

Impact of Odisha Millet Mission on the household
consumption pattern of millets and acceptance of Ragi
under Public Distribution System in
Rayagada, Kalahandi, Nuapada, Kandhamal and Gajapati District



**Nabakrushna Choudhury Centre for Development Studies, Bhubaneswar, Odisha
(An ICSSR Institute collaboration with Government of Odisha)**

2021

Citation: NCDS, “Impact of Odisha Millet Mission On The Household Consumption Pattern Of Millets And Acceptance Of Ragi Under Public Distribution System In Rayagada, Kalahandi, Nuapada, Kandhamal And Gajapati District, Nabakrushna Choudhury Centre for Development Studies, Bhubaneswar, 2021

Copyright: ©Nabakrushna Choudhury Centre for Development Studies (NCDS)

STUDYTEAM

Lead Author

Subhashree Lenka

Project Coordinator

Dr. Chitta Ranjan Das

Dr. Biswabasa Patra

Research Assistant

Miss. Subhashree Lenka

Field Investigators

Mr. Benudhar Mahapatra

Mr. Sarat Kumar Pradhan

Mr. Umakant Das

Mr. Sarat Kumar Pradhan

FOREWORD

The seeds for the “Special Programme on Promotion of Millets in tribal areas of Odisha” were sown at a consultation meeting held on 27 January 2016 at Nabakrushna Choudhury Centre for Development Studies (NCDS) under the Chairmanship of the Development Commissioner-cum-Additional Chief Secretary (DC-cum-ACS), Government of Odisha, members of different civil society groups from across the country and from within the state (which, among others, included the Alliance for Sustainable and Holistic Agriculture (ASHA), the Millets Network of India (MINI), the Revitalizing Rainfed Agriculture (RRA) Network of India), that brought in their experiences, and the academia that included among others Dr. T. Prakash, Chairperson, Karnataka Agricultural Price Commission. As per the decision taken at the consultation meeting, NCDS submitted a proposal to the Government of Odisha on the revival of millets. Lo and behold, there was an announcement in the budget speech of 18 March 2016 conveying that the Government of Odisha intends to revive millets. This led to a series of interactions and a memorandum of understanding (MoU) was signed on 27 February 2017 between the Director of Agriculture and Food Production (DAFP) as the state-level nodal agency that would monitor and implement the programme, NCDS as the state secretariat that would also anchor the research secretariat and Watershed Support Services and Activities Network (WASSAN) that would anchor the programme secretariat as part of the state secretariat. It was proposed for implementation of 30 blocks of seven districts during the year 2017-18. The major objectives are to improve household consumption, and productivity through the implementation of improved agronomic practices, setting up decentralised processing units to minimise drudgery, promoting collective marketing to ensure better and remunerative prices and inclusion of millets in state nutrition programme and Public Distribution System (PDS). The High Power Committee has entrusted NCDS to conduct a study on the “Impact of the Odisha Millets Mission on the Household Consumption Pattern of Millets and Acceptance of Ragi in PDS in Gajapati, Kalahandi, Kandhamal, Nuapada and Rayagada Districts”

In the present study, an attempt is made to encapsulate some of the impact of Ragi distributed under PDS to beneficiary households in the districts covered during phase-I. It is based on the perception of beneficiaries who received Ragi under PDS in rural areas of

Odisha. For this study, the researchers adopted stratified random sampling, classified as households covered under Odisha Millets Mission (OMM) and non-beneficiary households. The selected respondent's views from each group were recorded in a pre-tested questionnaire developed by the team. The indicators to assess respondents' perception and level of satisfaction for quality, quantity, consumption pattern and suggestions to improve the Ragi distribution under PDS are analyzed by the team. This study was conducted through sampling design, the prerequired data of Ragi in sampling districts.

Director, NCDS

ACKNOWLEDGEMENT

The preparation of this report on “Impact of the Odisha Millets Mission on the household consumption pattern of millets and acceptance of *Ragi* in Public Distribution System (PDS)” is a combined effort of a team of Researchers of Nabakrushna Choudhury Centre for Development Studies (NCDS). The study aims to find out the perception of beneficiaries of *Ragi* received under PDS. The study was conducted in Rayagada, Kalahandi, Nuapada, Kandhamal and Gajapati districts. The respondents were very much interested to consume ragi, but they express that without replacing rice under PDS. The Government should supply Ragi in addition to the present quantity of rice. However, they prefer Ragi in lieu of Wheat. After Rice, Ragi is preferred by every respondent under PDS.

We would like to express my sincere gratitude to Mr. Suresh Kumar Basistha (Principal of Agriculture), Dr. M. Muthukumar, IAS, Director, DAFP, Shri H. Mahant, Joint Director, Mrs. Kalpana Pradhan, Scheme officer, OMM, Dr. Chita Ranjan Das, Sr. Research Officer and Dr. Biswabas Patra, Research Officer, whose valuable guidance and constructive suggestion helped us to complete this report.

Next, we would like to express thanks to Mr. Satya Narayan Bhoi (MI of Rayagada and Kolnara Block), Mr. Prabhakar Mallick (MI of Padampur), Rita mam (MI of Gunupur and Ramnaguda block) and Sri Rajkishor Panigrahi, CSO (Civil Supply Officer) of Rayagada District, who helped us to provide our relevant data. Mr. Chittaranjan Deo (PEO of Chinasari GP), Prakash Chandra Gajibili (PEO of Gulumunda GP), Upendra Sabar (Jogan Sahayak of Chandili GP), Manoranjan Patra (PEO of Kailashpur GP) and Mr. A. Sankar Rao (Secretary of SHG) they also helped us to interact with the village people and to get some extra information regarding our topic.

We express our gratitude to Sri Manish Agarwal, IAS, Former Director NCDS, Ms. Sumati Jani (Odisha Finance Service, OFS-1 (JB)), former Secretary, Mr. Niranjana Mohapatra, Librarian, Ms. S. M. Pani, Computer Programmer, Mr. D.B. Sahoo, P.A. to Director, P.K. Mishra, Senior Assistant, Mr. P.K. Mohanty, Junior Accountant, Mr. N. K. Mishra, Stenographer and Mr. P. K. Mallia, Mr. Ramachandra Tosh (Regional Co-Ordinator of WASSAN), District Co-Ordinator of WASSAN, All CRPs, Nitin Kumar Hota (Research Assistant, OMM), Bikash Kumar Pradhan (Research Assistant, IF), Computer literate Typist, Mr. Sisir Ranjan Swain, Accounts Assistant, Mr. S.B. Sahoo, Xerox Operator for their support, help and cooperation.

Subhashree Lenka
& Research team OMM, NCDS,

EXECUTIVE SUMMARY

§1 PDS scenario in sample districts

In Rayagada district 239 FPS center with 254479 families, Kalahandi district 299 FPS center with 404508 families, Nuapada district 337 FPS centers with 173320 families, Kandhamal district 167 FPS with 181982 family members and Gajapati district 149 FPS with 127425 families.

§4 Socio-economic status

§4.1 Combinedly there are a total of 2346 population in surveyed districts. The population is divided into male and female persons. In the Gajapati district, the male population is high i.e., 249 and in the Kandhamal district, the female population is high i.e., 246.

§4.2 In Kandhamal district highest number of people involved in cultivation i.e., 226. A total of 430 people are involved in other work. Total 807 peoples are involved in cultivation.

§5 Production

§5.2 In Kalahandi district highest i.e., 51.25-acre land is used for ragi cultivation in Kharif season. Production level is high in Kalahandi district i.e., 132.8 qntl in Kharif season.

§6 Consumption

§6.2 Highest 118 no HHs are consuming ragi during breakfast and only one HH is consuming ragi during evening snacks. In the Nuapada district, 38.71 percent HHs are consuming ragi during evening snacks.

§6.3 Total highest 597 HHs are consuming ragi as mandiatorani and 206 no HHs are consuming ragi as Pitha. 12 HH are consuming ragi as Khiri.

§6.4 In Gajapati, Kalahandi and Nuapada districts 120 HHs in each district are consuming ragi in the summer season. In Kandhamal and Rayagada districts 119 HHs in each district are consuming ragi in the summer season. 46 no of HHs are consuming ragi in the Gujarati district.

§7 Ragi under PDS: Analysis and Findings

§7.1 Kandhamal district out of surveyed 120 HHs only 1 HHs from Tikabali block Kainjhar GP have not received ragi under PDS. 37 no. of HHs are not satisfied with the quality of PDS ragi. 562 no. of HHs are satisfied with the quality of PDS ragi. 68 no. of HHs are satisfied with the quality of ragi by their production.

