BASELINE SURVEY: PHASE VI

KANDHAMAL DISTRICT

Special Program for Promotion of Millets in Odisha
(Shree Anna Abhiyan)

Submitted to
Directorate of Agriculture and Food Production
Government of Odisha
2025

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Nabakrushna Choudhury Centre for Development Studies
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STUDY TEAM

Dr. Sandhya R. Mahapatro
Project Director, SAA

Dr. Biswabas Patra
Associate Project Director, SAA

Dr. Doleswar Bhoi
Research Associate

Mr. Ankit Moharana
Research Assistant

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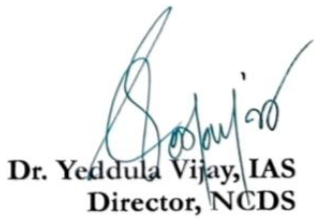
FOREWORD

It is with great pleasure that I extend my warmest greetings to you through this foreword letter, reflecting on the remarkable journey of the "Special Programme for Promotion of Millets in Odisha," fondly referred to as the Shree Anna Abhiyan or SAA. The roots of the SAA delve deep into a significant consultation meeting convened on 27th January 2016 at the Nabakrushna Choudhury Centre for Development Studies (NCDS). Chaired by Mr. R. Balakrishnan, the then Development Commissioner-cum-Additional Chief Secretary (DC-cum-ACS) of the Government of Odisha and Chairperson, NCDS, this gathering brought together a diverse array of stakeholders. Representatives from various line departments of the Government of Odisha, esteemed members of civil society groups from across the nation and within the state, including notable organizations like the Alliance for Sustainable and Holistic Agriculture (ASHA), the Millets Network of India (MINI), and the Revitalizing Rain-fed Agriculture (RRA) Network of India, graced the occasion. Distinguished figures from academia, such as Dr. T. Prakash, the then Chairperson of the Karnataka Agricultural Price Commission, lent their expertise to the discourse.

NCDS took the initiative to submit a proposal to the Government of Odisha, emphasizing the imperative to revive millet production in the State. The resounding impact of this proposal was swiftly acknowledged, evident in the budget speech delivered on 18th March 2016 by the Government of Odisha, which articulated their commitment to reviving millets. This pivotal moment marked the inception of a journey marked by collaboration, dedication, and transformative action. Subsequently, a memorandum of understanding (MoU) was signed on 27th February 2017, bringing together key stakeholders including the Directorate of Agriculture and Food Production (DAFP), NCDS, and the Watershed Support Services and Activities Network (WASSAN). This MoU delineated the framework for concerted efforts towards implementing the SAA, with NCDS assuming the pivotal role of anchoring the research secretariat. NCDS embarked on a comprehensive survey initiative encompassing baseline, midterm, and end-line assessments in the target blocks of the SAA, especially the Baseline Study 2022. These surveys, designed to evaluate the status of millet production, marketing, consumption, and processing, represent a critical step towards informed intervention and strategic decision-making.

As the Director of NCDS, I extend my heartfelt appreciation to all the members of our dedicated team for their unwavering commitment and tireless efforts in realizing the objectives of the SAA. Your diligence and perseverance have been instrumental in bringing our collective vision to fruition. I extend my deepest gratitude to all our partners, stakeholders, and collaborators for their invaluable support and steadfast dedication to the cause of promoting millets in Odisha, especially completion of the Baseline Survey, 2022. Together, let us continue to forge ahead, leaving an indelible mark on the landscape of sustainable agriculture and rural development.



Dr. Yeddula Vijay, IAS
Director, NCDS

ACKNOWLEDGEMENT

It gives me immense pleasure to extend my heartfelt gratitude to all those who contributed to the successful completion of the “Baseline Survey Report of Phase VI, 2022”. This endeavour was truly a collaborative effort, and I am deeply grateful for the unwavering support and dedication demonstrated by each individual and organization involved. First and foremost, I would like to express my sincere appreciation to the research team of Nabakrushna Choudhury Centre for Development Studies (NCDS), Bhubaneswar, for spearheading the preparation of this report. Your commitments to excellence and tireless efforts have been instrumental in ensuring the quality and accuracy of the findings presented.

I extend my heartfelt thanks to the related government departments, organizations, and stakeholders, including farmers' associations, whose invaluable support and cooperation played a pivotal role in the successful completion of this study. Special mention goes to Dr.Arabinda Kumar Padhee, Principal Secretary to the Government, Department of Agriculture & Farmers' Empowerment (DA&FE), Mr. Prem Chandra Chaudhary, Director of Agriculture DA&FE, and the Joint Director of Agriculture for their invaluable contributions.

