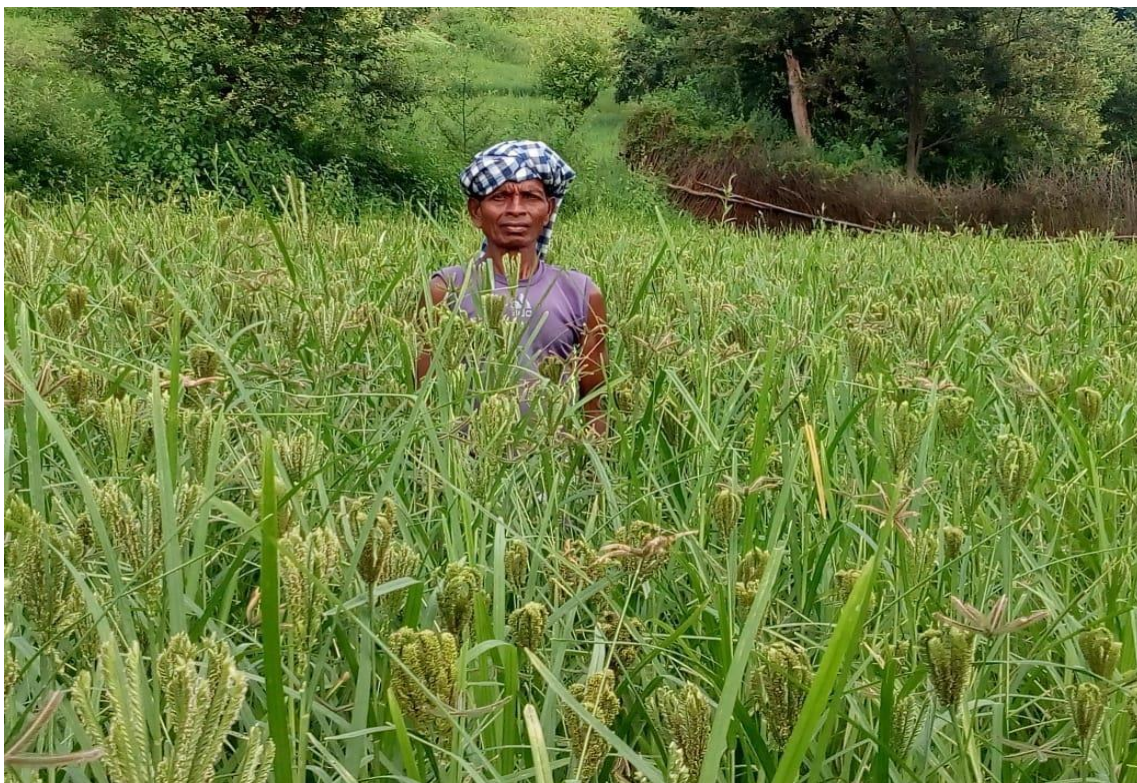# BASELINE SURVEY:

SUNDARGARH DISTRICT-2021-22, Phase V
(Special Programme for Promotion of Millets in Tribal Areas of Odisha or Odisha Millets Mission, OMM)

Nabakrushna Choudhury Centre for Development Studies, Bhubaneswar, Odisha (an ICSSR Institute in Collaboration with Government of Odisha)

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Citation: NCDS Study Team*, "Baseline Survey: Sundargarh District 2021-22, Phase V (Special Programme for Promotion of Millets in Tribal Areas of Odisha or Odisha Millets Mission, OMM)" Nabakrushna Choudhury Centre for Development Studies, Bhubaneswar March 2022.

(* See next page for details of NCDS study team)

STUDY TEAM

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FOREWARD

The "Special Programme for Promotion of Millets in Tribal Areas of Odisha" (Odisha Millets Mission, OMM) was originated at a consultation meeting held on 27 January 2016 at Nabakrushna Choudhury Centre for Development Studies (NCDS) under the Chairmanship of the then Development Commissioner-cum-Additional Chief Secretary (DC-cum-ACS), Government of Odisha, and Chairman, NCDS, Mr. R. Balakrishnan (currently, Chief Advisor, Government of Odisha). The consultation meeting had representatives from different line departments of the 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 the then Chairperson of Karnataka Agricultural Price Commission, Dr. T. Prakash. As per the decision taken at the consultation meeting, NCDS submitted a proposal to the Government of Odisha on the revival of millets. Following the decisions of the meeting, there was an announcement in the budget speech of on finance minister Odisha 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 Directorate 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.

In 2017-18, the budget was apportioned for 30 selected blocks, the phase 1 block for five year. A decision was taken to extend the programme to another 35 blocks in 2018-19 to 2023-2024 which has been implemented under DAFP funding support, Government of Odisha. Out of 35 blocks in the phase 2, 25 blocks of Bolangir, Kandhamal, Koraput, Mayurbhanj, Rayagada and Sundargarh were implemented in the year in 2018-19 and another 10 blocks of Bargarh and Nabarangpur were implemented during the year 2019-2020.

In the year 2019-2020, a decision was taken for implementation in four blocks consisting of Balisankara, Hemgiri, Lepripada and Tangarpali in Sundargarh district and implemented during Kharif 2021. Further a memorandum of agreement was signed on 11th June 2020

among District Mineral Foundation (DMF), Sundargarh, Nabakrushna Choudhury Centre for Development Studies (NCDS), Watershed Support Services and Activities Network (WASSAN) and Agriculture Technology Management Agency (ATMA) for extension of Odisha Millets mission Programmes, OMM under DMF Sundargarh for a minimum period of five years from 2020–2025, and an additional 4 blocks under DMF, Sundargarh in Kharif 2021, the phase 3 blocks, i.e. Gurundia, Lathikata and Lahunipada.

The objectives were to promote millets in Tribal-cum-Mining areas of the Districts to increase nutritional security and improved tribal livelihood by increasing the household consumption by about 25%, improving production and productivity of millets to make them profitable, by promoting millet processing enterprises at Panchayat/ block level for value added products for markets, developing millet enterprises through establishing market linkages to rural/urban markets focusing on women entrepreneurs and inclusion of millets in State nutritional programmes and Public Distribution System (PDS).

This baseline study report of Sundargarh is prepared by the team of Researchers of NCDS under the guidance of Dr. C.R. Das senior Research Officer with the help of Mr. Antim Alok Saraf and Mr. Nitin Kumar Hotha. I compliment all the members for their effort.

Director, NCDS

ACKNOWLEDGEMENTS

<div align="center">**EXECUTIVE SUMMARY**</div>

1 Study Area

1.1 In Sundargarh the "Special Programme for Promotion of Millets in Tribal Areas of Odisha (hereafter, Odisha Millets Mission, OMM)" under District Mineral Foundation (DMF) was started in Kharif 2020 in three blocks of the district, namely, Lahunipada, Gurundia, and Lathikata.

1.2 Data were calculated from 240 HHs @80 HHs from each block. It was reported that from the total surveyed HHs, 29 HHs had cultivated millets in 2019-20, the period covered under Phase V of the baseline survey.

2 Socio-Economic Profile

2.1 From the surveyed HHs, 169 HHs (71.3%) belong to the Scheduled Tribe (ST) category, 15 HHs (6.3%) belong to Scheduled Caste (SC), and 53 HHs (22.4%) belongs to Other Social Groups (OSGs) category.

2.2 75.9% of the surveyed HHs belongs to the Hindu religion and the rest are Christianity.

2.3 From the HHs surveyed it was evident that more than 95% were living below poverty line (BPL).

2.4 The distribution across economic activities (which are not mutually exclusive) of the surveyed HHs are as follows: cultivation (85.2%), Millets (5.5%), forest (12.2%), agricultural labourer and forest product collection (82.2%), services (11.8%), pension (15.2%), livestock (26.2%) and other activities (74.3%).