CONTENT

Foreword

Acknowledgement

List of Tables

List of Charts

Abbreviation

1	Chapter-1	1
	<i>Introduction</i>	
	1. Introduction	
	2. PDS scenario in sampled district	
	Chapter-2	9
2	<i>Study Background</i>	
	2.1 Background of the study	
	2.2 Objective of the study	
	2.3 Methodology	
	2.4 Limitations of the study	
3	Chapter-3	15
	<i>Review of Literature</i>	
	3.1 Review of the literature	
	3.2 Importance of Ragi under PDS	
	3.3 Inclusion of millets under PDS	
	3.4 Ragi under PDS in Odisha & other states	
4	Chapter-4	20
	<i>Socio-economic profile</i>	
	4.1 Gender distribution population	
	4.2 Main economic activities	
	4.3 Conclusion	

5	Chapter-5	24
	<i>Production</i>	
	5.1Introduction	
	5.2Area, Production	
	5.3Conclusion	
6	Chapter-6	25
	<i>Consumption</i>	
	6.1Introduction	
	6.2Consumption during different meals of the day	
	6.3Millets recipes consumed	
	6.4Season wise consumption	
	6.5Conclusion	
7	Chapter-7	28
	<i>Analysis and Findings</i>	
	7.1RagiunderPDS:AnalysisandFindings	
	Case study	
8	Chapter-8	32
	<i>Major findings</i>	
	<i>Reference</i>	

LIST OF TABLES

No	Title	Page
Table- 1.1	Micro Nutrient content of different food grains per 100 kg	1
Table- 1.2	Coverage of Ragi Under First Phase OMM project intervention	3
Table 1.3	Coverage of Non-Ragi under First Phase OMM project intervention (land Acre in Hectors)	4
Table 1.4	Farmer Outreach Under First Phase Intervention OMM	5
Table No 1	The structural form of Sample Selection	12
Table4.1	Distribution of sampled population by gender across Odisha	20
Table4.2	Distribution of Population with Occupation	22
Table5.2	No. of HHs cultivating ragi (inacre/ production in quintal)	24
Table6.2	Ragi consumption during different meals in a day	26
Table6.3	Consumption of millets recipes (Nos. of HHs)	26
Table6.4	Season-wise consumption of Ragi	27
Table7.1.1	Distribution of ragi under the PDS Programme	28
Table7.1.2	Distribution of HHs founding any difference in between the quality of Ragi	29
Table7.1.3	Distribution of HHs consuming the quality of ragi	30
Table7.1.4	Mode of source of HHs buying Ragi	30

LIST OF CHARTS

No	Title	Page
Chart4.1	Gender-wise distribution of the population	21
Chart4.2	Distribution of population occupation in cultivation and agricultural labour	22
Chart7.1.2	Distribution of HHs founding any difference in between the quality of ragi	29
Chart7.1.4	Mode of source of HHs buying ragi	30

ABBREVIATION

FPS: Fair Price Shops

HHs: Household

MSP: Minimum Support price

NHFS: National Family Health Survey

SC: Schedule Cast

OMM: Odisha Millets Mission

PDS: Public Distribution System

ST: Schedule Tribe

TDCCOL: Tribal Development Cooperative Corporation of Odisha Limited

INTRODUCTION

1. Introduction:

The Public distribution system (PDS) is among the most important food security programmes of the Government of India. It has become an important source of food security for rural households. It is a scheme under which the government supplies some essential items of daily use to the public at controlled prices through outlets like ration shops and Fair Price Shops (FPSs). The aim is to ensure stability and strengthen the general living standards of the population; particularly for the poor section of society and isolate them against rising prices. The items sold through the PDS outlets are wheat, rice, sugar, edible oil, and kerosene oil; rice, wheat, sugar and kerosene are the most accounting for 86 per cent of the total PDS sales. Now the government has introduced Millets (Ragi) in Public Distribution System. According to history, Millet is playing the main role in the food habit of tribal people. As millets are naturally nutrient-dense. Millets in PDS can heal the problem of malnutrition in people, especially people who suffer in remote areas.

Table1.1 Micro nutrient Content of different food grains per100g

Grain/Nutrient	Ragi (Finger millet	Rice	Wheat
Protein(gm)	7.3	6.8	12.1
Calcium(mg)	344.0	10.0	48.0
VitaminB1 (mg)	4.2	0.1	0.4
Carbohydrate(gm)	72.0	78.2	71.2
Fat(gm)	1.3	0.5	1.5
Fiber(gm)	3.6	1.0	2.0
Minerals(gm)	2.7	0.6	1.5
Source: Nutritional value of Indian Foods, National Institute of Nutrition (ICMR), Hyderabad, 2004.			

The national millet mission was launched by the central government in 2018, adopting and implementing the mission would be at the prerogative of the states. The government declared the Year 2018 as the “National Year of Millets.” (Ministry of Agriculture and Farmers Welfare, March 22, 2018). The mission is likely to be under the overarching umbrella of the National Nutrition Mission (POSHAN Abhiyan) which focuses on intense monitoring and

convergence of initiatives focused on improved nutrition through different state-line departments. However, there do not exist clear guidelines on how one should go about strategizing and adopting a ‘Millet Mission’ at the state level. On the launch of the National Millet Mission, state governments were encouraged to learn from the model formulated by OMM (Government of Odisha, 2018). The much appreciated and talked about OMM can have critical learning not only in terms of the ultimate impact on the nutritional profile of the state but also in terms of program and administrative processes that can be developed as a model for other states.

Table–1.2: Coverage of Ragi under first phase OMM Project Intervention

S l.	District	Blocks	Land area taken up for ragi cultivation by Districts, blocks and crop years (in Hectares)				% Share of the block in the district total	% Share of the district in state total
			2017-18	2018-19	2019-20	All Years		
1	Gajapati	Gumma	174.2	350.2	508.2	1032.6	31.3	14.9
		Mohana	134	253.6	388.6	776.2	23.5	
		R.Udayagiri	202.4	284	338.3	824.7	25.0	
		Rayagada	118.2	215	331.2	664.4	20.1	
		Sub total	628.8	1102.8	.3	3297.9	100.0	
2	Kalahandi	Bhwanipatna	2.02	32.2	701566	104.22	7.2	6.5
		Lanjigarh	45.93	131.33	201.8	379.06	26.3	
		Narla	18.23	168	119.4	305.63	21.2	
		Th.rampur	38.65	195.4	418.4	652.45	45.3	
		Sub total	104.83	526.93	809.6	1441.36	100.0	
3	Kandhamal	Daringbadi	50.4	245.7	250.5	546.6	20.7	12.0
		Kotagarh	26.4	363.6	413.8	803.8	30.4	
		Phiringia	15.2	161.1	251	427.3	16.2	
		Raikia	81	347.1	436.6	864.7	32.7	
		Sub total	173	1117.5	1351.9	2642.4	100.0	
4	Koraput	Boipariguda	169.56	400.6	600	1170.16	17.0	31.3
		Borigumma	125.05	242.2	772.18	1139.43	16.5	
		Dasmantpur	149.86	200.02	420	769.88	11.2	
		Kundra	131.1	344.3	454.9	930.3	13.5	
		Lamtaput	176.07	298.7	559.7	1034.47	15.0	
		Nandapur	197.89	517.2	215.7	930.79	13.5	
		Semiliguda	142.11	307	478.06	927.17	13.4	
		Sub total	1091.64	2310.02	3500.54	6902.2	100.0	
5	Malkangiri	Chitrakonda	161.87	390	596.16	1148.03	26.6	19.6
		Khairaput	124.44	280.88	700.48	1105.8	25.6	
		Korukonda	169.97	354.4	426	950.37	22.0	
		Mathili	231.28	273.2	614.4	1118.88	25.9	
		Sub total	687.56	1298.48	2337.04	4323.08	100.0	
6	Nuapada	Boden	85.71	49.4	138.54	273.65	51.5	2.4
		Komna	21.67	57.8	44.46	123.93	23.3	
		Sinapali	24.03	54.2	55.6	133.83	25.2	
		Sub total	131.41	161.4	238.6	531.41	100.0	
7	Rayagada	Chandrapur	0	189.4	423.2	612.6	20.9	13.3
		Gudari	73.05	260.4	271.2	604.65	20.6	
		Gunpur	160.26	223.2	258.5	641.96	21.9	
		Rayagada	110.48	435.8	532	1078.28	36.7	
		Sub total	343.79	1108.8	1484.9	2937.49	100.0	
		Grand Total	3161.03	7625.93	11288.88	22075.84		100.0

Source: Computed from WASSAN Official data

Table-1.3: Coverage of Non-ragi under first phase OMM Project Intervention (land Area in Hectares)

Sl.	Districts	Blocks	Land area taken up for non-ragi millet cultivation by Districts, blocks and crop years (in Hectares)				% Share of the block in the district total	% share of the district in the state total
			2017-18	2018-19	2019-20	All Years		
1	Gajapati	Gumma	0	88.6	31.6	120.2	18.32	17.0
		Mohana	0	57.8	21.6	79.4	12.10	
		R.Udayagiri	0	150	66.6	216.6	33.01	
		Rayagada	0	95.4	144.6	240	36.57	
		Sub total	0	391.8	264.4	656.2	100.00	
2	Kalahandi	Bhwanipatna	0	173.6	77.4	251	21.89	29.6
		Lanjigarh	64.55	145.4	216.6	426.55	37.19	
		Narla	49.9	100.4	28	178.3	15.55	
		Th.rampur	0	128.2	162.8	291	25.37	
		Sub total	114.45	547.6	484.8	1146.85	100.00	
3	Kandhamal	Daringbadi	0	25	151.1	176.1	38.68	11.8
		Kotagarh	0	30	103	133	29.21	
		Phiringia	0	17.6	84	101.6	22.31	
		Raikia	0	2	42.6	44.6	9.80	
		Sub total	0	74.6	380.7	455.3	100.00	
4	Koraput	Boipariguda	0	70.6	123.2	193.8	45.25	11.1
		Borigumma	0	0	0	0	0.00	
		Dasmantpur	0	72.7	42	114.7	26.78	
		Kundra	0	2.5	9.4	11.9	2.78	
		Lamtaput	0	0	76.5	76.5	17.86	
		Nandapur	0	0	1.2	1.2	0.28	
		Semiliguda	0	30.2	0	30.2	7.05	
		Sub total	0	176	252.3	428.3	100.00	
5	Malkangiri	Chitrakonda	0	14	64.31	78.31	98.99	2.0
		Khairaput	0	0	0.8	0.8	1.01	
		Korukonda	0	0	0	0	0.00	
		Mathili	0	0	0	0	0.00	
		Sub total	0	14	65.11	79.11	100.00	
6	Nuapada	Boden	0	96	0	96	31.81	7.8
		Komna	0	96	1.8	97.8	32.41	
		Sinapali	0	95	13	108	35.79	
		Sub total	0	287	14.8	301.8	100.00	
7	Rayagada	Chandrapur	0	26	8.2	34.2	4.27	20.7
		Gudari	0	144.4	131	275.4	34.36	
		Gunpur	0	219.4	266.4	485.8	60.62	
		Rayagada	0	0	6	6	0.75	
		Sub total	0	389.8	411.6	801.4	100.00	
		All districts	114.45	1880.8	1873.71	3868.96		100.0

