-by ICPOES	1180.04	2435.28	3362.11	mg/kg
11	Zinc (as Zn)	SO-CHML-CTS-01-QU-063-by ICPOES	16.625	22.872	29.892	mg/kg
12	Copper (as Cu)	SO-CHML-CTS-01-QU-063-by ICPOES	BLQ (LOQ:5.0)	BLQ (LOQ:5.0)	BLQ (LOQ:5.0)	mg/kg
13	Manganese (as Mn)	SO-CHML-CTS-01-QU-063-by ICPOES	BLQ (LOQ:5.0)	8.17	12.59	mg/kg

K.v.01 –Full Polish
K..v.02 – Semi polish
K.v.b.03 - Parbolied

Nutrient Analysis of Kodo

S.No.	Test /Parameter	Method	V.04	V.05	V.B.06	Unit
1	Crude protein	AOAC 920.87	7.56	7.09	8.08	g/100g
2	Fat	AOAC 922.06	1.62	2.47	2.25	g/100g
3	Total Carbohydrates (by difference)	By Difference (Ref. AOAC 986.25)	80.11	79.37	79.78	%
4	Energy	Nutritive value of Indian food (ICMR)	365.3	368.1	371.7	kcal/100 g
5	Tota dietary fibre	IS 11062:1984	9.41	9.94	18.84	g/100g
6	Iodine	SO-CHML-CTS-01-QU-056-by ICP-MS	BLQ (LOQ:25.0)	BLQ (LOQ:25.0)	BLQ (LOQ:25.0)	µg/100g
7	Calcium (as Ca)	SO-CHML-CTS-01-QU-063-by ICPOES	51.59	93.17	97.96	mg/Kg
8	Iron (as Fe)	SO-CHML-CTS-01-QU-063-by ICPOES	BLQ (LOQ:5.0)	17.47	27.04	mg/Kg

Nutrient Analysis of Kodo

S.No	Test /Parameter	Method	V.04	V.05	V.B.06	Unit
9	Magnesium (as Mg)	SO-CHML-CTS-01-QU-063-by ICPOES	503.54	934.88	815.96	mg/Kg
10	Phosphorous (as P)	SO-CHML-CTS-01-QU-063-by ICPOES	1114.92	1903.91	1833.82	mg/Kg
11	Zinc (as Zn)	SO-CHML-CTS-01-QU-063-by ICPOES	14.25	17.117	15.708	mg/Kg
12	Copper (as Cu)	SO-CHML-CTS-01-QU-063-by ICPOES	5.62	6.19	7.54	mg/Kg
13	Manganese (as Mn)	SO-CHML-CTS-01-QU-063-by ICPOES	BLQ (LOQ:5.0)	5.16	BLQ (LOQ:5.0)	mg/Kg

V.04-Full Polish,V.05 –Semi polish,V.b.06 Parboiled