2.5 From the HHs surveyed, 56.5% HHs had kutcha houses, 32.8% HHs had pucca houses, and 44% HHs had semi-pucca houses.

3 Production

3.1 Primarily, three millet crops, viz., mandia or ragi (finger millet), sorghum and bajra (locally called as "gangei") millet were cultivated in the base year. Mandia was cultivated by 26 HHs in 27.4 acres (ac), sorghum was cultivated by only one HH in 0.6 ac and gangei was cultivated by 2 HHs in 2 acres.

3.2 From the total millets production of 26.5 quintals (Qtls), mandia was 25.1 Qtls (94.7%), sorghum was 0.2 Qtls (0.8%), and gangei was 1.2 Qtls (4.5%).

3.3   The yield of all millets was 0.9 quintal per acres. It was 0.9 Qtls/ac for mandia, 0.3 QTLs/ac for sorghum and 0.6 Qtls/ac for gangei.

3.4   The average per HH millet production was also 0.9 Qtls/HH. It was 1 Qtls/HH for mandia, 0.2 Qtls/HH for sorghum, and 0.6 Qtls/HH for gangei.

4   Package of Practices

4.1   From 26 HHs cultivating mandia, 24 HHs had adopted broadcasting in 25.9 ac producing 21.8 Qtls, 2 HHs had adopted line sowing/line transplanting in 1.5 ac producing 3.3 Qtls.

4.2   Two HHs had cultivated 1.2 Qtls of gangei in an area of 2 ac and one HH had cultivated 0.2 Qtls of sorghum in an area of 0.6 ac.

5   Consumption

5.1   The consumption of millets in different seasons (not mutually exclusive) indicates that 54 % HHs had consumed in summer, 38.8 % HHs had consumed in winter, 39.2 % HHs had consumed in the rainy season.

5.2   Findings regarding different meals of the day (not mutually exclusive) indicate that 52.3 % HHs had consumed in breakfast, 3.8% HHs had consumed in lunch, 27.8% HHs had consumed in evening snacks, and 8 % HHs had consumed in dinner.

5.3   To a query on the form in which millets were consumed (not mutually exclusive), 3.8% HHs indicated the consumption of millets in the form of jau (porridge, particularly ragijau), 59.5 % HHs indicated pitha (pancakes and other forms), 2.1 % HHs indicated mandiatorani (fermented ragi), 7.2 % HHs indicated khiri.

5.4   The majority of the consumers were found to have mandia through the PDS scheme in the district (42.9%). It is found that 67.9 % of the surveyed HHs consumed millets as against 32% non consumers.

6   Processing & Marketing

6.1   From the baseline survey it was evident that 8.1% HHs had processed millet manually, 78.1% by using a machine and 13.8% had processed both manually as well as using a machine.

6.2   Out of 14 HHs who reported marketing of millets, 13 HHs had sold millets in the market and 8 HHs had sold it to their neighbours.

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ABBREVIATIONS

AAO	Assistant Agriculture Officer
ACS	Additional Chief Secretary
APL	Above Poverty Line
ASHA	Alliance for Sustainable and Holistic Agriculture
ATMA	Agricultural Technology Management Agency
BPL	Below Poverty Line
DAFE	Department of Agriculture and Farmers' Empowerment
DAFP	Directorate of Agriculture and Food Production
DC	Development Commissioner
DDA	Deputy Director Agriculture
FGD	Focused Group Discussion
HH	Household
ha	Hectare
ac	Acre
IAS	Indian Administrative Service
JDA	Joint Director Agriculture
km	Kilometre
MoU	Memorandum of Understanding
MINI	Millets Network of India
NCDS	Nabakrushna Choudhury Centre for Development Studies
OFS	Odisha Finance Service
OMM	Odisha Millets Mission
OSG	Other Social Groups
PD	Project Director
QTLs	Quintals
RRA	Revitalizing Rainfed Agriculture
SC	Scheduled Caste
SHG	Self-help Group
ST	Scheduled Tribe
WASSAN	Watershed Support Service and Activities Network

Chapter 1

INTRODUCTION

1.1 Background

Sundargarh district has a huge potential for the development of industries because of rich mineral resources and has a vast deposit of iron, manganese, and chrome ores. The district occupies a prominent place in the mineral deposit potential map of India. As a result, HHs of sizable numbers are engaged in mining work for their livelihood shifting their occupation from farm to non-farm work. However, agriculture remains the main source of livelihood in the district. To revive and improve agricultural production, the District Mineral Foundation (DMF) has taken up many initiatives in this regard.

Millets are found to be the most ancient food grains that have been growing in Asian countries since 2700 BC (Gupta, Srivastava, & Pandey, 2012). The rapidly changing climatic condition is forcing the developing countries in general and India in particular to adopt millet cultivation and consumption due to the expansion of dry land (Haung et al., 2016 and ICRISAT, 2017) as millets can grow in hardy and drought conditions where major cereals fail to provide a sustainable yield (Hulse et al. 1980; Devi et al. 2014).

With the background of, keeping the nutritive value and climate resilient quality of millets in mind, the Special Programme for Promotion of Millets in Tribal Areas of Odisha (hereafter Odisha Millets Mission, OMM) with a novel organisational structure[1] was initiated by the Government of Odisha in 2017-18 giving emphasis to production, consumption, processing, and marketing of millets. In the 5th phase, started in Kharif 2021, 3 Blocks of Sundargarh namely Lahunipada, Gurundia and Lathikata have been added to the OMM program. Millets are small-seeded grains, which are now considered Nutri-cereals. Some of the millets cultivated in Sundargarh at the time of implementing OMM are ragi or finger millet, sorghum and gangei.

This baseline study attempts to provide necessary information on the above-mentioned dimensions of the programme in Sundargarh district, particularly for the newly added blocks. Thus, the profile of Sundargarh district is provided below.

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[1] This programme is implemented with combined efforts of Government, academia, and civil society.

1.2 District Profile

Sundargarh district is one of the Northern areas located districts of Odisha lies between latitude 21 degree 36' N to 22 degrees 32' N and longitude 83 degree 32'E to 85 degree 22' E. The district is bounded by Jharkhand state in the North, Jharsuguda district in the South, Chhattisgarh state in the East, and Keonjhar district in the West. The district has an area of 9712sq km with a population of 20.93 lakhs as per the 2011 census which consists of 10, 61,147 (Male) and 10, 32,290 (Female). The population density of the district is 216 per Sq. Km (19th in the state) and the literacy rate is 73.34 percent. The Sex ratio of the district is 973 females per 1000 male. The district is divided into 18 Tahasils and 17blocks.