Source: Computed from WASSAN Official data

Table-1.4: Farmer Outreach under first phase intervention OMM

Sl.	District	Blocks	Number of farmers covered under first phase OMM by districts, blocks and crop years (No. of farmers)				% Share of the block in the district total	% share of the district in the state total
			2017-18	2018-19	2019-20	All Years		
1	Gajapati	Gumma	610	1405	1918	3933	33.7	18.5
		Mohana	386	955	1280	2621	22.5	
		R.Udayagiri	546	941	916	2403	20.6	
		Rayagada	232	739	1727	2698	23.1	
		Sub total	1774	4040	5841	11655	100.0	
2	Kalahandi	Bhwanipatna	7	310	411	728	11.4	10.2
		Lanjigarh	269	743	1307	2319	36.2	
		Narla	242	549	519	1310	20.4	
		Th.rampur	28	749	1272	2049	32.0	
		Sub total	546	2351	3509	6406	100.0	
3	Kandhamal	Daringbadi	293	1004	1211	2508	30.5	13.1
		Kotagarh	91	1020	1157	2268	27.6	
		Phiringia	55	517	824	1396	17.0	
		Raikia	189	575	1292	2056	25.0	
		Sub total	628	3116	4484	8228	100.0	
4	Koraput	Boipariguda	423	696	1568	2687	15.7	27.1
		Borigumma	298	578	1561	2437	14.3	
		Dasmantpur	353	577	1197	2127	12.5	
		Kundra	263	704	920	1887	11.1	
		Lamtaput	729	715	1177	2621	15.4	
		Nandapur	500	1710	567	2777	16.3	
		Semiliguda	184	874	1468	2526	14.8	
		Sub total	2750	5854	8458	17062	100.0	
5	Malkangiri	Chitrakonda	377	902	1610	2889	30.5	15.0
		Khairaput	303	640	1479	2422	25.6	
		Korukonda	375	647	727	1749	18.5	
		Mathili	506	621	1280	2407	25.4	
		Sub total	1561	2810	5096	9467	100.0	
6	Nuapada	Boden	345	402	642	1389	41.3	5.3
		Komna	92	359	474	925	27.5	
		Sinapali	184	357	510	1051	31.2	
		Sub total	621	1118	1626	3365	100.0	
7	Rayagada	Chandrapur	0	385	680	1065	15.6	10.8
		Gudari	156	600	605	1361	20.0	
		Gunpur	309	874	996	2179	32.0	
		Rayagada	291	824	1099	2214	32.5	
		Sub total	756	2683	3380	6819	100.0	
		All districts	8636	21972	32394	63002		100.0

Source: Computed from WASSAN Official data

Odisha occupies a unique position among the Indian states and Union Territories for having a rich and colourful tribal scenario. The first study on “Supply of Ragi under Public Distribution System (PDS)” was started in November 2019 by Nabakrushna Choudhury Centre for Development Studies (NCDS). Initially, two districts of Odisha have been surveyed namely Koraput and Malkangiri. After that it was planned for surveyed in other 5 districts namely Gajapati, Kalahandi, Kandhamal, Nuapada, and Rayagada.

The main objective of this study is to examine all aspects of the introduction of ragi in the PDS in these five districts, which includes the quality, quantity and distribution of ragi between the OMM block and non-OMM block supply under the PDS centre. The government of Odisha has decided to offer ragi to the poor from July 2019, particularly who have priority cards/ration cards. It was also planned by the government that, ragi will be supplied Rs1/kg per card holder in Koraput, Gajapati, Kalahandi, Kandhamal, Nuapada and Rayagada and 2kg per card holder in Malkangiri district.

2.PDS scenario in Sample districts:

In the Rayagada district ration shops or Fair Price Shops (FPS) are allocated at the village level. From secondary data, it is found that there are 239 FPS centers with 254479 families of 835219 members. Earlier in PDS centers of Rayagada district commodities like rice, wheat, kerosene and sugar were supplied at a very subsidized price but with the emerging idea of intervention of Odisha Millets Mission, the government of Odisha, it is decided to include highly nutritious grain i.e., ragi in food commodity. Initially, ragi (finger millet) from the millet's variety was supplied through PDS shops in Koraput, Malkangiri and other 5 districts such as Gajapati, Kandhamal, Rayagada, Kalahandi and Nuapada. Rice is distributed each 5kg with respect to the number of members listed in the ration card but ragi is distributed 2kg per [family@Rs.1](#). The consumption of ragi in tribal areas is majorly got acceptance as millets are the staple food for the tribal people for many generations.

In Kalahandi district ration shops or Fair Price Shops (FPS) are allocated at the village level. From secondary, it is found that there are 299 FPS centres with a total of 404508 family members. In Kalahandi district, the ragi allotment was 8090.160 qntl (Jan 2021) and there is 7 storage point. There are 2 depots from where stocks to be lifted are CWC Junagarh and TDCC Rayagada. Ragi distributed under the OMM block the people are interested to consume ragi but in the non-OMM block, some peoples are not interested to consume ragi.

After the involvement of the OMM intervention block, some people are also interested to cultivate ragi and consume ragi. The beneficiaries were not interested to take ragi in lieu of 2kg rice they were interested to take ragi in addition to rice.

In Nuapada district ration shops or Fair Price, Shops are allocated at the village level. From secondary data, it is found that there is a total of 337 FPS centers with a total of 173320 family members. There is total 3 Ragi or Mandia mandi. There is a total of 1486 farmers cultivating ragi. The people of that area who are consuming ragi also make chakuli, Khiri and jau from mandia. Here also the beneficiaries were not interested to take ragi in lieu of 2kg rice they were interested to take ragi in addition with rice.

In Kandhamal district ration shops or Fair Price, Shops are allocated at the village level. From secondary data, it is found that there is a total of 167 FPS centers with a total of 657155 beneficiaries with 181982 family members. People who are consuming ragi also make soup, Halua, pakudi, dantikili and pitha from ragi. The beneficiaries were not interested to take ragi in lieu of 2 kg rice they were interested to take ragi in addition to rice.

In the Gajapati district ration shops or Fair Price, shops are allocated at the village level. From secondary data, it is found that there is a total of 149 FPS centers with a total of 127425 beneficiaries. There is total 3 Ragi mandi or Mandia mandi. Here also the beneficiaries were not interested to take ragi in lieu of 2kg rice they were interested to take ragi in addition with rice.

Abstract of Ragi Procurement-2018-19, 2019-20 & 2020-21

SL.No	Year	DLPC Target	No. of Farmers Sold Ragi	Quantity Procured in Qntls. from OMM Area	Quantity Procured in Qntls. from Non-OMM Area	Total Quantity Procured in Qntls	% Of Achievement in OMM Area	% Of Achievement in Non-OMM Area	Overall Achievement (%)
1	2018-19	32599	5739	16118.15	1866.98	17985.13	49.44	5.73	55.17
2	2019-20	101048	20357	83530.89	11220	94750.89	82.66	11.10	93.77
3	2020-21	232560	24483	182135.05	19146.77	201281.82	78.32	8.23	86.55
Grand Total of 3 Years		366207	50579	281784.09	32233.75	314017.84	76.95	8.80	85.75

BACKGROUND OF THE STUDY

2.1 Introduction:

The study on ‘Impact of Odisha Millet Mission on the household consumption pattern of millets and acceptance of Ragi in PDS’ was laid in the High-Power Committee meeting, held under the chairmanship of DC-cum-ACS on 12th Sept. 2019, DC-cum-ACS advised that a survey needs to be done to ascertain the impact of OMM in the tribal area and to study whether there is a change in the food habits of the people or not. In that meeting, NCDS was assigned to conduct a study on the said matter. In the first phase, Malkangiri and Koraput districts were taken for the evaluation on the objectives spelt out below. After that, it was decided to take the other five districts; Rayagada, Kalahandi, Nuapada, Kandhamal and Gajapati districts for evaluation.

2.2 Objectives of the Study:

The survey on “Impact of Odisha Millet Mission on the household consumption pattern of millets and acceptance of Ragi in PDS” was designed to serve the following objectives;

- ❖ To examine the impact of Odisha Millet Mission on the household consumption pattern in the study area.
- ❖ To understand the preference level of people for Ragi as a PDS item compared to Rice and Wheat.
- ❖ To find out whether the quantity of Ragi supplied under PDS was sufficient or not.
- ❖ To examine the socio-economic conditions of PDS cardholders.
- ❖ To know the quality of ragi people consuming from PDS center and local market.

2.3. Methodology:

2.3.1 Universe of the study:

For the study “The impact of OMM on the household consumption pattern of millets and acceptance of ragi in PDS” in 5 districts namely: Gajapati, Kalahandi, Kandhamal, Nuapada and Rayagada. The study started in the Rayagada district.

2.3.2 Study area:

As per the schedule from the Rayagada district, two intervened OMM blocks and two intervened non-OMM blocks have been selected. In the Rayagada district two OMM-intervened blocks such as; Rayagada and Gunupur blocks and two non-OMM intervened blocks such as Kolnara and Ramnaguda selected. From OMM intervened Rayagada block Kumutibenta and Chandili villages were selected and Gunupur blocks Regeda and Gadiabang village of Chinasari GP were selected. From non-OMM intervention, Kolnara block Kailashpurand Lekapai village was selected, and Ramnaguda block Gulumunda village and Gugurupa village of Nilamguda GP were selected.

From Kalahandi district two intervened OMM blocks; Lanjigarh, Bhawanipatna and two Non-OMM intervened blocks; Dharmagarh and Junagarh have been selected. From OMM intervened Bhawanipatna block Ghumaraguda village of Kamthana GP and Prolong village of Sagada GP were selected, similarly from Lanjigarh block Padmathapa village of Bengaon GP and Kutingpadar village of Lakhanbahal GP were selected. From Non-OMM intervened Dharmagarh block Bodan village and Badabasul village selected, similarly from Junagarh block Chichaiguda and Naktiguda village selected.