I would like to extend my sincere appreciation to our esteemed Director, Dr.Yeddula Vijay IAS, the Director of Nabakrushna Choudhury Centre for Development Studies (NCDS). Your guidance, wisdom, and valuable suggestions have been invaluable in shaping the direction of this study. Many thanks to NCDS administration for their continuous support for smooth functioning of the research work. I want to acknowledge the contributions of Research team (Research Associates, Project Associates, Research Assistants) for their valuable insights and assistance.

I would also like to express my appreciation to the members of the Programme Secretariat (Watershed Support Services and Activities Network, WASSAN), particularly Mr. Dinesh Balam, Programme Secretariat, and the facilitating agencies and staff of the concerned areas under study for their support and cooperation. I am particularly grateful to Mr. Sushil Kumar Senapati, Ms. Kalpana Pradhan and Mr. Bikash Pradhan, along with the dedicated staffs of the State Project Monitoring Unit (SPMU), for their unwavering support and assistance throughout the duration of this project.

My sincere gratitude goes out to the Chief District Agricultural Officer (CDAO) of Kandhamal district, the Scheme Officer, District Programme Coordinator, Block Coordinators, and other block-level officials for their invaluable support in providing crucial information for completion of the Baseline Study, Phase VI 2022.Once again, thank you all for your invaluable contributions, dedication, and support. It has been a privilege to work alongside each of you, and I look forward to continued collaboration in our future endeavours. I extend my best wishes for the success of the publication.

Dr. Sandhya R.Mahapatro
Project Director

EXECUTIVE SUMMARY

Kandhamal district is one of the 17 districts where the "Special Programme for the Promotion of Millets in Odisha or (hereafter) Shree Anna Abhiyan (SAA)" Phase VI has begun in the Kharif 2021 in its four blocks, namely, Tikabali, Khajuripada, G. Udayagiri, and Chakapada. Baseline Survey, 2022, is conducted in Kandhamal district, collected data from 320 sample households and it is found that 70.31 per cent belonged to Scheduled Tribe (ST), while only 18.13 per cent belonged to Scheduled Caste (SC). Other Backward Class (OBC)/ Socially and Educationally Backward Class (SEBC) accounted for 11.56 per cent of the households.

Out of the total sample population of 1216, around 51.55 per cent are male and 48.45 per cent are female, and out of the total 99.06 per cent is Hindu, while only 0.94 per cent is Christian community and as much as 98.44 per cent possess Ration Cards. Significant portion of the population (40.80 per cent) are farmers, followed by students at 5.64 per cent, the share of wage labourers is 5.41 per cent, Government employees represent 1.08 per cent and private employees 25.81 per cent and Housewives comprise 6.80 per cent. About 4.40 per cent of the sample population are found to be unemployed. Out of the total sample HHs, 113 (35.31 per cent) have *Semi- Pucca* houses, 157 households (49.06 per cent) have *Kutcha* houses, and only 50 households (15.63 per cent) have *Pucca* houses.

As observed in the Baseline Study, all the 320 sample households have cultivated millets in the year 2021 covering a total area of 82.7 acres and the average yield 1.68 quintals per acre and total production of 138.88 quintals. It is also found that all millets cultivating households use their own seeds. Out of total sample household, 80.39 per cent of HH used their own seed, 0.98 per cent from relatives. 3.92 per cent from NGO and 13.73 per cent from govt. seed. The most common method of millets cultivation among the sample households is Line Sowing 78.43 per cent, broadcasting method used by 4.90 per cent, and the Line Transplantation (LT) by only 16.67 per cent.

The annual average consumption of millets per household is 15.05kg. Highest proportion of households around 95.45% consumed it in breakfast, 81.06 per cent of them consumed it in lunch, followed by 71.97% of them consuming it in dinner and 38.64% in evening snacks. In Kandhamal district, 33.61 per cent consume *Tampo/Pitha*, 34.74 per cent consume *Jau/Torani,* 22.78 per cent of consume *Khiri,* 2.39 per cent consume cake/biscuit, 1.91 per cent consume in the form of sweet items.

As observed, majority of the sample households 69.66 per cent process millets through traditionally (manually) ,while 20.22 per cent of households process their millets using machines and about 10.11 per cent of households use both the methods. Out of the total millets producing houeholds, only 14 households sell their millets which constitute 13.72 per cent. Most of the households sell their millets to middlemen and in daily market/hat.