Fig 1.1 Map of Sundargarh district with blocks

Source: https://gisodisha.nic.in/Block/SUNDARGARH.pdf
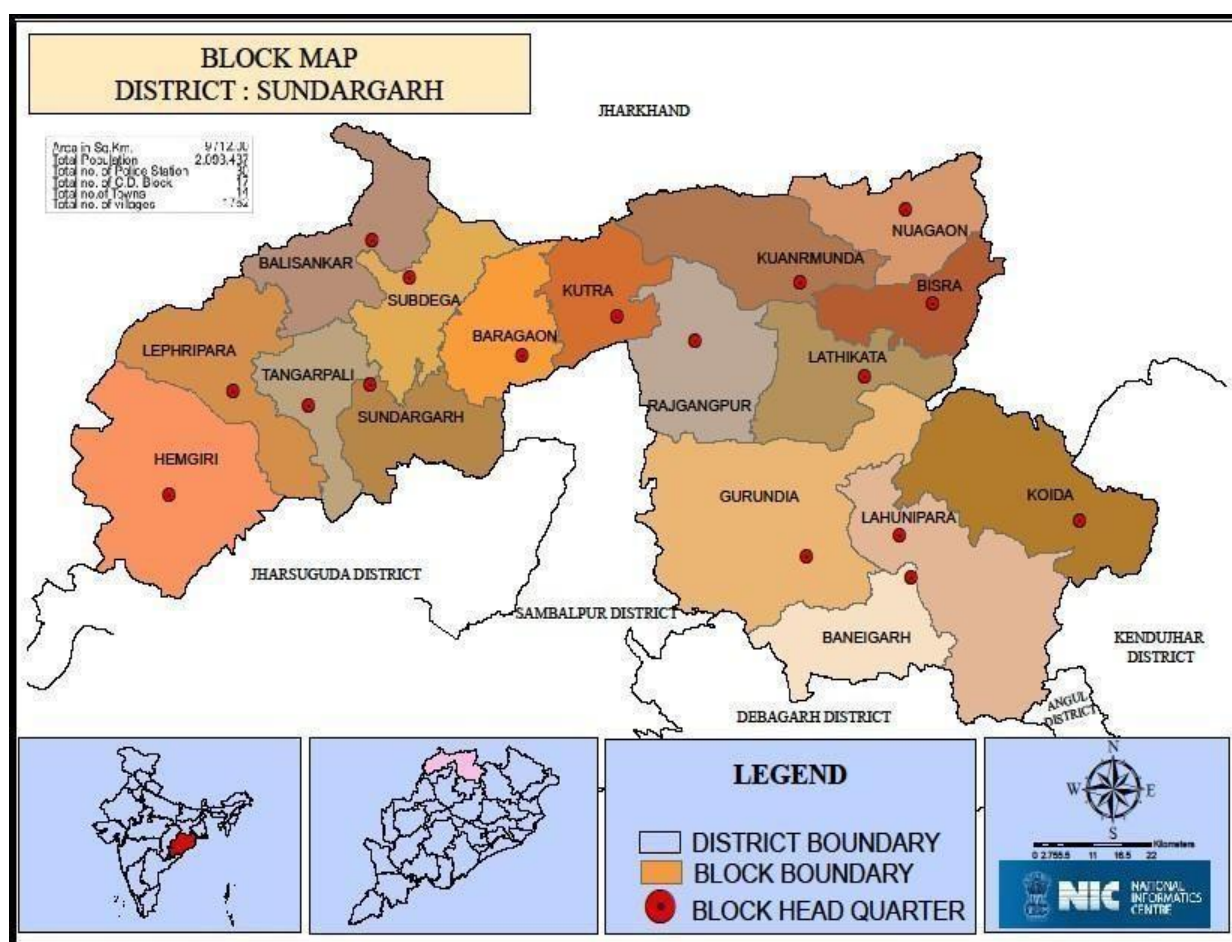
Table 1.1: Key Indicators of Sundargarh District

Census 2011	
Population (in Lakh)	20.93
Male (in lakh)	10.61
Female (in lakh)	10.32
Scheduled caste (in lakh)	19.16
Scheduled tribe (in lakh)	10.62
No. Of households (in lakh)	4.791
Average HH size	4.368
Sex ratio	973
Total worker (in lakh)	8.73
Main worker (in lakh)	5.35
Marginal worker (in lakh)	3.38
Non-worker (in lakh)	1.22
Work participation rate (WPR)	55.1
Literacy rate (%)	73.34
Land use pattern (area in 000 ha) 2014-2015	
Forest	168
Land put to non-agricultural use	69
Barren & non - cultivable land	74
Permanent pasture	33
Net area sown	207
Cultivable wasteland	45
Other fallow	47
Current fallows	70
Misc. Trees and groves	1941
District at a glance 2016	
Average fertilizer consumption (in Kg/ha)	31.93
Number of operational holdings	210240
Irrigation potential (000 ha)	237.8
No. Of villages electrified (in nos)	1723
No of banks (in nos)	245
No of AWC(in nos)	3266
No of BPL families (in nos)	2276
No of job cards issued (in nos)	359221
No of beneficiaries got employment in MGNREGA (in nos)	8961

Source: http://www.desorissa.nic.in/pdf/2015-dshb-Sundargarh.pdf
   http://censusindia.gov.in/2011census/dchb/2124_PART_B_DCHB_SUNDARGARH.pdf

1.3.   Objectives

The objectives of the baseline survey were to obtain information on proposed interventions under OMM about production, consumption, processing, and marketing. Along with this, the study tries to collect basic socio-economic information of respondents in the base year. It is also pertinent to have some background information on the HHs surveyed. The objectives are as follows:

- ➢ To assess the socio-economic condition of the HHs
- ➢ To outline millet production, productivity and the package of practices
- ➢ To examine the consumption pattern of millets
- ➢ To elucidate the method of processing.
- ➢ To examine the area and mode of marketing

1.4. Methodology

1.4.1 Sample design

Sundargarh district is proposed OMM to undertake the study on promotion of Millets in the phase-5 implementation under District Mineral Foundation (DMF). The climatic condition is convenient for millets cultivation, for which Sundargarh District is selected for the survey. Out of seventeen blocks, three blocks have been surveyed viz., Lahunipada, Gurundia, and Lathikata. In the first stage of sampling, two-gram panchayats were chosen randomly from each block, irrespective of the no. of GPs within the block. In the second stage sampling, two villages from each selected gram panchayat were chosen. The third stage of sampling had two parts, one was to select 15 households randomly from each selected village from the list of participating farmer households, the other part was to prepare a village listing of non-participating farmer households and then select five households randomly and if the participating households in the village are less than 15 then increase the number of non-participating households in the sample so that the total sample in the village will be 20. With the above sample design, 80 households have been surveyed from each block. However, as the information pertained to 2019-20 when the programme was not implemented, a common schedule was canvassed to all the surveyed households and the analysis could not distinguish between the two categories of households.

1.4.2 Data Collection

This baseline survey report is based on both secondary and primary data. The primary data were collected from the respondents in the concerned districts using the pre-tested interview schedule (Annexure 1) focusing on the basic demographic profile as well as the four dimensions of the programme viz. production, processing, consumption, and marketing of millets. The secondary data have been collected from different published and unpublished sources.

In addition to the methodology, for better understanding here we provide a brief description of the total millets produced, processed, consumed and marketed during the year 2021-22 (Table 1.2). The indicators are not calculated separately for participants and non-participants of the OMM programme. It is evident from previous baseline reports across districts that there is no such difference in millet production or utilization among the participants and non-participants.

Table 1.2: Distribution of HHs by Production and Utilisation of Millets

Blocks	Production		Consumption		Processing		Marketing	
	No	%	No	%	No	%	No	%
Gurundia	7	24.1	55	34.2	55	34.4	3	21.4
Lahunipada	13	44.8	51	31.7	51	31.9	8	57.1
Lathikata	9	31.0	55	34.2	54	33.8	3	21.4
Total	29	100.0	161	100.0	160	100.0	14	100.0

Source: Field Survey

1.5 Limitations

There are three broad limitations. First, the study relied on a random sample of 240 HHs due to logistic reasons and other difficulties (like non-availability of respondents) faced by the field investigators during data collection. Second, there is the possibility of recall error, particularly applicable in the case of the actual quantity of consumption, expenditure, investment, and marketing among others. Last but not the least, there were instances where surveyed households had consumed millets, but had not produced or processed them. This was possible because of past stock and acquiring of millets through exchange and barter. The details of this have not been captured.

1.6   Chapterisation

The baseline survey has been divided into six chapters including the current introductory chapter, which provides district profile, objectives, methodology, and limitations. Chapter 2 provides the socio-economic profile of surveyed HHs. Chapter 3 provides details on the production and productivity of millets. Chapter 4 discusses the consumption pattern of millets. Chapter 5 annotates on the processing and marketing of millets. Chapter 6 summarises the findings.

2
SOCIO-ECONOMIC PROFILE OF HOUSEHOLDS SURVEYED

2.1 Introduction

This chapter looks into the social and demographic profile of HHs surveyed through their distribution by social group, religion, and gender. Also, for the HHs surveyed, it provides the distribution by poverty status (proportion below poverty line and proportion above), distribution by economic activities (not mutually exclusive, as a HH can have multiple economic activities), and distribution by house structure.