From the Nuapada district, two OMM-intervened blocks Sinapali and Boden selected and two non-OMM intervened blocks Khariar and Nuapada selected. From OMM intervened Sinapali block Ranimunda and Timanpur villages were selected, similarly from Boden block Sunamundi village of Boirgaon GP and Dhanapali village of Litisargi GP were selected. From Non-OMM intervened Khariar block Nehena village and Badadohel village of Sanadohel GP selected, similarly from Nuapada block Sarabongand Khutbanvera village selected.

From Kandhamal district two OMM-intervened blocks Baliguda and Tumudibandh blocks selected and two non-OMM intervened blocks Chakapad and Tikabali blocks selected. From OMM intervened Baliguda block Rebingia and Barkhama villages were selected, similarly from Tumudibandh block Nuasahi village of Mundigada GP and Kilupadi village of Tumudibandh block was selected. From the Non-OMM intervention Chakapad block Tapadingia village of Sankarakhol GP and Kamrikiya village of Arabaka GP were selected, similarly from Tikabali block Katimaha village and Kainjhar village of Mankadbata GP were selected.

Lastly from the Gajapati district, two OMM-intervened blocks Rayagada and Guma blocks

selected and two Non-OMM intervened blocks Kashinagar and Gosani blocks selected. From OMM intervened Rayagada block Kainpur village of Belapadar GP was selected and Jhirjhara village of Laxmipur GP was selected, similarly from Guma block Tarangagada village of Kholbada GP selected and Abasingh village of Munisingh GP selected. From Non-OMM intervened block Kashinagar block Sidhamadanga village and Ranipentha village selected, similarly from Gosani block Dhamanigaon village of Kerandi GP and Katalkaitha village selected.

2.3.3 Sample selection:

A total of 14 districts are going under phase 1 of OMM, out of which baseline surveys of two districts such as; Koraput and Malkangiri have already been done. The other five districts such as; Gajapati, Kandhamal, Kalahandi, Rayagada and Nuapada were selected firstly by using purposive random sampling. Secondly, four blocks were selected randomly from each district. These blocks have been divided into two categories such as; under the OMM block and non-OMM block. Thirdly two GP were selected from each block by using random sampling because under each GP, there is a Fair Price Shop centre (FPS). From each GP, one village was selected and from each village, 15HHs have been selected randomly. So, in this way, 120 HHs have been selected from each district, and altogether a total of 600 HHs have been taken for field study.

Table No.1: Structural form of Sample selection

Odisha (600HHs)							
District Name	OMM block	GP	Village	Non-OMM block	GP	Village	Total sample collected
Rayagada	Rayagada	Kumutibentha (15HHs)	Kumutibentha	Kolnara	Kailashpur (15HHs)	Kailashpur	120 HHs
		Chandili (15HHs)	B.C Road J.K. Pur		Kolnara (15HHs)	Pedalekapai	
	Gunpur	Chinasari (15HHs)	Gadiabang	Ramnaguda	Nilamguda (15HHs)	Gugurupang	
		Regrda (15HHs)	Regeda		Gulumunda (15HHs)	Gulumundapaka	
Kalahandi	Bhawanipatna	Kamthana (15 HHs)	Ghumarguda	Dharmagarh	Bodan (15HHs)	Bodan	120 HHs
		Sagada (15 HHs)	Parlong		Badabasul (15HHs)	Badabasul	
	Lanjigarh	Bengaon (15 HHs)	Padmathapa	Junagarh	Chichaiguda (15HHs)	Chichaiguda	
		Lakhanbahal (15HHs)	Kutingpadar		Naktiguda (15HHs)	Naktiguda	
Nuapada	Sinapali	Ranimunda (15HHs)	Ranimunda	Khariar	Nehena (15HHs)	Nehena	120 HHs
		Timanpur (15HHs)	Timanpur		Sanadohel (15HHs)	Badadohel	
	Boden	Boirgaon (15HHs)	Sunamundi	Nuapada	Sarabong (15HHs)	Sarabong	
		Litisargi (15HHs)	Dhanapali		Khutbanvera (15HHs)	Khutbanvera	
Kandhamal	Baliguda	Rebingia (15HHs)	Rebingia	Chakapad	Sankarakhol (15HHs)	Tapadingia	120 HHs
		Barkhama (15HHs)	Barkhama		Arabaka (15HHs)	Kamriki	
	Tumudibandha	Mundigada (15HHs)	Nuasahi	Tikabali	Katimaha (15 HHs)	Katimaha	
		Tumudibandha (15HHs)	Kilupadi		Mankadbata (15 HHs)	Kainjhar	
Gajapati	Rayagada	Belapadar (15HHs)	Kainpur	Kashinagar	Sidhamadanga (15HHs)	Sidhamadanga	120 HHs
		Laxmipur (15HHs)	Jhirjhara		Ranipentha (15HHs)	Ranipentha	
	Guma	Kholabada (15HHs)	Tarangagada	Gosani	Kerandi (15HHs)	Dhamanigaon	
		Munisingh (15HHs)	Abasingh		Katalkaitha (15HHs)	Katalkaitha	

2.3.1 Source of Data collection:

Data has been collected from both primary and secondary sources. The primary source of data collection has been made through interviewing respondents of the sample HHs and conducting Focused Group Discussions (FGD) in villages. Secondly, the secondary data have been collected from PDS dealers, Supply inspectors and CRPs of district co-ordinating offices.

2.3.2 Tools Used for data collection:

For data collection, appropriate tools were developed based on the objectives and their related variables. The objective-wise variables identified for the preparation of tools are as follows:

Primary Data:

- Household questionnaires- were developed and used to record the responses of the sampled household particulars, land particulars, utilization of land, productivity of land, the status of PDS procurement and regarding their ragi consumption pattern etc.
- Focus Group Discussion (FGD) tools–were used to understand the overall scenario regarding the village-level production, consumption, processing, marketing and problems related to Ragi cultivation and PDS.
- Case Study – The survey team also recorded a few case studies that showcase and describe the success story of households in the revival of Ragi consumption.
- Photographs – As photographs speak much more than any written documents, so considering the importance, our survey team was directed to document the survey, also through the photographs especially while conducting individual interviews and FGDs.

Secondary Data:

- Literature Review – Extensive literature review was done to get a more understanding of the concerned study and to obtain secondary data necessary to make the report more insightful.
- OSCSC Data – Data was also collected from the Odisha State Civil Supplies Corporation on the district-wise distribution to make the report more comprehensive and robust with the facts and figures.

2.4 Limitations of the Study:

- District-wise allotment and issue of ragi-related data could not be collected from district civil supply officers of the respective district except Kalahandi district.
- Caste and religion-wise data could not be collected from the respective areas due to the Covid pandemic situation.
- The survey team fetched difficulties during data collection. Not proper secondary data collected from govt. officials

LITERATURE REVIEW ON PUBLIC DISTRIBUTION SYSTEM

3.1. Introduction:

In this chapter, I have put together the views of different findings and studies of scholars related to the Public Distribution System in India.

Millets is a climate complaint crop (as compared to other grains such as wheat and rice) both in terms of marginal growing conditions and nutritional value (Kumar et.al. 2018). In 1997, the central govt. launched the targeted Public Distribution System (TPDS) with a focus on the poor. Leak age remains a major issue in the Karnataka PDS, estimated as 46.4% of the off-take in 2011-12 (Gulati and Saini 2015:7). The term "leakage" indicates the goods subtracted from the PDS supply chain, a large share of which is illegally diverted to the market (Khera 2011b). The dual price regime, of PDS goods vs the market, makes it possible to make illicit profits from the diversion of goods. Large quantities of rice, wheat, sugar, and other commodities are diverted every year, which drastically reduces the effectiveness of the PDS.

The anthropometric data on height and weight collected in the NHFS help to evaluate the nutritional status of young children in the country. During NHFS-1, stunting and being underweight affected the SCs more than STs. Wasting posed a bigger challenge for the STs than SCs. As per the NHFS-2, increasing food security contributed to growing malnutrition among the Adivasi children. Stunting and being underweight posed a bigger challenge for the STs than the SCs (a complete reversal from NHFS-1). Wasting was more predominant among the STs than all the other groups. In NHFS-3, stunting posed similar challenges for the SCs and STs and increased from the previous NHFS-2. Wasting continued to rise for all social groups. But posed the biggest threat to the STs, even more than SCs or all the other social groups. There was a marginal drop in children suffering from being underweight. There were more ST children, who were underweight than all the other groups, including the SCs. The latest NHFS-4 revealed that there was an overall improvement in the nutritional status of under-5 children across all social groups. But the nutritional status of ST children was worse than SC and other social groups. ST children suffered from under nutrition as evinced from wasting, stunting and being underweight, more than SC and all social groups.

State intervention in the food grain markets has been in existence in India for a long time.

Extensive use of this mechanism has been adopted from the Second World War period. A Public Distribution system that regulated the movement of food grains from the surplus production states to deficit states formed one of the core elements of the food management system.

There are several recommendations by various panels and researchers on how PDS can be revamped and redesigned. These include opening up of new outlets (fair price shops (fps)) with service provided at least in the morning and evening hours so that people can fetch food grains, computerisation of records, stringent enforcement and establishment of the grievance redressal mechanism, decentralized procurement and distribution system, making the availability of locally demanded food grains, the inclusion of millets and other items under PDS, and, allowances in lieu of the loss of wages.

Between 1951 and 1995, the production of food grains in India increased from 48.1 million tonnes to 167.2 million tonnes. Net availability of food grains, obtained by making adjustments for net imports and government stocks, indicates that during this period it has increased from 52.4 million tons to 167.8 million tons. Procurement of food grains directly from the farmers or from intermediaries such as traders or millers was taken up either under the support price obligations or to meet the requirements of the PDS. Most of the procurement operations until mid- 1960s were to meet the PDS requirements, and this was not vigorously followed up when food grains.