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ABBREVIATIONS

AAO	: Assistant Agriculture Officer
AL	: Agricultural Labour
ATMA	: Agricultural Technology Management Agency
AWC	: Anganwadi Centre
BC	: Before Christ
CCD	: Centre for Community Development
DCACS	: Development Commissioner cum Additional Chief Secretary
DAFE	: Department of Agriculture and Farmers Empowerment
DAFP	: Directorate of Agriculture and Food Production
FGD	: Focused Group Discussion
Ha	: Hectares
HHs	: Households
IAS	: Indian Administrative Service
ICDS	: Integrated Child Development Scheme
JDA	: Joint Director of Agriculture
KG	: Kilogram
KM	: Kilometer
LT/LS	: Line Showing/Line Transplantation
MDM	: Mid-day Meal
MFP	: Minor Forest Produce
MGNREGA	: Mahatma Gandhi National Rural Employment Guarantee Act
NCDS	: Nabakrushna Choudhury Centre for Development Studies
OFS	: Odisha Finance Services
OBC	: Other Backward Classes
OSG	: Other Social Groups
SAA	: Shree Anna Abhiyan
PDS	: Public Distribution System
SC	: Scheduled Caste
SEBC	: Socially and Educationally Backward Class
SMI	: System of Millet Intensification
ST	: Scheduled Tribe
WASSAN	: Watershed Support Service and Activities Network

CHAPTER I

INTRODUCTION

1.1 Background

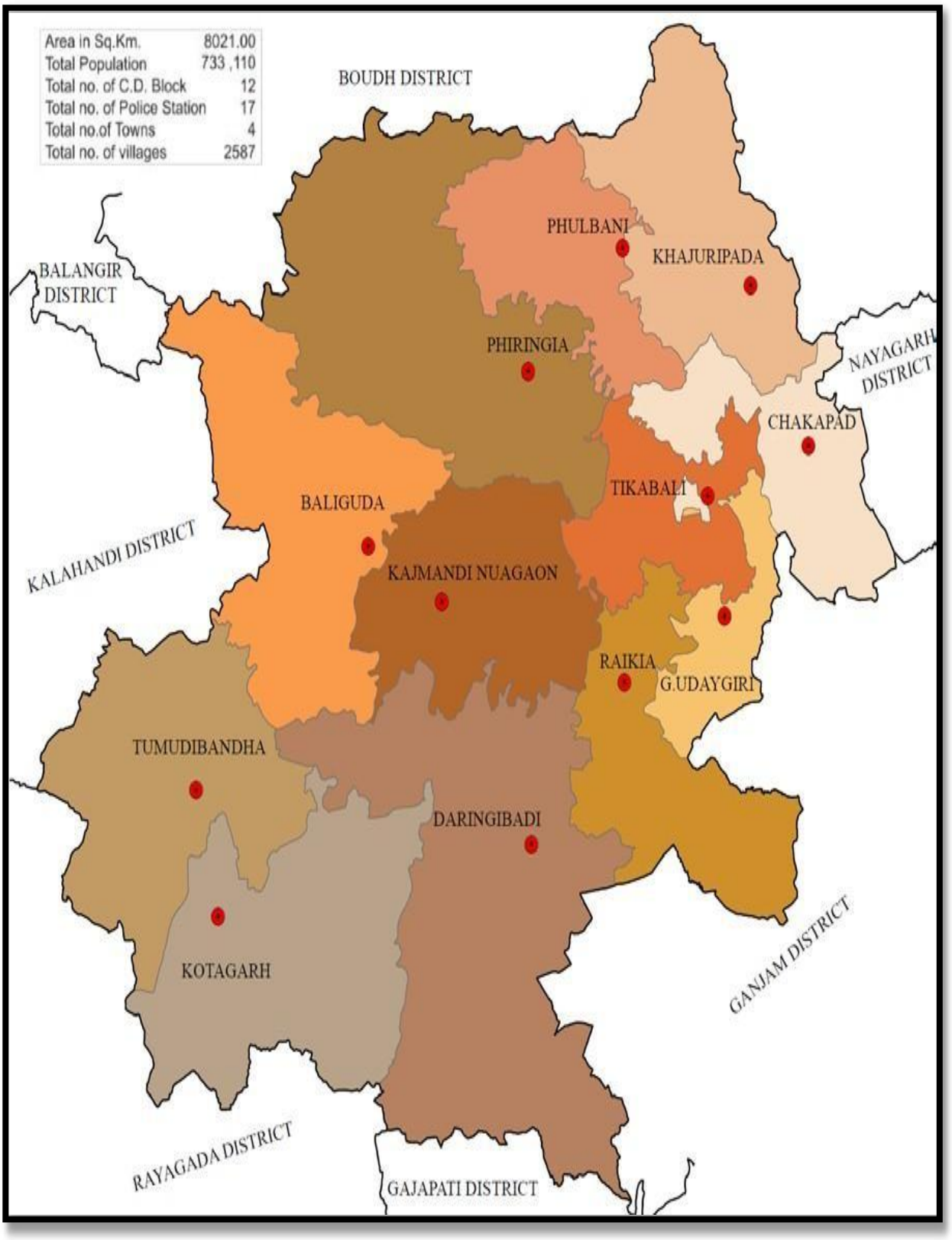
Millets are found to be the most ancient food grains that have been growing in Asian countries since 2700 BC (Gupta, Srivastava, and Pandey, 2012). The rapidly changing climatic condition is forcing the developing countries in general and India in particular to adopt millet cultivation and consumption due to the expansion of dry land (Haung*et al*., 2016; 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).