2.2 Social and Demographic Profile

Out of 17 blocks in Sundargarh District, in Phase-V of Odisha Millets Mission, three blocks are functional, viz., Lahunipada, Gurundia and Lathikata. 240 HHs have been selected for the baseline study and 237 HHs have been surveyed practically. The distributions across social groups indicate that 15 HHs (6.3%) belong to schedule caste (SCs), 169 HHs (71.3%) belong to Schedule Tribe (STs), and 53 HHs (22.4%) belong to Other Social Groups (OSG) (Table 2.1 and Fig. 2.1). Further, it is found that 24% of the surveyed HHs belongs to Christian religion and rest are Hindus (Table 2.2.)

FIG 2.1 DISTRIBUTION OF HHS BY SOCIAL GROUPS ACROSS BLOCKS

SC,6.3
OSG,22.4
ST,71.3
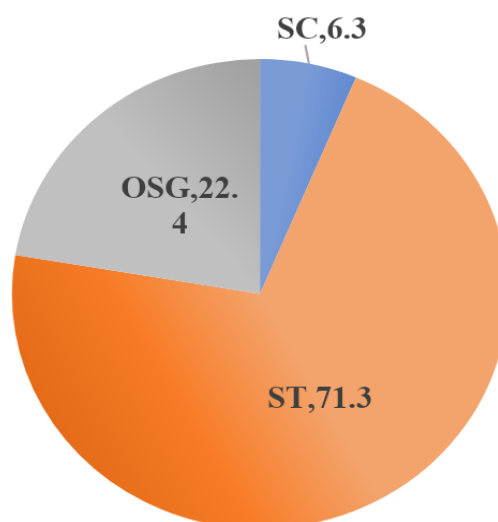
Table 2.1: Distribution of Households by Social Groups across Blocks

Social Groups	Gurundia		Lahunipada		Lathikata		Grand Total	
	HHs	%	HHs	%	HHs	%	HHs	%
SC	5	6.3	3	3.8	7	9.0	15	6.3
ST	33	41.3	72	91.1	64	82.1	169	71.3
OSG	42	52.5	4	5.1	7	9.0	53	22.4
Total	80	100.0	79	100.0	78	100.0	237	100.0

Source: Field Survey

Note: Percentages are rounded up to the first decimal, and hence, may not add up to total values summed over blocks.

Table 2.1.1: Distribution of Households by Religion across Blocks

Religion	Gurundia		Lahunipada		Lathikata		Total	
	HHs	%	HHs	%	HHs	%	HHs	%
Christian	12	15	23	29.1	22	28.2	57	24.1
Hindu	68	85	56	70.9	56	71.8	180	75.9
Grand Total	80	100	79	100.00	78	100.00	237	100.00

Source: Field Survey

Note: Percentages are rounded up to the first decimal, and hence, may not add up to total values summed over blocks.

The total population from the surveyed HHs was 1050 (Table 2.3). The share of the male population was higher than the female population. From the total population, nearly 52% were male and 48% were female. From the total population of surveyed HHs, 31.6% were from Gurundia block, 34.3% were from Lahunipada block and 34.1% were from Lathikata block.

Table 2.2: Distribution of Population by Gender across Blocks

Gender	Gurundia		Lahunipada		Lathikata		Grand Total	
	No	%	No	%	No	%	No	%
Male	174	52.4	187	51.9	184	51.4	545	51.9
Female	158	47.6	173	48.1	174	48.6	505	48.1
Grand Total	332	31.6	360	34.3	358	34.1	1050	100.0

Source: Field Survey

2.3 Poverty Status

The poverty status of the surveyed HHs has been examined through the concept of below poverty line (BPL) and above poverty line (APL). HHs having Antyodaya or priority cards are referred to as BPL and those without these are referred to as APL. From the surveyed HHs, 95.8% HHs are of BPL category and the rest (4.2%) are APL (Table 2.3). The incidence of poverty is more than 90% in all blocks and all the HHs from Lahunipada belongs to BPL category.

Table 2.3: Distribution of Households by Poverty Status across Blocks

Row Labels	Gurundia		Lahunipada		Lathikata		Grand Total	
	HHs	%	HHs	%	HHs	%	HHs	%
APL	7	8.7			3	3.9	10	4.2
BPL	73	91.3	79	100	75	96.1	227	95.8
Grand Total	80	100	79		78	100	237	100

Source: Field Survey

Note: BPL is below poverty line and APL is above poverty line

2.4 Economic Activities

Economic activities of surveyed HHs show that 85.2% of the surveyed HHs were engaged in cultivation, 5.5% HH in millet production, 12.2% HHs in forest products business, 11.8% HHs were in services, and 15.2% were getting pensions, 26.2% HHs in the livestock business and 74.3% HHs in other activities (these include Daily wage labour and business). From Table 2.4, it can be concluded that the major occupation of surveyed HHs in all blocks was cultivation in 2019-20 followed by other economic activities.

Table 2.4: Distribution of Households by Economic Activities across blocks

Economic Activities	Gurundia		Lahunipada		Lathikata		Total	
	No	%	No	%	No	%	No	%
Agriculture	69	86.3	71	89.9	62	79.5	202	85.2
Millets	3	3.8	7	8.9	3	3.8	13	5.5
Horticulture	1	1.3		0.0	1	1.3	2	0.8
Forest	1	1.3	13	16.5	15	19.2	29	12.2
Agriculture labour		0.0	6	7.6	3	3.8	9	3.8
Salary	8	10.0	7	8.9	13	16.7	28	11.8
Pension	12	15.0	11	13.9	13	16.7	36	15.2
Livestock	14	17.5	45	57.0	3	3.8	62	26.2
Others	50	62.5	60	75.9	66	84.6	176	74.3
Total	80	100.0	79	100.0	78	100.0	237	100.0

Source: Field Survey

Note: Activities totals are not additive across economic activities as one household can be engaged in more than one economic activity.

2.5 Structure of House

House structure is another important indicator to assess the economic condition of HHs. Out of the total HHs surveyed, 56.5% had kutcha houses, 44% had semi-pucca houses and 32.8% had pucca houses in 2020-21 (Table 2.5 and Fig 2.2). The percentage of kutcha houses is the highest in Lathikata (61.5%) whereas the percentage of pucca houses is the highest in Lahunipada (47.5%).

Table 2.5: Distribution of Households by House Structure across Blocks

House Structure	Gurundia		Lahunipada		Lathikata		Total	
	HHs	%	HHs	%	HHs	%	HHs	%
Pucca	16	34.8	19	47.5	9	18.8	44	32.8
Semi-pucca	18	39.1	20	50.0	21	43.8	59	44.0
Kutcha	46	57.5	40	50.6	48	61.5	134	56.5
Grand Total	80	100.0	79	100.0	78	162.5	237	100.0

Source: Field Survey

2.6   Conclusion

The socio-economic profile of the HHs surveyed indicates that the majority of the respondents belong to the ST community (71.3%) among social groups. Among the total respondents, 75.9 % of respondents are Hindus and 95.8 % of them are poor household having cultivation as major economic activity. In all the blocks, it is found that the percentage of males is higher than females. Further, it is reported that a larger population (56.5%) reside in Kutcha houses. The next chapter i.e., Chapter 3, looks into aspects related to millets productions.

3
PRODUCTION

3.1   Introduction

In this chapter, an attempt has been made to throw some light on the status of production and productivity of millets, usage of seeds, and package of practices in Sundargarh district. This chapter is based on baseline data (2021-22) of HHs surveyed in Lahunipada, Gurundia and Lathikata blocks where OMM has been operational since Kharif 2021.

3.2   Area, Production, and Yield

Broadly three types of millets, viz., mandia, sorghum and gangei were cultivated in 2020-21 by the HHs surveyed in Sundargarh district (Table 3.1). The total production of different types of millets by 29 HHs surveyed comes to 26.5 qtls. Mandia was cultivated by 26 HHs in an area of 27.4ac with a production of 25.1 qtls (94.7% of the total millet production). Similarly, Sorghum was cultivated by a single HH in an area of 0.6ac with a production of 0.2 qtls. Likewise, gangei was cultivated by only 2 HHs in an area of 2ac with a production of 1.2 qtls, which represents 4.5% of the total millet production.