According to Agricultural Price Commission (1969), the benefits of PDS have accrued preponderantly to the urban population, except in the years of widespread drought. In a few states, attempts were made to extend the facility of Fair Price Shops to the labours, which were largely dependent on the market supply.

The PDS off-take is based on month-wise data supplied by the food ministry. The availability of month-wise figures made it possible to calculate PDS off-take for the agricultural year (July 2011 to June 2012), that is, the same reference period as NSS data on PDS purchases. The HS estimates are based on PDS off-take data available in the public domain for 2011-12 from the Foodgrains Bulletin, May 2013.

The state intervention in food grains procurement and distribution stabilized the prices and helped in rising agricultural production in the country. However, he felt that the equity effects

of PDS were diluted by including the rich and upper middle classes as the beneficiaries of the food subsidy programmes.

In short, the flagrant political bias comes out in the open in every aspect of farm price policy: fixation of MSPs, institutional arrangement for their implementation, storage and disposal. That is why, as Chand pointed out, MSPs are irrelevant to the growers of oilseeds, pulses, onion, potato, cotton, jute and copra, whatever the levels at which they are fixed. Even in the case of cereals, it is irrelevant except for the farmers cultivating just 20 per cent of the area under wheat and 30 per cent of the area under rice. On the face of it, what is academically perceived as 'something wrong, is exactly what the political economy of farm price policy regards as perfectly right.

There is a strong case for the introduction of millet and maize in the PDS. First, these grains are nutritionally superior to "fine" grains such as wheat and rice. Second, these crops are suited for dryland farming conditions that prevail in large parts of the country. Third, there is a huge potential for procurement of millets - in 2008-09, only 4% of total millet production was procured by the government. Fourth, procurement of millet/ maize would also be cheaper than buying wheat and rice. For instance, the economic cost of bajra in Rajasthan was half of that of paddy in 2010-11. Finally, the introduction of these grains would also impart a "self-selecting" character to the PDS as these grains are known to be more popular among the poor than richer rural households.

3.2.The Importance of Ragi under the Public Distribution System (PDS)?

- ❖ To increase the consumption level.
- ❖ To avail better nutrition.
- ❖ To avail advantages to the poor to sell ragi with Minimum Supporting Price (MSP).
- ❖ Since millet is a naturally nutrient-dense food, making it available through the PDS should enable the poor to have higher consumption leading to improved nutrition.
- ❖ Through Ragi under Public Distribution System, both consumers, as well as producers of ragi, are benefited.

3.3. Inclusion of millets under the Public Distribution System:

From the ancient period in most of the tribal villages of Odisha, millets have been their staple food for a generation. Since it is observed that, the habit of eating millets like ragi, janha, kangu, kodo etc. and cultivation has been disappearing for 15-20 years in most of the tribal areas due to social changes. As millets contain high nutritional value and can prevent malnutrition, Govt. of Odisha is supposed to include ragi in PDS commodities. Through PDS, ragi is available at a subsidised rate, this can increase the consumption level and procurement at the high minimum supporting price (MSP) which can reduce the loss of farmers in the market. Millets are a better nutrition source, greater climate resilience and a higher form of income for the farmers. Considering the above features of millets like health and income aspects govt. of Odisha has decided to establish mandi at the panchayat level and include ragi (finger millet) in the food commodity list.

3.4. Ragi under Public Distribution System in Odisha and other States

Karnataka is the first state to start the program to distribute millet through Public Distribution System in India. In the year 2013-2014, the Karnataka government initiated the process of procurement of millets such as finger millet in SouthKarnataka and Sorghum in North Karnataka. Millets are added to the list of food grains to improve the nutritional value of food supplied to the poor under the welfare program. Although supplying millet is likely cheaper but it contains higher nutrition particles.

From the millets variety, ragi has been selected to distribute in PDS centers since July 2019 by Odisha Govt. As the production of ragi is more than other varieties of millet in Odisha, the State government proposed to procure quintals of ragi from the tribal village farmers with a Minimum Supporting Price (MSP) which is higher than the market value or doubled to market value. The present market value of ragi is from Rs1500- Rs1800 per quintal but in Ragi Mandi or Mandia Mandi, the price is Rs3100 per quintal where the farmers can be get benefited from doubled value. To avail, the advantages of Minimum Supporting Price (MSP) government of Odisha established Ragi Mandi at panchayat levels. To promote the nutritional value of millets and improve the tribal economy, the Odisha government had decided to offer 1 kg ragi @1Rs per cardholder through Public Distribution System. The topic related to the procurement and distribution of millets was discussed in the Odisha Millets Mission under the

chairmanship of Chief Secretary Aditya Prasad Padhi. Mr. Aditya Prasad Padhi had directed to start of a pilot on ragi distribution in seven districts such as Gajapati, Kalahandi, Kandhamal, Koraput, Malkangiri, Nuapada and Rayagada from July 2019. In Malkangiri district as the consumption is widespread, the cardholders will be supplied 2 Kg of ragi and in the other 6 districts, the cardholders will be supplied 1Kg of ragi through Public Distribution System.

The pilot districts of Odisha involved Koraput and Malkangiri has been surveyed on November 2019. From the surveyed data it is found that in Koraput and Malkangiri households received Rs1/ Kg per card holder and in the other five districts such as; Rayagada, Kalahandi, Nuapada, Kandhamal and Nuapada district households received ragi Rs1/2

SOCIO-ECONOMIC STATUS OF THE SURVEYED HOUSEHOLD

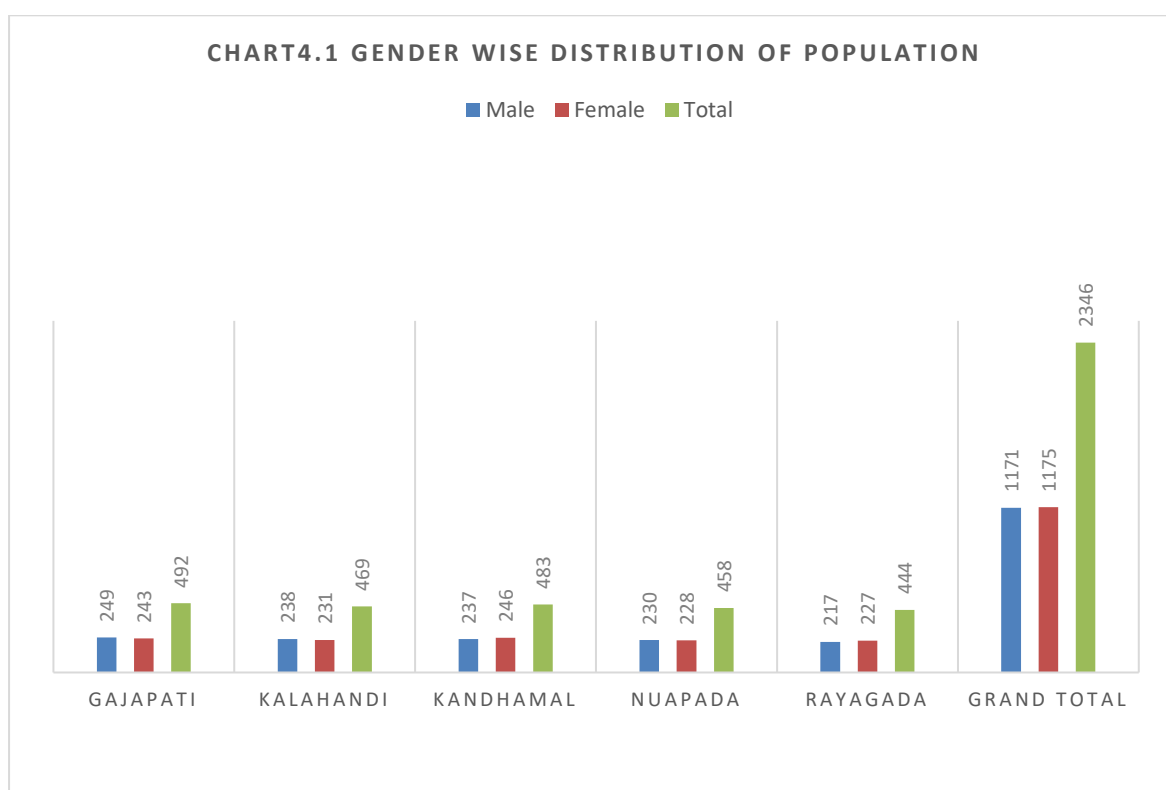
4.1. Introduction

This chapter looks into the social and demographic status of surveyed HHs. It provides the distribution of respondents by economic activities (not mutually exclusive as a HH can have multiple economic activities), social groups and Gender.

4.2. Gender-wise distribution of Population:

Combining, the total population of the surveyed household of Gajapati, Kalahandi, Kandhamal and Rayagada districts is 2346. Out of which 492 people belong to the Gajapati district, 469 numbers of people belong to the Kalahandi district, 483 number of people belong to the Kandhamal district, 458 number of people belong to the Nuapada district and 444 number of people belong to the Rayagada district. In Gajapati out of a total of 492 people, 249 are male persons and 243 are female persons. Correspondingly in Kalahandi out of 469 people 238 are male person and 231 are female person and in Nuapada district out of 458 people 230 are male person and 228 are a female person. Similarly in Kandhamal district out of 483 people 237 are male person and 246 are female person and in Rayagada district, out of 444 people 217 are male person and 227 are female persons. In Rayagada and Kandhamal districts the number of female people is higher than the number of male person. In the rest three districts, Gajapati, Kalahandi and Nuapada district number of male persons is higher than females. Out of the whole share surveyed information, the total population females person number is higher than the number of male persons in these five district.