At this outset, keeping the nutrition value and climate susceptible quality of millets in mind, the Special Programme for Promotion of Millets in Tribal Areas of Odisha (here after Odisha Millets Mission, OMM) with a novel organizational structure[1] was initiated by the Government of Odisha in 2017-18 emphasizing production, consumption, processing, and marketing of millets. In 2021, the program was introduced in 58 blocks of 17 districts. At the time of implementation of OMM, some of the millets cultivated in Odisha are *Mandia/Ragi*(finger millet), *Suan/ Gurji* (little millet), *Janha/Jowars*(sorghum), *Kangu*(foxtailmillet), and *Kodo*(Kodo millet). Kandhamal districtis one of them. This baseline study attempts to provide necessary information on the above-mentioned dimensions of the programme in Kandhamal district. Thus, the profile of the Kandhamal district is provided below.

1.2 District Profile

Kandhamal revenue district came into existence on January 1, 1994 after Phulbani district was divided into Kandhamal and Boudh district of Odisha. The district lies between 19degrees 34'' to20degrees 36" NorthLatitudeand83degrees34" to84degrees East longitude. The climatic condition of Kandhamal is hot and dry climate in summer and dry and cold in winter. The Kandhamal district is spread in a geographical area of 7654 sq.km and it is surrounded by Boudh district in the North, Rayagada district in the South, Ganjam and Nayagarh district in the East and Kalahandi district in the West. Paddy and maize are two important crops that have been cultivated during Kharif. Further, in the irrigated areas crops like potato, vegetable and mustard are cultivated.

Fig 1.1 Kandhamal District with Blocks



Source:http://gisodisha.nic.in/Block/Kandhamal.pd

1.3 Objectives

The objectives of the baseline survey were to obtain information of millets before the intervention of Odisha Millet Mission (OMM). Along with this, the study tried to collect some background information of the surveyed HHs before the intervention of the programme. The objectives of the study are:

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

1.4 Methodology

1.4.1 Sample Design

The SAA programme has been implemented in phased manner. It started with 7 districts of the state in Phase I during 2017-18 however, later it has expanded to all 30 districts in different phases. Under Phase VI of the implementation of the programme, the Government of Odisha's Department of Agriculture and Farmers Empowerment introduced the "Special Programme for Promotion of Millets in Odisha" included an additional 58 blocks across 17 districts of the state including four blocks of Kandhamal district, namely, Tikabali, Khajuripada, G. Udayagiri, and Chakapada.

For conducting the Baseline Survey, 2022, Phase VI, multi-stage sampling method has been followed. In the first stage, four blocks, namely, Tikabali, Khajuripada, G. Udayagiri, and Chakapada have been purposively selected for the study as SAA is going to implemented in these four blocks in Phase VI. In the second stage, two GPs of each block have been selected for the study in consultation with the respective facilitating agencies (FAs) and district level officials of the agriculture department. Brahmanpada and Kakharujhola GP from Chakada block, Grasingia and Raikola GP from G.Udayagiri block, Dulapada and R. Nuagaon GP from Khajuripada block and Kaijhar and Kotima GP form Tikabali block have been selected for the study.

In the third stage, two villages from each GP have been randomly selected for the study and in the final stage 20 households from each village have been randomly selected for the study. Therefore, as a total of 320 households from 16 villages, eight GPs and four blocks has been selected for this present study, as presented in the Table 1.2.

Table 1.1: Socio-economic & Demographic Features of Kandhamal District	
Indicators Census2011	**Value**
Population (In Lakh)	7.3
Male (In Lakh)	3.6
Female (In Lakh)	3.7
Scheduled Caste (In Lakh)	1.2
Scheduled Tribe (In Lakh)	3.9
No. of HHs (In Lakh)	1.7
Average HH Size	4.3
Sex Ratio	1037
Total Worker (In Lakh)	3.6
Main Worker (In Lakh)	1.7
Marginal Worker (In Lakh)	1.9
Non-Worker (In Lakh)	3.8
Work Participation Rate (WPR)	48.5
Literacy rate (%)	64.1
Land Use Pattern (Area in '000 ha),2014-15*	
Forest	170
Land put to Non-agricultural use	21
Barren and Non-Cultivable Land	103
Permanent Pasture	13
Net Area Sown	57
Cultivable Waste Land	19
Other Fallow	28
Current Fallows	28
Misc. Trees and Groves	1
District at a Glance 2016*	
Average Fertilizer Consumption (Kg/ha)	8.3
Irrigation Potential (000ha)	101.2
No of Villages electrified (in No)	1044
No. of banks (in No.)	9
No. of AWCs (in No.)	2243
No. of BPL families (in No.)	154217
No. of Job cards issued (in No.)	142830
No. of beneficiaries employed MGNREGA (in No.)	130020