Fig 3.1 Yield of millets in sundargarh
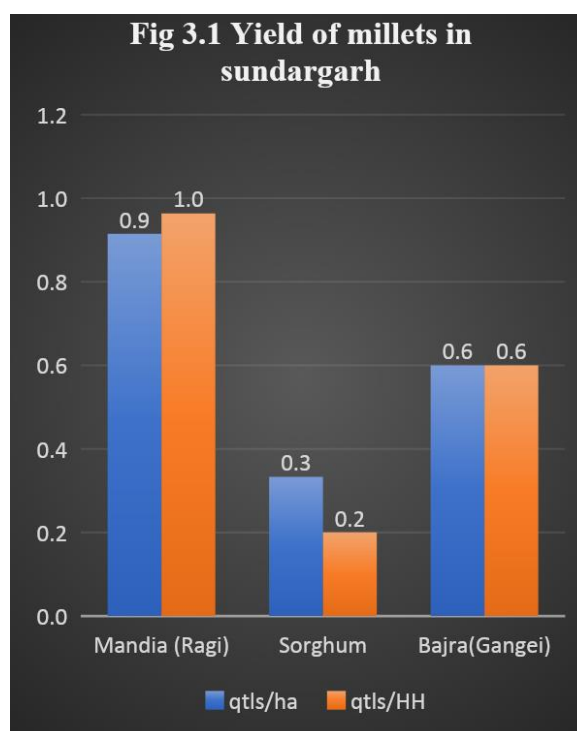
Table 3.1: Area, Production, and yield of Millets in Sundargarh District

Millets	HHs		Area		Production		Yield	
	No	%	Ac	%	QTLs	%	QTLs/ac	QTLs/HH
Mandia (Ragi)	26	89.7	27.4	91.3	25.1	94.7	0.9	1.0
Sorghum	1	3.4	0.6	2.0	0.2	0.8	0.3	0.2
Bajra (Gangei)	2	6.9	2	6.7	1.2	4.5	0.6	0.6
Total	29	100.0	30	100.0	26.5	100.0	0.9	0.9

Source: Field Survey

Note: Total no of HHs is not additive across Millets, as one HH may cultivate more than one type of millets. The area figures are rounded up to the first decimal, and hence, may not add up to total values summed over blocks and crops.

The average yield of all millets was 0.9 Qtls/ac, mandia was 0.9 QTLs/ac, sorghum was 0.3 QTLs/ac, and gangei was 0.6 QTLs/ac (Table 3.1 and Fig 3.1). The average production per millet cultivating HH for all millets was also 0.9 Qtls/HH; it was 1 Qtls/HH for mandia, 0.2 QTLs/HH for sorghum, and 0.6 QTLs/HH for gangei.

Table 3.2 provides information on production, area and yield of different kinds of millets across different blocks of Sundargarh district. Both Gurundia and Lathikata have only mandia cultivators in an area of 6.5 and 7.8 acres with a yield of 1.9 Qtls/ac and 0.6 Qtls/ac respectively. In Lahunipada 10 HHs are found to cultivate mandia in an area of 13.1 acres with a yield of 0.6 Qtls/ac and 0.8 Qtls/HH. Only one HH has cultivated 0.2 Qtls of sorghum in 0.6 ac. Two HHS have cultivated Bajra, which they locally called as Gangei, in 2 acres of area with a yield of 0.6 Qtls/ac and 0.6 Qtls/HH.

Table 3.2: Area, Production, and yield of Millets across blocks

Blocks	Millets	HHs		Area		Production		Yield	
		No	%	Ac	%	QTLs	%	QTLs/ac	QTLs/HH
Gurundia	Mandia	7	100.0	6.5	100	12.2	100	1.9	1.7
Lathikata	Mandia	9	100.0	7.8	100	5.0	100	0.6	0.6
Lahunipada	Mandia	10	76.9	13.1	83.4	7.8	84.8	0.6	0.8
	Sorghum	1	7.7	0.6	3.8	0.2	2.2	0.3	0.2
	Bajra(Gangei)	2	15.4	2	12.8	1.2	13.0	0.6	0.6
	Total	13	100	15.7	100	9.2	100	0.6	0.7

Source: Field Survey
Note: Total no of HHs is not additive across Millets, as one HH may cultivate more than one type of millets. The area figures are rounded up to the first decimal, and hence, may not add up to total values summed over blocks and crops.

3.3 Perception on Quality of Seeds Used

Seed is an important input that determines the production, yield, and quality of millets. The HHs surveyed in Sundargarh used local varieties of seeds. All the HHs who had cultivated millets during 2020-21 have reported about their perception on the quality of seed, which they used in the fields for cultivation (Table 3.3 and Fig 3.2). A three-point scaling technique, viz., good, average, and poor was used to measure the

Fig 3.2: Perception of respondents on quality of seeds

Average, 17%

Bad, 14

Good, 69%
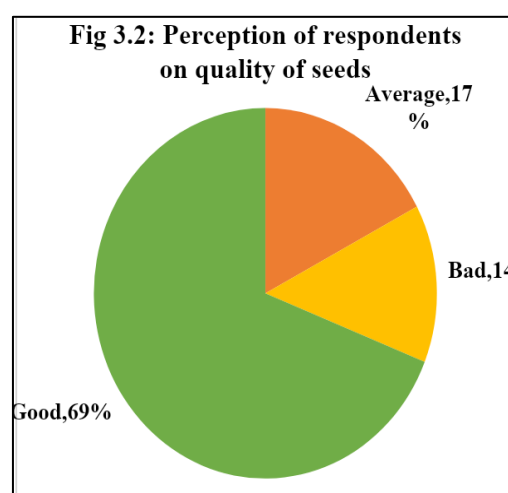
perception of HHs towards the quality of seeds used. It shows that 69 % opined that the seed quality used by them was good, 17.2% opined for average quality of seed and 13.8 % HHs had opined for poor quality of seed.

Block-wise data on perception of seed quality reveals that the perception of the quality of seed being good was the highest in Gurundia (85.7%). Similarly, the perception of the quality of the seed being poor was the highest in Lahunipada (15.4 %).

Table 3.3 Perception of respondents regarding the quality of seeds

Seed Quality	Gurundia		Lahunipada		Lathikata		Grand Total	
	No	%	No	%	No	%	No	%
Average			3	23.1	2	22.2	5	17.2
Bad	1	14.3	2	15.4	1	11.1	4	13.8
Good	6	85.7	8	61.5	6	66.7	20	69.0
Grand Total	7	100.0	13	100.0	9	100.0	29	100.0

Source: Field Survey

3.4   Package of Practices

The different agronomic practices (broadcasting, line sowing/line transplanting system of millet intensified) used for the cultivation of different millets by the surveyed HH are presented in this section. Out of the 26 mandia cultivating HHs, almost every HHs had adopted a broadcasting method covering an area of 25.9 ac producing 21.8 Qtls with a yield of 0.8 Qtls/ac and only 2 HHs had used line showing or line transplanting method in 1.5ac producing 3.3Qtls with a yield of 2.2 Qtls/ac. All other HHs cultivating sorghum and gangei have adopted the broadcasting method only with a yield of 0.3 Qtls/ac and 0.6 QTLs/ac respectively. No HH had used the SMI method of cultivation (Table 3.4).