Table 4.1 Distribution of sampled population by Gender across Odisha			
District	Male	Female	Total
Gajapati	249	243	492
Kalahandi	238	231	469
Kandhamal	237	246	483
Nuapada	230	228	458
Rayagada	217	227	444
Grand Total	1171	1175	2346



4.2 Main economic activities:

In the surveyed HHs population of Rayagada, Kalahandi, Nuapada, Kandhamal and Gajapati districts major of the people are involved in the cultivation and other work. Many of them are involved in agricultural labour. In the Kandhamal district, the highest number of 226 people are involved in cultivation. In the Gajapati district, 177 people are involved in cultivation. In the Nuapada district, 160 people are involved in cultivation. 430 people are involved in other work.

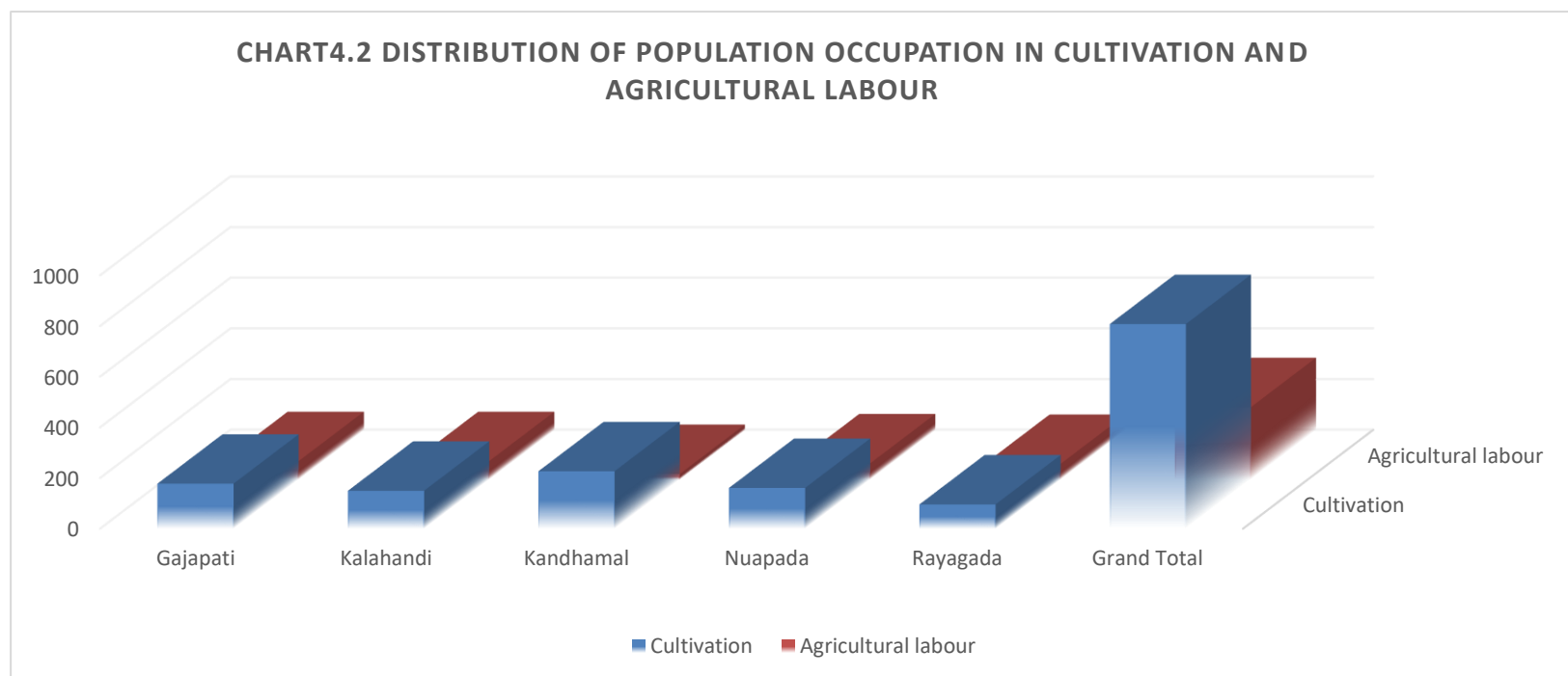


Table 4.2 Distribution of Population with occupation

District Name	Cultivation	Agricultural labour	Trading forest product	Govt. service	Private service	Housewife	Child	Student	Other
Gajapati	177	71	2	3	7	11	18	117	86
Kalahandi	149	71	0	0	5	19	22	128	75
Kandhamal	226	20	0	1	3	3	17	137	76
Nuapada	160	62	0	3	8	15	23	111	76
Rayagada	95	60	3	1	14	44	19	91	117
Grand Total	807	284	5	8	37	92	99	584	430

4.3 Conclusion:

From the above topic discussed under the socio-economic profile of the surveyed HHs in Rayagada, Kalahandi, Nuapada, Kandhamal and Gajapati districts, it is concluded that the female population is higher than the male population in only two districts i.e., Rayagada and Kandhamal but in overall the female population is higher than the male population. The main source of income for many people is agriculture. Very less people are trading forest products.

PRODUCTION

5.1 Introduction:

In this chapter an attempt has been made to throw some light on the status of production and productivity of Ragi cultivation in this district viz., Gajapati, Kalahandi, Kandhamal, Nuapada and Rayagada.

5.2 Area, Production:

Agriculture is one of the important economic activities of almost all HHs across the sampled district. From this table (5.2), it can be concluded that in Kalahandi district highest acre of land has cultivated Ragi cultivation from which production is also high quintal. In Kalahandi district, 51.25-acre land has cultivated ragi cultivation in the Kharif season, from which 132.8 qntl is production. Similarly, in the Nuapada district, 32.42-acre land was cultivated ragi in the Kharif season from which production is 72.2 qntl and in the Rabi season, 5-acre land has cultivated ragi from which production is 17.5 qntl.

Table 5.2 No. of HHs cultivating Ragi (Area in Acre/Production in Quintal)						
District	Kharif		Rabi		Total	
	Area	Production	Area	Production	Area	Production
Gajapati	32.05	47.77	0	0	32.05	47.77
Kalahandi	51.25	132.8	0	0	51.25	132.8
Kandhamal	46.9	68	1	0.5	46.9	68.5
Nuapada	32.42	72.2	5	17.5	37.42	89.7
Rayagada	17.4	54.5	0	0	17.4	54.5
Grand Total	180.02	375.3	6	18	185.02	393.27

5.3 Conclusion:

From this baseline survey, it is concluded that in the Kalahandi district production level is high and the Nuapada district is the second highest in production. The people who have not cultivated ragi opined that they are interested to cultivate ragi but the seed is not available sufficiently and the water problem is there. So, they are unable to cultivate ragi.

CONSUMPTION

6.1 Introduction:

Consumption plays a vital role in production and marketing. Demand for any product arises due to consumption. In this chapter, efforts are made to access the consumption of millets across seasons, the consumption of Ragi during different meals of the day and the different types of millet recipes consumed by the surveyed HHs.

6.2 Consumption during different Meals of the Day:

Consumption of Ragi by surveyed HHs during different meals of the day revealed that the highest 118 no of HHs consumed Ragi during breakfast and only one HH is consuming ragi during evening snacks. In the Nuapada district, 38.70 percent HHs are consuming Ragi during evening snacks which is the highest percentage.

6.3 Millets Recipes Consumed:

Consuming millet, especially ragi, as a staple food in tribal areas is years old practice that continues. From this baseline study, it was found that people are consuming millets in several ways in the form of Pitha, Mandiatorani, Handia, Khiri etc.

Table 6.3 showed that a total of 597 highest no. of surveyed HHs are consuming Ragi as MandiaTorani and a total 206 no. of surveyed HHs are consuming ragi as Pitha recipe. Very less HH that is only 12 HH are consuming ragi as a Khiri food item.

Table 6.2 Ragi consumption during different meals in a day

District	Breakfast		Lunch		Evening Snacks		Dinner	
	Nos. of HHs	Percentage	Nos. of HHs	Percentage	Nos. of HHs	Percentage	Nos. of HHs	Percentage
Gajapati	80	19.95	94	23.15	6	9.67	0	0
Kalahandi	79	19.70	71	17.49	21	33.87	0	0
Kandhamal	45	11.22	95	23.40	10	16.12	51	61.45
Nuapada	79	19.70	74	18.23	24	38.70	0	0
Rayagada	118	29.43	72	17.73	1	1.61	32	38.55
Grand Total	401	100	406	100	62	100	83	100

Table 6.3 Consumption of Millets Recipes (Nos. of HHs)

District	Pitha	MandiaTorani	Handia	Other (Khiri)
Gajapati	50	120	17	3
Kalahandi	53	118	11	9
Kandhamal	28	119	6	0
Nuapada	42	120	17	0
Rayagada	33	120	1	0
Grand Total	206	597	52	12

6.4 Season-wise consumption:

From the surveyed HH, it seasons wise consumption of ragi by people revealed that in Gajapati, Kalahandi and Nuapada districts, all most 120 HHs of each district that is out of a total of 598 HHs are consuming Ragi in the summer season and some of them also consuming Ragi in winter and rainy season. But the demand for ragi is usually higher by most people consume in the summer season. No surveyed HH in the Rayagada district are consuming Ragi in the rainy season and also only one surveyed HH is consuming ragi in the winter season.

Table 6.4 Season-wise consumption of Ragi						
District	Summer		Winter		Rainy	
	Nos. of HHs	Percentage	Nos. of HHs	Percentage	Nos. of HHs	Percentage
Gajapati	120	20.06	28	43.09	46	55.42
Kalahandi	120	20.06	29	44.61	29	34.94
Kandhamal	119	19.91	4	6.15	4	4.82
Nuapada	120	20.06	3	4.61	4	4.82
Rayagada	119	19.91	1	1.54	0	0
Grand Total	598	100	65	100	83	100

6.5 Conclusion:

Ragi is consumed across all seasons by the people but relatively more in summer. Many different recipes are popular and are consumed at all meal times. Most people preferred it in the form of MandiaTorani. Season-wise consumption may vary with the time of consumption and food items prepared in no. because there is some field where data is not recorded.