Source: District Statistical Handbook-Kandhamal,2011
****District at a Glance2016***

Table 1.2: Sample Households in Kandhamal District			
Blocks	**Programme Households No**	**Sample Households**	**% HHs Covered under the Survey**
Chakapada	544	80	14.71
G. Udayagiri	422	80	18.96
Khajuripada	418	80	19.14
Tikabali	342	80	23.39
Total	1726	320	18.54

Source: Facilitating Agency and Field Survey 2022

1.4.2 Data Collection

A total of sixteen villages were selected from four blocks, where two Gram Panchayats across four blocks were selected for data collection in the Kandhamal district for the Baseline Survey, 2022, Phase VI. These villages were selected using the simple random sampling method based on the list provided by the implementing agency about the prospective villages to be included under Phase VI across the four blocks of the district. Eight Gram Panchayats were randomly selected from each block, and two villages were selected from each of these Panchayats.

This comprehensive baseline survey report is based on both secondary and primary data. Primary data was collected by using a structured household interview schedule (Annexure II) and Focus Group Discussions (Annexure III) from the concerned villages of the districts. Additionally, secondary data on geographical information, population, agriculture, education, irrigation, forest, and institutions were collected from various published and unpublished sources, including the 2011 Census reports, Odisha Agricultural Statistics, and so on.

To supplement and complement the findings of the Baseline Survey, Focus Group Discussions were conducted in each sample village. The FGDs comprise of key respondents from the villages, including community leaders, village officials and other stakeholders to gather more information and insights about the villages, especially, the status, problems and opportunities of millets cultivation. This qualitative data helped in providing a more holistic understanding of the local context, which was further used to triangulate and validate the findings of the quantitative data collected through the survey.

The Baseline Survey aimed to collect data on various socio-economic indicators such as household demographics, income, livelihoods, education, health, and access to basic amenities like water and sanitation facilities. The findings of the survey and FGDs were analysed using appropriate statistical tools and techniques to generate a comprehensive report. The report provides an in-depth analysis of the current situation in the selected villages and serves as a reference point to measure the progress made during the implementation of various development interventions in the future. It also highlights the gaps and challenges in the existing systems and infrastructure. It provides recommendations for improving the overall development indicators of the region.

1.5 Limitations of the Study

The present Baseline Survey focuses solely on four Blocks of the Kandhamal District. However, due to the onset of the harvesting season, coupled with both in and out-migration, some household heads and female respondents were found to be absent during the data collection process. Despite these challenges, it is important to acknowledge the limitations of the present study.

Firstly, due to logistical reasons and other difficulties, such as the non-availability of respondents, the study was limited to a random sample of 320 households. Secondly, there is the possibility of recall error, especially in cases involving the actual quantity of consumption and marketing, among others. Lastly, in some instances, sample households, particularly non-participant farmer households, consumed millets without producing them. This was made possible by past stock and acquiring of millets through exchange and barter. Unfortunately, these details were not captured during the survey.

It is essential to consider these limitations while interpreting the findings of the survey. Future studies can address these gaps and improve the accuracy of the data collection process. Despite these limitations, the present survey provides valuable insights into the socio-economic conditions of the selected households and serves as a baseline to measure the progress made in the future.

1.6 Chapter

The “Baseline Survey Report 2022, Phase VI” has been divided into six chapters, including the current Introduction Chapter I, which provided a District Profile, Objectives, Methodology and Limitations. Chapter II provides the Socio-economic Profile of Sample Households. Chapter III provides details on the Production and Productivity of Millets. Chapter IV discusses the Consumption Pattern of Millets. Chapter V elucidates the Processing and Marketing of Millets.

CHAPTER II

SOCIO-ECONOMIC PROFILE

2.1 Introduction

This Chapter provides a broad overview of the social, economic, and demographic profiles of surveyed households based on their distribution by a social group, religion and gender. Besides, it provides the distribution by poverty status (proportion below the poverty line and proportion above), by economic activities (not mutually exclusive, as a HH can have multiple economic activities), and by house structure.

2.2 Social and Demographic Profile

The distribution of surveyed HHs by social groups indicates that 225 HHs (70.31%) belong to Scheduled Tribes (STs) category, 58 HHs (18.13%) belong to Schedule Caste (SCs) category, and 37HHs (11.56%) belong to Other Backwards Castes (OBC), Table 2.1. In blocks, the proportion of ST was the highest in the Chakapada and G. Udayagiri block followed by Khajuripada and Tikabali.