Table 3.4: Package of practices for Millet cultivation in selected Blocks

Millets	Package of practices	HHs		Area		Production		Yield
		No	%	No	%	No	%	
Mandia	Broad casting	24	92.3	25.9	94.5	21.8	86.8	0.8
	LT/LS	2	7.7	1.5	5.5	3.3	13.2	2.2
	Total	26	100.0	27.4	100.0	25.1	100.0	0.9
Sorghum	Broad casting	1		0.6		0.2		0.3
Bajra (Gangei)	Broad casting	2		2		1.2		0.6

Source: Field Survey

Note: The area and production figures are rounded up to the first decimal, and hence, may not add up to total agronomic practices

3.5   Conclusion

Three types of millets, viz., mandia, sorghum and gangei were cultivated in Sundargarh during the period covered under baseline survey, 2020-21. The predominant crop grown was mandia (91.3% of area and 94.7% of produce). Sorghum and gangei were grown by only one and two HHs from Lahunipada block respectively. Nearly 70 % perceived the seed quality they used to be good, nearly 17% considered it to be average, and 13.8 % perceived it to be poor. Most of the surveyed HHs had cultivated millets through broadcasting and few by line sowing or line transplanting. None of the HHs had adopted the SMI method in Sundargarh for the period covered under the baseline survey. In the next chapter, the consumption of millets has been discussed.

4
CONSUMPTION

4.1   Introduction

Demand for any product arises due to consumption. Hence, consumption plays a vital role in production and marketing. Efforts are made in this chapter to assess consumption of millets across seasons, consumption of millets during different meals of the day and on different types of millet recipes consumed by the HHs.

4.2   Season-wise Consumption

From all the HHs surveyed, 67.9 % of them had consumed millets in any season of the year, 54% had consumed during summer, 38.8% during winter and 39.2% had consumed during rainy season (Table 4.1). Greater consumption during summer was due to their perception that consumption of millet reduces the chances of feeling thirsty and hungry. About 32 % of the surveyed HHs had not consumed millets in any of the seasons.

Table 4.1: Season wise consumption of millets

Season	Gurundia		Lahunipada		Lathikata		Total	
	No	**%**	**No**	**%**	**No**	**%**	**No**	**%**
Summer	42	52.5	38	48.1	48	61.5	128	54.0
Winter	24	30.0	30	38.0	38	48.7	92	38.8
Rainy	23	28.8	31	39.2	39	50.0	93	39.2
Total Millets consuming HHs	55	68.8	51	64.6	55	70.5	161	67.9
Total Millets non consuming HHs	25	31.3	28	35.4	23	29.5	76	32.1

Source: Field Survey

Note: Total column is not an addition across seasons, as a HH can consume millets in multiple seasons.

4.3   Source of millets among millets consuming HHs

Consumption of millets is found to be very high among surveyed HHs in the study area despite small of cultivation of millets. This study analyzed the source of millets among the consumers as per their responses, to find out the cause of disparity between cultivation and consumption.

Fig 4.1 Source of millet cosumption

Table 4.2 suggests that 17.4 % of the millet consuming HHs had their own production, 16.8 % took millets from their relatives or had storage, 23 % had purchased and 42.9 % had got it through PDS only (2 kg/month). It indicates that major junk of the millet consuming HHs (57.1 %) wouldn't have consumed millet without the PDS scheme. Though almost every HHs are getting millets through PDS, nearly 32 % are still not consuming it and they don't have a recent history of millet consumption.
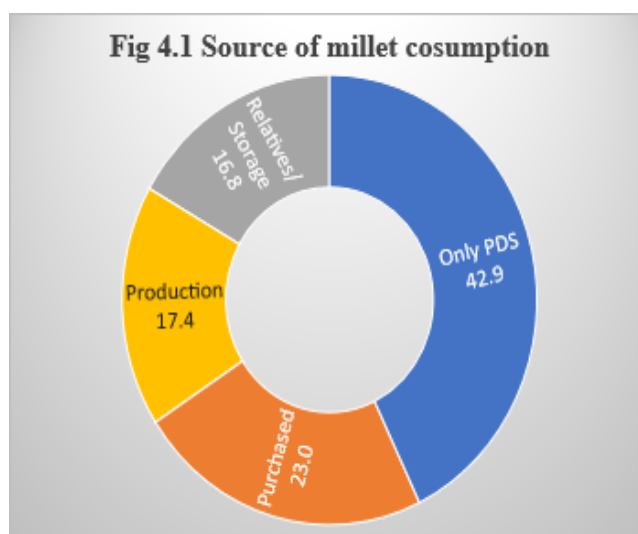
Table 4.2: Source of Millets among Millet consuming HHs

Sources	Gurundia		Lahunipada		Lathikata		Total	
	No	%	No	%	No	%	No	%
Only PDS	33	60.0	20	39.2	16	29.1	69	42.9
Purchased	14	25.5	10	19.6	13	23.6	37	23.0
Relatives/Storage	1	1.8	6	11.8	18	32.7	27	16.8
Production	7	12.7	13	25.5	8	14.5	28	17.4
Total Millets consuming HHs	55	68.8	51	64.6	55	70.5	161	67.9
Total Millets non consuming HHs	25	31.3	28	35.4	23	29.5	76	32.1

Source: Field Survey

4.4   Consumption during Different Meals of the Day

Consumption of millets by HHs during different meals of the day reveals that 52.3% HHs had consumed it in their breakfast, 3.8% HHs had consumed it in their lunch, 27.8% HHs had consumed it in evening snacks and 8 % had consumed in dinner (Table 4.3). The time of consumption of millets also depends upon the recipe, which leads to the next table.

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Table 4.3: Millets Consumption during different Meals of the Day

Food Pattern	Gurundia		Lahunipada		Lathikata		Total	
	No	%	No	%	No	%	No	%
Breakfast	47	58.8	46	58.2	38	48.7	124	52.3
Lunch	3	3.8	2	2.5	5	6.4	9	3.8
Evening Snacks	26	32.5	21	26.6	22	28.2	66	27.8
Dinner	5	6.3	14	17.7	2	2.6	19	8.0
Total Millets consuming HHs	55	68.8	51	64.6	55	70.5	161	67.9
Total Millets not consuming HHs	25	31.3	28	35.4	23	29.5	76	32.1

Source: Field Survey

Note: Total column is not an addition across different meals of the day, as a HH can consume millets in more than one meal during a day.

4.5 Millet Recipes Consumed

Consumption of millets, especially mandia, was found to be a staple food in Sundargarh from time immemorial. People were consuming millets in several ways in the form of porridge, bread, steamed and beverages among others. The details on consumption of millets recipes during the baseline period are mentioned in Table 4.4.

Table 4.4: Distribution of HHs Consumed different Millet Recipes across blocks

Food Item	Gurundia		Lahunipada		Lathikata		Total	
	No	%	No	%	No	%	No	%
Jau	2	2.5	1	1.3	6	7.7	9	3.8
Pitha	50	62.5	39	49.4	52	66.7	141	59.5
Mandia-Torani	2	2.5	3	3.8	0	0.0	5	2.1
Khiri	6	7.5	11	13.9	0	0.0	17	7.2
Sorghum Rice	0	0.0	1	1.3	0	0.0	1	0.4
Roti	0	0.0	0	0.0	1	1.3	1	0.4
Total Millets consuming HHs	55	68.8	51	64.6	55	70.5	161	67.9
Total Millets not consuming HHs	25	31.3	28	35.4	23	29.5	76	32.1

Source: Field Survey

Note: Total column is not an addition across recipes, as a HH can prepare and consume more than one recipe of millets.

Table 4.4 shows that 3.8% HHs had consumed millets as porridge, locally called jau which is popularly known in Odisha as mandia-jau (finger millet porridge). Nearly 60 % of the HH had consumed millet in the form of pitha (pancake), which is another popular millet food recipe. In Lahunipada Block, most of the consumers have it in the rainy season making pitha mixing with Mahua flower. Mandia-Torani (fermented ragi) is another type of millet

food recipe. This recipe is prepared by adding water with the cooked finger millet that is kept overnight or longer for fermentation. It has been a common food for nearly 2.1 % of HHs. Further 7.2 % of the HHs had consumed as Khiri and 0.4 % each as sorghum rice and roti (Ragi bread). The study also suggests that recipes like jau, mandia-torani, khiri are more prevalent in summer as breakfast and evening snacks whereas millet pitha and roti are commonly consumed in rainy and winter season as evening snacks and dinner.