ANALYSIS AND FINDINGS

7.1 Ragi under PDS: Analysis and Findings:

It was decided to supply ragi in July but due to corona pandemic situation, it was not happened prescribed period. It was distributed in January 2021 in sampling districts Gajapati, Rayagada, Kandhamal, Nuapada and Kalahandi.

In Kandhamal district out of surveyed 120 HHs, only 1 HH from Tikabali block Kainjhar GP have not received Ragi under PDS. Surveyed HHs of other districts including Kandhamal district have received Ragi RS.1/2 kg. per card holder.

Table 7.1.1 Distribution of Ragi under the PDS Programme			
District	HHs Received	HHs Didn't received	Total HHs
	No.	No.	No.
Rayagada	120	0	120
Kalahandi	120	0	120
Nuapada	120	0	120
Kandhamal	119	1	120
Gajapati	120	0	120
Grand Total	600	1	600

Among the total surveyed 600 HH 562 HHs are satisfied with the quality of ragi supply under PDS but 37 no. of HH are not satisfied with the quality of PDS ragi. These 37no. of HH are from the Rayagada district (Table 7.1.2).

Chart 7.1.2 Distribution of HHs founding difference in between the quality of ragi

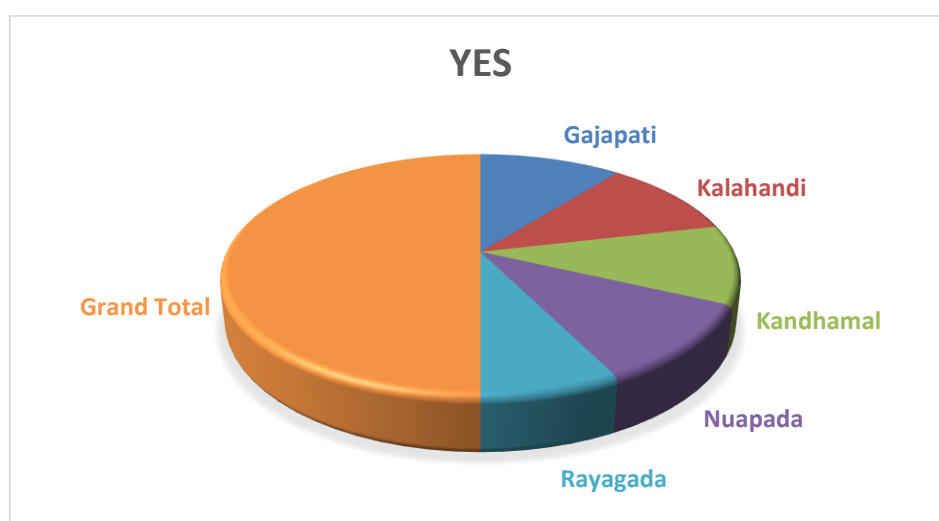


Table 7.1.2 Distribution of HHs founding any difference in between the quality of Ragi

Disitriect	Yes	No	Total
Gajapati	120	0	120
Kalahandi	120	0	120
Kandhamal	119	0	119
Nuapada	120	0	120
Rayagada	83	37	120
Grand Total	562	37	599

Among the total surveyed 600 HH 493 HHs are interested to receive Ragi quality supplied under PDS. Only 1 HH in the Rayagada district is interested to receive local market Ragi and 68 no. of HHs are interested to receive ragi quality by their production. And rest no. of the HHs is not interested to take ragi and they have forcefully taken ragi supply under PDS. But the maximum number of people are interested to receive Ragi under the OMM block.

Table 7.1.3 Distribution of HHs consuming the quality of Ragi

District	PDS Ragi	Local Market Ragi	Own Production	Total
Gajapati	101	0	19	120
Kalahandi	95	0	25	120
Kandhamal	110	0	9	119
Nuapada	106	0	14	120
Rayagada	81	1	1	83
Grand Total	493	1	68	562

Most surveyed HHs buy ragi from another source in case to fulfil their requirement. Total 240 HH which is the highest no. buys ragi from village shops. A total of 139 HHs buy ragi from outside village traders. Less HHs buy ragi from village farmers.

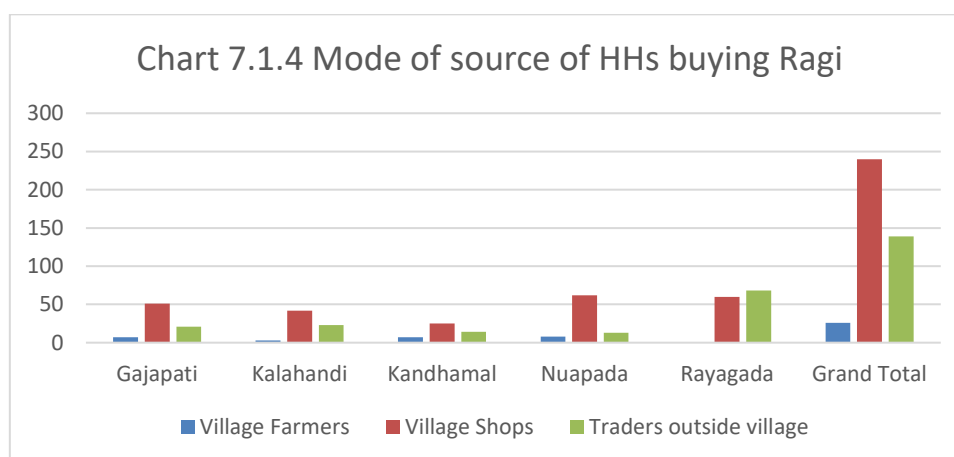


Table 7.1.4 Mode of source the HHs buying Ragi

District	Village Farmers	Village Shops	Traders outside village
Gajapati	7	51	21
Kalahandi	3	42	23
Kandhamal	7	25	14
Nuapada	8	62	13
Rayagada	1	60	68
Grand Total	26	240	139

In Rayagada, Kalahandi, Nuapada, Kandhamal and Gajapati districts, almost all people are interested to have more ragi in addition to rice.

Case study

Supply of Ragi in PDS: People's View

Case study:

The name of the respondent is Rita Naik 32-year-old from Mankadbata village of Kandhamal district. She has a family of 4 members; husband Sanjeeb Naik(35 years), one son(14 years) and one daughter (10 years). The prime occupation of Rita Naik is agriculture. They were residing out of state. Along with her husband, she involves in agricultural work and trading forest products. All family members are consuming ragi. During the distribution of ragi under PDS, they did not receive it due to residing out of the state. After returning to the village, she approached the govt officials to get the ragi but due to her neglect, she could not able to get the ragi. However, she knows how to make a variety of recipes made from Ragi. She is also interested to cultivate ragi. Interesting thing is that the family belongs to a village from a non-OMM block. It can be noticed that the consumption level in the non-OMM block is also increasing.

MAJOR FINDINGS

- ✚ In the Rayagada district, most of the villages have not received ragi regularly under PDS. The main reason they said that the agent denied supplying is because in the procurement center Ragi's availability is not sufficient.
- ✚ Maximum beneficiaries are interested to take ragi in addition to rice. However, some of the beneficiaries who are receiving ragi from FPs are selling in the local market instead of consuming. Because they are cultivating ragi in their land. People are demanding more quantity of ragi in the summer season.
- ✚ In the surveyed HHs of Rayagada, Kalahandi, Nuapada, Kandhamal and Gajapati districts, the majority of the people are involved in cultivation and agriculture activities.
- ✚ Agriculture is one of the important economic activities of almost all HHs across the sampled district. It is found that Kalahandi district's highest acre land has been cultivated Ragi and also in terms of production. In Kalahandi district, 51.25 acres of land have cultivated ragi cultivation in the Kharif season, from which 132.8 qntl is production. Similarly, in the Nuapada district, 32.42-acre land was cultivated ragi in the Kharif season from which production is 72.2 qntl and in the Rabi season, 5-acre land has cultivated ragi from which production is 17.5 qntl.
- ✚ Non-OMM village farmers are also interested to cultivate ragi in support of OMM. Farmers are interested to cultivate ragi but the seed is not available there sufficient and also, they face water problems.
- ✚ Consumption of Ragi by surveyed HHs during different meals of the day revealed that the highest 118 no of HHs consumed Ragi during breakfast and only one HH is consuming ragi during evening snacks. In the Nuapada district, 38.70 percent HHs are consuming Ragi during evening snacks which is the highest percentage.
- ✚ It has been observed from the study area that some FPs are not maintaining the Notice board properly and also some PEOs of the Gram Panchayats are not updating properly the supply of goods in the ration card of beneficiaries. Ragi Mandis' are not available in most villages.

- ✚ The data collected from district Civil supply offices reflect that they have not properly recorded data on the allotment, issue and supply of ragi in their respective districts, because during the questionnaire discussion with them they did not give us the data related to Ragi supply.

Reference:

- Satpathi Satyam, Saha Arghdeep and Basu Subhodeep, (2020) ‘Millets as a policy response to the food and nutrition crisis’; page-2;3rd paragraph.
- Masiero Silvia and Prakash Amit, (2015) “Does Computerization Reduce PDS Leakage?”; Page-78; 1st paragraph.
- ‘Millets as a policy response of the food and nutrition crisis’; page-4;3rd paragraph.
- “Public Distribution System, Food Subsidy and Production Incentives”, Vol.31, Page A-140
- Jha Praveen and Acharya Nilachal (2013), “Securing Food for All: Is it Really Difficult to Afford?”, Vol. 48, Pages 22-23.
- George P. S. (1996), “Public Distribution System, Food Subsidy and Production Incentives”, Vol.31, Page A-140.
- “Food Security for the Tribals: - A Study on PDS in Tribal Areas.” Pradip K. Bhowmick and Dr. Palash Chandra Coomar (2015); page-9; Paragraph-2.
- Dreze Jean, Himanshu, Khera Ritika and Sen Abhijit, (2015) “Clarification on PDS Leakages”, Vol.50, Page-72; 5th Paragraph.
- “Problems in Public Distribution System” (30th April 2015), Ramaswamy Velmurugan and Mrs. D.Lavanya. Page-51
- Raghban. M (2004), “Politics of Procurement and Price Support”; Vol. 39, Page-508; last paragraph.
- Khera Ritika, (2015) “Revival of the Public distribution system: Evidence and explanation”; page-43; 2nd paragraph (on millets).