Table- 2.1: Distribution of Households by Social Group

Social Group	Chakapada		G. Udayagiri		Khajuripada		Tikabali		Total	
	No	%	No	%	No	%	No	%	No	%
Scheduled Tribe	70	87.5	70	87.5	43	53.75	42	52.5	225	70.31
Scheduled Caste	9	11.25	8	10	36	45	5	6.25	58	18.13
OBC/SEBC	1	1.25	2	2.5	1	1.25	33	41.25	37	11.56
Total	80	100	80	100	80	100	80	100	320	100

Source: Baseline Survey, 2022

2.3 Religious Distribution

The surveyed HHs belongs to two religious communities such as Hindu 317 HHs (99.06%), and Christian- 3 HHs (0.94%), All three blocks have 100 % Hindu HHS only in G Udayagiri block 3 Christian HHs Was there.

2.4 Distribution of Population by Sex

The total population of the surveyed HHs was 1216 (Table 2.2). The gender-wise distribution populations of surveyed HHs shows that, out of total 1216 population, 667 were male and 627 were female which shows the %age of male is higher than female in total population of the surveyed HHs.

Table 2.2 Distribution of Population in Sample HHs by their Sex										
Gender	Chakapada		G. Udayagiri		Khajuripada		Tikabali		Total	
	No	%	No	%	No	%	No	%	No	%
Male	166	52.53	171	49.14	154	50.83	176	53.83	667	51.55
Female	150	47.47	177	50.86	149	49.17	151	46.17	627	48.45
Total	316	100	348	100	303	100	327	100	1294	100

Source: Baseline Survey, 2022

2.5 Possession of Ration Card

The data on ration card holding status, which reflects the incidence of poverty among 320 surveyed households across Chakapada, G. Udayagiri, Khajuriapada, and Tikabali, shows that the vast majority of households (98.44%) possess ration cards. Only 5 households (1.56%) across all blocks do not have ration cards. In Chakapada, G. Udayagiri, and Khajuriapada, just 1 household each lacks a ration card, accounting for 1.25% in each block. Tikabali has slightly more households without ration cards—2 out of 80—making up 2.5%.

Table 2.3: Distribution of HHs by their Possession of Ration Card										
Blocks	Chakapada		G. Udayagiri		Khajuripada		Tikabali		Total	
	No	%	No	%	No	%	No	%	No	%
Ration Card	79	98.75	79	98.75	79	98.75	78	97.5	315	98.44
No Ration Card	1	1.25	1	1.25	1	1.25	2	2.5	5	1.56
Total	80	100	80	100	80	100	80	100	320	100

Source: Baseline Survey, 2022

2.6 Population Distribution by Age Groups

The population distribution across different age groups in the surveyed areas of Chakapada, G. Udayagiri, Khajuriapada, and Tikabali shows that the largest portion of people (40.8%) falls within the adult age group of 19–44 years, which is the most economically active segment. The second-largest group is middle-aged individuals (45–59 years), making up 17.39% of the total population. Adolescents (13–18 years) form 13.21%, while children aged 6–12 years account for 12.29%, indicating a considerable young population. The elderly population (60 years and above) represents 11.28% of the total, showing the presence of a moderate ageing group. Preschool-aged children (3–5 years) account for 3.25%, and infants (0–2 years) make up the smallest portion at 1.78%. Chakapada and Khajuriapada have a higher share of elderly people compared to the other blocks. Tikabali has the highest %age of adolescents, while G. Udayagiri has the most adults. This distribution highlights a strong working-age population base, with a fair proportion of children and elderly, which suggests a need for focused services in education, employment, and elderly care across the blocks. (Table 2.4)

Table 2.4: Distribution of Population by their Age Groups										
Age groups	**Blocks**									
	Chakapada		**G. Udayagiri**		**Khajuriapada**		**Tikabali**		**Total**	
	No	%	No	%	No	%	No	%	No	%
Infant (0-2 year)	11	3.5	5	1.4	5	1.7	2	0.6	23	1.8
Preschool (3-5 year)	9	2.8	17	4.9	6	2.0	10	3.1	42	3.2
Children (6-12 year)	41	13.0	45	12.9	36	11.9	37	11.3	159	12.3
Adolescent (13-18 year)	39	12.3	39	11.2	42	13.9	51	15.6	171	13.2
Adults (19-44 year)	125	39.6	147	42.2	124	40.9	132	40.4	528	40.8
Middle Age (45-59 Years)	50	15.8	55	15.8	65	21.5	55	16.8	225	17.4
Old (60 and above)	41	13.0	40	11.5	25	8.3	40	12.2	146	11.3
Total	316	100	348	100	303	100	327	100	1294	100

Source: Baseline Survey, 2022

2.7 Education Status

The data reveals significant insights into the educational attainment levels across the blocks of Chakapada, G. Udayagiri, Khajuriapada, and Tikabali, covering a total of 1,229 individuals.