4.6   Conclusion

Though there is an absence of regular consumption of millet recipes, there is a long history of the same, which we found during interaction with the elderlies of the localities and even they were aware of some of the health benefits. Now millets were consumed across all seasons in relatively lower quantities, but comparatively more in summer. Though more than 60 % of HHs were consuming millets, more than 40 % of them have no requirements for millets. They have just consumed because of the PDS supply. Pitha, Khiri, and jau were the recipes that are popular and millets were consumed more during breakfast and evening snacks. The next chapter looks into the processing and marketing of millets.

5
PROCESSING AND MARKETING

5.1   Introduction

This chapter investigates the processing of millets by traditional manual methods and by machines and the mode by which millets are sold. It also attempts to make an analysis of millets produced, consumed, sold and stored.

5.1.1 Processing Units

The processing of millet grains is necessary for the storage and preparation of different recipes. The processing of grains is done by decorticating/dehusking, grinding, malting, fermentation, roasting and flaking to improve their edible, nutritional, and sensory properties. Traditionally, the burden of processing of grains and the associated drudgery has largely been borne by women.

The distribution of surveyed HHs by the method of processing (dehusking and grinding) has been presented in Table 5.1. Only 8.1 % had processed millets manually, the majority (78.1 %) had used machines and 13.8 % reported the processing of millets by both manually and machines. Only one HH among all the consumers had bought processed millet for direct consumption. Discussion with the consumers indicates that small quantities were being required for HH consumption and availability of grinder/ mixture and even some rice processing machines led to the use of machines for millet processing.

Table 5.1: Distribution of HHs by different Method of Processing of Millets

Processing	Gurundia		Lahunipada		Lathikata		Grand Total	
	No	%	No	%	No	%	No	%
Both	2	3.6	4	7.8	16	29.6	22	13.8
Machine	49	89.1	39	76.5	37	68.5	125	78.1
Manually	4	7.3	8	15.7	1	1.9	13	8.1
Total	55	100.0	51	100.0	54	100.0	160	100.0

Source: Field Survey

All the HHs who processed millets by machines, owned by others. It is evident that the HHs were depending on other pulverizers for the processing of millets and they were not having their own machines.

5.3 Marketing

The marketing of millets is considered an important dimension for millet producing HHs to earn income by selling their surplus produce. Better marketing opportunities generate hope and interest to cultivate millets among these HHs. Out of the total 29 HHs surveyed who reported producing millets during 2020-21 as mentioned in Chapter-3, 14 HHs (48.3%) marketed their surplus. It is concluded from discussions that people are producing millets in small quantities for their own consumption only once in 2/3 years. Those who had marketed have kept some quantities for seed and own consumption. Out of 14 HHs who reported marketing of millets, 92.9% had sold millets in the market not far from their land and the rest had sold to neighbours (Table 5.3). About half of the millet sellers had sold it both in the neighbourhood and in the local market. It is evident that not many HHs had produced millets commercially as the consumption is low in the locality.

Table 5.2: Distribution of HHs by mode of selling Millets across blocks

Selling Point	Gurundia		Lahunipada		Lathikata		Grand Total	
	No	%	No	%	No	%	No	%
Market	3	100	7	87.5	3	100.0	13	92.9
sale to Neighbour	3	100	4	50	1	33.3	8	57.1
Total	3	100	8	100	3	100.0	14	100.0

Source: Field Survey
Note: Total column is not an addition across different modes of selling, as a HH can sell millets in multiple modes.

5.4 Conclusion

During the baseline survey, before the implementation of Odisha Millets Mission, 8.1 percent of the HHs processed their millets manually (particularly dehusking and grinding). From those who processed through machines, all of them used other pulverizers and grinders. Half of the HHs sold their millets in both ways: through market and neighbourhood.

6
MAJOR FINDINGS

6.1   Based on the socio-economic profile, it was found that most of the respondents belong to ST category (71.3%) category, Hindu (75.9%) by religion, poor (95.8%) by economic condition, and cultivators (85%) by economic activity.

6.2   Three types of millet crops viz., Mandia or ragi, Sorghum, and gangei were cultivated in 2019-20 in an area of 30 ac with a production of 26.5 Qtls such that the average production was 0.9QTLs/ac and the average production per millet cultivating HH was 0.9 Qtls/HH.

6.3.   Out of the total 30 ac area of millets mandia, sorghum, and gangei were cultivated in 27.4ac, 0.6ac, and 2ac with a production of 25.1 Qtls, 0.2 Qtls, and 1.2 Qtls respectively. The yield of mandia was 0.9 QTLs/ac with an average of 1 Qtls/HH. Likewise, the average production per acre and average production per millet cultivating HHs for sorghum and gangei were 0.3 Qtls/ac, 0.2 Qtls/HH, and 0.6 Qtls/ac, 0.6 Qtls/HH respectively.

6.4   It was evident that broadcasting and line sowing/line transplantation practices were adopted by the HHs for the cultivation of millets in the base year.

6.5   Millets were consumed more in the summer season, less during the rainy season. Different millet recipes were consumed more in breakfast and evening snacks.

6.6   The history of millet consumption is missing and the current consumption pattern is only because of the PDS scheme and not the actual production in the area.

6.7   In the case of processing of millets, it was evident from the survey that all the HHs had processed millets using machines, manually and both. The HHs who had processed the millets using machines used others' pulverisers and grinders for the processing of millets. Almost all the HHs (13 out of 14) had sold their millets in the markets except 1 HH, who had sold it to the neighbour only.

ANNEXURE I

HOUSEHOLD SCHEDULE
ON

SPECIAL PROGRAMME FOR PROMOTION OF MILLETS IN TRIBAL AREAS OF ODISHA

Nabakrushna Choudhury Centre for Development Studies, Odisha, Bhubaneswar-751013

1. Identification of the HHs

    a.   Name of the (i) Village   _____

                      (ii)Gram Panchayat: _____

                      (iii) Block: _____

                      (iv) District: _____

    b.   Category   i) SC   ii) ST   iii) OBC iv) SEBC   v) Others (Specify)

    c.   Sub-caste/ Sub-tribe: _____

    d.   Religion   i) Hindu   ii) Muslim   iii) Christian   iv) Animism v) Others

    e.   Category of HH: BPL/APL

    f.   House structure: Pucca/Kutcha/Semi-Pucca

2. Are you indebted?   Yes/ No. If yes, what is the amount: Rs._____

3. Land Details (last year, Acre) i) Owned_____, ii) leased in _____

                      iii) Leased out _____iv) Encrosed_____

                      v) FRA _____v) Other_____

                      vi)Cultivable Land _____

4. Total irrigated land owned (last year, Acre): _____

5. Cropping systems i) Mono   ii) Mixed [specify the crop(s)] _____

                  iii) Inter cropping [specify the crop(s)]_____

6. Seed (last year)   i) Quantity of seed used (in kg):_____

                      ii) Is it the quantity adequate?   (Yes/No)

                      iii) Seed Treatment   (Yes/No)

                      iv) Seed quality: Good/Average/Bad

7. Package of practices for millets (Last Year, put tick mark)

     i)Germination test: Yes/No

     ii)Weeding: Weeder/Manual/Both

     iii)Number of weeding: 1/2/3/4

     iv)Application of Fertiliser: Organic/ chemical/Both

     v)Application of Pestisides: Organic/chemical/Both

8. Production and Utilization of Millets (2019-20)

Type of Millet	Total Production (QTL.)	Family consumption (QTL)	Kept for Seed (QTL)	Marketed (QTL)	Selling Price (Rs/QTL)
Mandia					
Suan					
Kangu					
Gurji					
Any other (Specify)					