Questionnaire for Household Survey (PDS)

Serial No:_____

Date of Interview:_____/_____/_____(DD/MM/YYYY)

Status of filling up the tool:

1-completed 2.-Partially Completed 3- Incomplete

A. Village Details:

A1. Village Name	
A2. Gram Panchayat Name	
A3. Block Name	
A4. District Name	

B. Information of the Household members:

[illegible]

2										
3										
4										
5										
6										
7										

[Use Code:

Relationship to HH head: 1- HH Head, 2- Spouse, 3- Son/daughter, 4- Son/ daughter-in-law, 5- Mother/ Father, 6-Other.

Marital Status: 1- Single, 2- Divorced, 3- Widowed, 4- Married

Education level: 1- No school, 2- Primary level, 3- Secondary level, 4- Technical or Vocational training, 5-Intermediate, 6- Graduation/ University, 7- Others

Occupation: 1- Cultivation, 2- Agricultural labor, 3- Trading of Forest Product, 4- Govt. Service, 5- Private service, 6-House wife, 7- Others

Annual Income: 1- >50,000, 2- <50,000, 3- 50,000<, 4- 1 lakh< , 5-Other]

C. Land Particulars

Sl.No.	Description	Irrigated	Un- Irrigated	Total(in acres)
A	Area Owned			
B	Area Leased out/ Mortgaged-out			
C	Area Leased-in/ Mortgaged-in/ Encroched-in			
D	FRA			

- Owned Land refers to right over and Possession of land
- Please mention Govt. Distributed Land in Acre at the bottom of the page

D. Utilization of Operational holding (Area in Acre/ Production in Quintal)

Sl. No	Crop name	Kharif		Rabi		Total	
		Area	Production	Area	Production	Area	Production
1	Paddy						
2	Ragi						
3	Other Millets						
4	Pulses						
5	Oil Seeds						
6	Tree Crops						
7	Vegetables						

E. Distance of ration shop: _____ km.

F. Is ragi sold in PDS: 1. Yes 2. No (Please mark any one option)(If ragi is distributing in PDS then proceed)

G. Procurement of PDS item

Sl.no	Goods under PDS	Quantity (Kg)	Price(Rs)	HH Consumption (Kg)	Sale (Kg)	Remark
1	Rice					
2	Wheat					
3	Ragi					
4	Dal					
5	Kerosene					

H. Food consumption frequency, total raw amount cooked per day and source of cereals and millets

Sl.No	Food items	Frequency of consumption (code)	Total amount cooked per day (all meals) (grams)	Source (kg/month)			For purchase from market		
				PDS	Home grown	Market	Whole Grains=1 Flour=2	Price (Rs) Per/kg	Frequency of purchase
1	Rice raw								
2	Wheat								
3	Ragi								
4	Dal								

(Code for: Consumption of frequency/ Ref. period: Daily=1, Twice/ Thrice a week=2, Once a week=3, Once in fifteen days=5, Occasionally=6)

I. When you say you are buying ragi from the market, who are you buying from mainly? _____
(1= Other farmers in the village 2= Shops in the village 3= Traders/ shops outside the village)

J. In which form you get ragi from PDS center (Mark the option)

1. Seed

2. Flour (mark the right option)

K. Timing of PDS center for distribution of goods: _____

M. More questions of Ragi distribution by PDS (Use Code)

Questions	Responses	Remarks
1. In which form you get ragi from PDS center-	a-Seed	
	b-Flour	
	c-Other	
2. If you have not received ragi under PDS, give the reason for it	a- Ragi was not available in the PDS shop	
	b- Agent denied to supply	
	c- Don't want to receive	
	d- Transportation difficult	
	e- Any other specify	
3. Are you satisfied with quality of PDS ragi	a- Yes	
	b- No	
4. If you are not satisfied with quality of PDS ragi. Give reasons	a. Poor taste	
	b. Uncleaned	
	c. Any other (Specify)	
5. Is there any difference in the quality of PDS ragi and ragi available in the local market or ragi produced by household?	a. Yes	
	b. No	
6. If yes, the quality of which ragi is better	a. PDS ragi	
	b. Ragi available in the local market	
	c. Ragi produced by the household	
7. Do you satisfied with quantity of ragi supplied under PDS?	a. Yes	
	b. No	

8. If no, how much more quantity you want totake under PDS-	_____	
9. The ragi provided at procurement center issufficient for your family?	a-Yes	
	b-No	
	c-Some what	
10. If no, then what should be done to make itadequate?	a. More should be provided	
	b. Other specify	
11.Are you willing to have more ragi under PDS?	a. In addition to Rice/ wheat	
	b. In subtraction to rice/ wheat	
	c. Other specify	
12. What would you suggest to make theProgramme successful	a. The amount should be more	
	b. It should be provided on regular basis	

	c. It will require strict govt. monitoring and supervision	
	d. Awareness should be created among people on this thing	
	e. Other specify	

Any other suggestions you would like to make

Name of the Investigator

Name of the Supervisor

QUESTIONNAIRE FOR PDS dealer

Village name: _____

GP: _____

Block name: _____

Name of the respondent: _____

Date: _____/_____/_____

Educational qualification: _____

A. Questionnaire (Use the code where given)

A1. Since how long have you been associated with this Programme	_____
A2. Are you belong to this GP? If no, where you from _____	1.Yes 2.No
A2. Timing of your PDS center-	_____
A3. How much quantity of ragi do you supply per head?	_____
A4. Are you facing any problem during the supply of ragi?If, yes justify _____	1. Yes, 2. No
A5. Are the beneficiaries interested to take ragi in? _____	1. In addition to wheat and rice

	2. In replace of wheat and rice 3. Other specify
A6. If yes, how many (approx.)	_____
A7. In which price you are distributing ragi per house hold?	_____
A8. From where ragi supplies to your PDS procurement center?	_____
A9. For your work how much salary you are getting-	_____
A10. During distribution of goods in your PDS center are you properly maintaining register-	1.Yes 2.No

Display of all information on a Notice Board at a prominent place-(mark under the right option)

Information	Yes	No
Number of APL, BPL, AAY beneficiaries		
Retail issue price		
Timing of opening and closing		
Opening stock of essential commodities on each day		

Records to be maintained-(Mark under the right option)

Records	Yes	No
Updated record of the ration card holder		
Stock register		
Tally register		
Issue or sale register		
Complaint book		
Such other register that may be prescribed by the Department from time to time		

Any other suggestion does you like to make this program successful

Name of investigator

Name of supervisor

QUESTIONNAIRE FOR DISTRICT CIVIL SUPPLY OFFICER

District Name: _____

Date of Interview: ____/____/____

Name of the respondent: _____

Sex: _____

Designation: _____

Questionnaire (Use the code where given the option)

1. Is there procurement center in your area?	a. Yes b. No
2. If yes, how many PDS procurement center in your area?	_____ _____
3. Are you supplying ragi to all procurement center in your district? If yes, mention the areas:If No, justify-	a. Yes b. No _____ _____ _____
4. If last year ragi was supplied to PDS center, have you supply it-this year-	a. Yes b. No
5. Quality of food items supply under PDS procurement center-	a. Pleased b. Satisfied c. Dissatisfied

6. Supply chain of ragi to PDS procurement center-	<div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div>
7. No of beneficiaries receiving ragi in your district under PDS	/ _____ /
8. Are you ensuring the stocks are not replaced by inferior quality stocks during storage?	a. Yes b. No
9. Have you found out damaging food items from procurement center?	a. Yes b. No
10. If yes, how you manage it-	a. Throw the damaged food b. Sold the damaged food to other c. If other specify -
11. Are you Supplying it by packaging?	a. Yes b. No
12. Are you monitoring the PDS centers?	a. Yes b. No
13. Have you face any problem during supply or have you listened any complain regarding the food items? If yes, mention it-	a. Yes b. No <div></div> <div></div>

14. Are you supplying the food items to the PDS center time to time?	a. Yes b. No
15. Have you face any transportation problem during supply of ragi to PDS center?	a. Yes b. No
16. If yes, justify -	<div style="border-bottom: 1px solid black; height: 1.2em; margin-bottom: 2px;"></div> <div style="border-bottom: 1px solid black; height: 1.2em; margin-bottom: 2px;"></div> <div style="border-bottom: 1px solid black; height: 1.2em;"></div>

Any suggestions do you like to make this program successful

Name of the investigator

Name of the Supervisor

QUESTIONNAIRE FOR TRANSPORTATION VEHICLE

District Name: _____

Block name: _____

GP Name: _____

Date of Interview: _____

Name of the respondent: _____

Sex: _____

Educational qualification: _____

Vehicle No: _____

1. Since how long have you been working here?	/ _____ /
2. How far is the Godown from your unloading point?	/ _____ /
3. Are you facing any problem during your work?	a. Yes b. No
4. If yes, mention the problem?	_____ _____ _____
5. How much quantity food grains you supply to the Godowns?	/ _____ /
6. Is there any limitation (quantity) to supply food items? If yes, mention _____	a. Yes b. No

7. For supplying these food item how much money you take?	/ _____ /
8. Are you supplying the food items regularly to Godowns?	a. Yes b. No
9. Who monitors your loading and unloading procedure?	/ _____ /
10. Are you maintaining the standards and regulations for transportation?	a. Yes b. No

Any suggestions to make this program successful

Signature of the investigator

Signature of the supervisor