Illiteracy remains a challenge, accounting for 26.2% of the total population. Chakapada and Tikabali report the highest proportion of illiterates at 29.1% and 27.9%, respectively, suggesting a need for stronger foundational education interventions in these blocks. A marginal 3.5% of the population has studied only up to Class 5, with uniform distribution across all blocks, showing minimal early dropouts after primary schooling. Those educated from Class 6 to 10 make up 15.1% of the population. G. Udayagiri leads in this category with 20.2%, indicating relatively better school retention up to the secondary level. The Higher Secondary level (Class 11-12) shows the highest representation, comprising 27.3% of the population. G. Udayagiri (31%) and Tikabali (31.1%) have notably higher shares in this category, reflecting growing access and continuation into senior secondary education. Graduation level education is achieved by 13.4% of the population, with Khajuriapada (17.8%) and Tikabali (14.9%) performing well in this regard, possibly due to proximity to colleges or a cultural emphasis on higher education. Post-graduate qualifications are observed in only 3.3% of the population, with little variance across blocks, indicating a plateau in access or aspiration for advanced studies. Technical and Professional education together account for a small share (3.2% combined), showing limited vocational or specialized training among the surveyed population. These categories may benefit from targeted skilling and technical education initiatives.The "Others" category, including informal or non-standard education types, contributes

8.0%, with Chakapada (11.8%) having the highest share. This could include religious education, alternative schooling, or adult literacy efforts. (Table 2.5)

Table 2.5: Distribution of Population by their Education

	Blocks									
	Chakapada		G. udayagiri		Khajuriapada		Tikabali		Total	
	No	%	No	%	No	%	No	%	No	%
Illiterate	86	29.1	71	21.8	77	26.4	88	27.9	322	26.2
Up To Class 5	12	4.1	8	2.5	11	3.8	12	3.8	43	3.5
Class 6-10	42	14.2	66	20.2	46	15.8	32	10.2	186	15.1
Higher Secondary	74	25.0	101	31.0	63	21.6	98	31.1	336	27.3
Graduation	28	9.5	38	11.7	52	17.8	47	14.9	165	13.4
Post-Graduate	10	3.4	12	3.7	10	3.4	8	2.5	40	3.3
Technical	6	2.0	7	2.1	3	1.0	6	1.9	22	1.8
Professional	3	1.0	2	0.6	6	2.1	6	1.9	17	1.4
Others	35	11.8	21	6.4	24	8.2	18	5.7	98	8.0
Total	296	100	326	100	292	100	315	100	1229	100

Source: Baseline Survey, 2022

2.8 House Structure

The house structure of HHs also helps in assessing their socio-economic condition. Table 2.6 and Fig 2.1 shows that 157 HHs (49.06%) had *Kutcha* houses, 113 HHs (35.31%) had S*emi-Pucca* houses and only 50HHs (15.63%) had access to *Pucca* houses in the year 2021. The %ages of *Pucca* houses were highest in Khajuripada and Tikabali. The *Kutcha* houses were the highest in the Chakapada and G. Udayagiri block of the district.