9. Season-wiseAverage Requirment/Consumption (in kg)

Season	Summer	Winter	Rainy
Requirement			
Consumption			

10. Time of consumption: Breakfast/Lunch/Evening snacks/Dinner

11. Whether Purchased: Yes/No

12. Whether received from friends/relatives: Yes/No

13. Processing millets: Manually/ Machine/ Both

14. If by machine, is it your own machine: Yes/No

15. Food items prepared: i) Jau ii) Tampo iii) Pitha iv) Mandis Torani v) Handia v) Others

16. Sale of millets/Distance: a) Mill _____ b) Middle-man/Local trader_____

                          d) Market_____ e) Money lender_____

                          f) Any Other (Specify) _____

17: Household Particulars

Sl. No.	Name starts with Respondent of the HH	Relationship with HH (Use Code)	Marital Status	Sex M-1 F-2	Age	Education (Use Code)	Occupation/Income (Use Code)			Millet Based Activities (Use Code)
							Main	Subsidiary	Avg. annual income	

Note: **Relationship:** 1-Self, 2-Spouse, 3-Son, 4-Daughter, 5- Daughter-in-law, 6-Son-in-law, 7-Father, 8-Mother, 9-brother, 10-Sister, 11-Grand-son, 12- Grand-daughter, 13-Father-in-law, 14-Mother-in-law, 15-(Specify)

Marital Status: 1- Married, 2- Unmarried, 3- Widow, 4- Widower, 5- Divorced, 6-Separated, 7-(Specify)

Education: 1-Illiterate, 2-Just literate, 3-Upto Class 5, 4-Class 6-10, 5-Higher Secondary, 6-Graduate, 7- Post Graduate, 8- Technical(Diploma), 9- Technical(Degree), 10-Professional/Management, 11-Other (Specify)

Occupation: 1- Agriculture, 2- Daily labour/ Wage labour, 3- Business/ Entrepreneurship, 4-Government Servant, 5- Private service, 6-Migrants,7- Artisans, 8-Service Provider,9- MFP collection, 10-Student, 11-Housewife, 12-Other (Specify)

Millet Based Activities: 1=Production, 2=Consumption, 3= Processing, 4= Marketing

18: Crop-wise and Method-wise Details of Production (Last Year i.e. June 2019-May 2020):

(Area in Acre, Production in Quintal)

Sl.No	Name of the Crop	SMI		Line Transplanting (LT)		Line Sowing (LS)		Broadcasting		Any other (Specify)	
Kharif		A	P	A	P	A	P	A	P	A	P
1	Mandia										
2	Suan										
3	Kangu										
4	Koda										
5	Gurji										
6	Jawar										
7	Bajra										
8	Any other (Specify)										
9	Any other (Specify)										
Rabi	Mandia										

Note: A stands for Area and P stands for Production(Use additional sheets for Rabi)

19: Expenditure pattern

Sl.No	Sources	Annual Expenditure (In Rs)
1	Food	
2	Clothes	
3	Education	
4	Medicine	
5	Social Function	
6	Marriage & Ceremony	
7	Agriculture	
8	Construction	
9	Durable Assets	
10	Others	

20: Sources of Income

Sl.No	Sources	Annual Income (In Rs.)
1	Agriculture	
2	Millets	
3	Horticulture	
4	Forest	
5	Ag.Labour	
6	Salary	
7	Pension	
8	Remittance	
9	Livestock	
10	Others (Specify)	

Remarks:

Signature of the investigator

HOUSEHOLD SCHEDULE
ON
SPECIAL PROGRAMME FOR PROMOTION OF MILLETS IN TRIBAL AREAS OF ODISHA
Nabakrushna Choudhury Centre for Development Studies, Odisha, Bhubaneswar-751013

1. Identification of the HHs
    a.   Name of the (i) Village   _____

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    b.   Category   i) SC   ii) ST   iii) OBC iv) SEBC   v) Others (Specify)

    c.   Sub-caste/ Sub-tribe: _____

    d.   Religion   i) Hindu   ii) Muslim   iii) Christian   iv) Animism v) Others

    e.   Category of HH: BPL/APL

    f.   House structure: Pucca/Kutcha/Semi-Pucca

2. Are you indebted?   Yes/ No. If yes, what is the amount: Rs. _____

3. Land Details (last year, Acre) i) Owned_____, ii) leased in _____

                 iii) Leased out _____ iv) Encrosed_____

                 v) FRA _____v) Other_____

                 vi)Cultivable Land _____

4. Total irrigated land owned (last year, Acre): _____

5. Cropping systems i) Mono   ii) Mixed [specify the crop(s)] _____

                 iii) Inter cropping [specify the crop(s)]_____

6. Seed (last year)   i) Quantity of seed used (in kg): _____

                 ii) Is it the quantity adequate?   (Yes/No)

                 iii) Seed Treatment   (Yes/No)

                 iv) Seed quality: Good/Average/Bad

7. Package of practices for millets (Last Year, put tick mark)

      i)Germination test: Yes/No

      ii)Weeding: Weeder/Manual/Both

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Suan					
Kangu					
Gurji					
Any other (Specify)					

9. Season-wiseAverage Requirment/Consumption (in kg)

Season	Summer	Winter	Rainy
Requirement			
Consumption			

10. Time of consumption: Breakfast/Lunch/Evening snacks/Dinner

11. Whether Purchased: Yes/No

12. Whether received from friends/relatives: Yes/No

13. Processing millets: Manually/ Machine/ Both

14. If by machine, is it your own machine: Yes/No

15. Food items prepared: i) Jau ii) Tampo iii) Pitha iv) Mandis Torani v) Handia v) Others

16. Sale of millets/Distance: a) Mill _____ b) Middle-man/Local trader_____

                             d) Market_____ e) Money lender_____

                             f) Any Other (Specify) _____

17: Household Particulars

Sl. No.	Name starts with Respondent of the HH	Relationship with HH (Use Code)	Marital Status	Sex M-1 F-2	Age	Education (Use Code)	Occupation/Income (Use Code)			Millet Based Activities (Use Code)
							Main	Subsidiary	Avg. annual income	

Note: **Relationship:** 1-Self, 2-Spouse, 3-Son, 4-Daughter, 5- Daughter-in-law, 6-Son-in-law, 7-Father, 8-Mother, 9-brother, 10-Sister, 11-Grand-son, 12- Grand-daughter, 13-Father-in-law, 14-Mother-in-law, 15-(Specify)

Marital Status: 1- Married, 2- Unmarried, 3- Widow, 4- Widower, 5- Divorced, 6-Separated, 7-(Specify)

Education: 1-Illiterate, 2-Just literate, 3-Upto Class 5, 4-Class 6-10, 5-Higher Secondary, 6-Graduate, 7- Post Graduate, 8- Technical (Diploma), 9- Technical (Degree), 10-Professional/Management, 11-Other (Specify)

Occupation: 1- Agriculture, 2- Daily labour/ Wage labour, 3- Business/ Entrepreneurship, 4-Government Servant, 5- Private service, 6-Migrants,7- Artisans, 8-Service Provider,9- MFP collection, 10-Student, 11-Housewife, 12-Other (Specify)

Millet Based Activities: 1=Production, 2=Consumption, 3= Processing, 4= Marketing

18: Crop-wise and Method-wise Details of Production (Last Year i.e. June 2019-May 2020):

(Area in Acre, Production in Quintal)

Sl.No	Name of the Crop	SMI		Line Transplanting		Line Sowing		Broadcasting		Any other (Specify)	
Kharif		A	P	A	P	A	P	A	P	A	P
1	Mandia										
2	Suan										
3	Kangu										
4	Koda										
5	Gurji										
6	Jawar										
7	Bajra										
8	Any other										
9	Any other										
Rabi	Mandia										

Note: A stands for Area and P stands for Production (Use additional sheets for Rabi)

19: Expenditure pattern

Sl.No	Sources	Annual Expenditure (In Rs)
1	Food	
2	Clothes	
3	Education	
4	Medicine	
5	Social Function	

6	Marriage & Ceremony	
7	Agriculture	
8	Construction	
9	Durable Assets	
10	Others	

20: Sources of Income

Sl.No	Sources	Annual Income (In Rs.)
1	Agriculture	
2	Millets	
3	Horticulture	
4	Forest	
5	Ag.Labour	
6	Salary	
7	Pension	
8	Remittance	
9	Livestock	
10	Others (Specify)	

Remarks:

Signature of the investigator