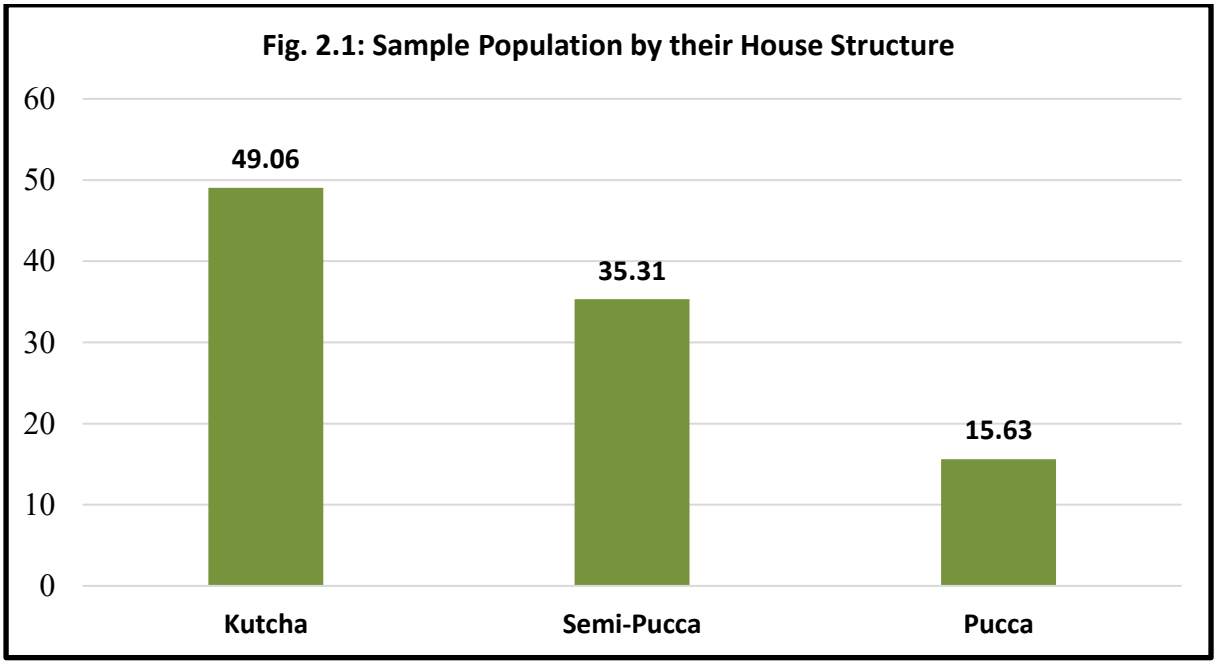


Table 2.6: Distribution of Households by House Structure Across Blocks										
House Structure	Chakapada		G. Udayagiri		Khajuripada		Tikabali		Total	
	No	%	No	%	No	%	No	%	No	%
Kutcha	47	58.75	41	51.25	37	46.25	32	40.00	157	49.06
Semi-Pucca	20	25.00	30	37.50	29	36.25	34	42.50	113	35.31
Pucca	13	16.25	9	11.25	14	17.50	14	17.50	50	15.63
Total	80	100	80	100	80	100	80	100	320	100

Source: Baseline Survey, 2022

2.9 Occupation

The economic activity data of 1,294 individuals across Chakapada, G. Uadayagiri, Khajuriapada, and Tikabali shows that farming is the main occupation, involving 40.8% of the population. This is followed by housewives, who make up 25.81%, reflecting a significant number of non-working women in households. Wage labourers account for 5.41%, and pensioners form 5.64% of the total. A small portion is engaged in private service (1.08%) and government jobs (0.31%). Business activities are almost absent, with only one person reported. The number of unemployed individuals is 6.8%, while children not yet engaged in any work or study make up 4.4%. No individuals were reported as students. The "Others" category, covering 9.66%, likely includes informal or unspecified activities. Overall, the data shows a largely agrarian economy with limited participation in formal sectors like service and business. (Table 2.7)

Table 2.7 Distribution of HH population by Occupation Across Blocks										
Occupations	Chakapada		G. Udayagiri		Khajuripada		Tikabali		Total	
	No	%	No	%	No	%	No	%	No	%
Agriculture	148	46.84	113	32.47	136	44.88	131	40.06	528	40.80
Daily /Wage Labour	11	3.48	29	8.33	17	5.61	13	3.98	70	5.41
Dairy/goat/ poultry	0	0.00	1	0.29	0	0.00	0	0.00	1	0.08
Entrepreneur/ Business	1	0.32	1	0.29	0	0.00	2	0.61	4	0.31
Govt sector	3	0.95	4	1.15	2	0.66	5	1.53	14	1.08
Private sector	74	23.42	96	27.59	73	24.09	91	27.83	334	25.81
Student	21	6.65	21	6.03	14	4.62	17	5.20	73	5.64
Housewife	13	4.11	32	9.20	20	6.60	23	7.03	88	6.80
Unemployed	20	6.33	17	4.89	13	4.29	7	2.14	57	4.40
Others	25	7.91	34	9.77	28	9.24	38	11.62	125	9.66
Total	316	100	348	100	303	100	327	100	1294	100

Source: Baseline Survey, 2022

2.10 Annual Income

The annual income distribution of the 320 surveyed households across Chakapada, G. Udayagiri, Khajuriapada, and Tikabali shows that more than half of the households (52.8%) earn up to ₹40,000 per year, indicating a high level of poverty. A significant portion (38.8%) falls in the income range of ₹40,001 to ₹80,000. Only a small number of households earn higher incomes—3.1% earn between ₹80,001 and ₹1,20,000, 2.8% between ₹1,20,001 and ₹1,60,000, and just 0.3% between ₹1,60,001 and ₹2,00,000. Very few households (2.19%) earn above ₹2,00,000 annually. Chakapada and Khajuriapada have the highest proportion of low-income households, while Tikabali and G. Udayagiri show a slightly better income spread. (Table 2.8)

Table-2.8 Distribution of Sample HHS by Annual Income

Blocks	Up to 40000		40001-80000		80001-120000		120001-160000		160001-200000		Above 200000		Total	
	No	%	No	%	No	%	No	%	No	%	No	%	No	%
Chakapada	46	57.5	28	35	1	1.25	3	3.75	0	0	2	2.5	80	100
G. Udaygiri	39	48.75	32	40	3	3.75	2	2.5	1	1.25	3	3.75	80	100
Khajuriapada	46	57.5	30	37.5	2	2.5	1	1.25	0	0	1	1.25	80	100
Tikabali	38	47.5	34	42.5	4	5	3	3.75	0	0	1	1.25	80	100
Total	169	52.8	124	38.8	10	3.1	9	2.8	1	0.3	7	2.19	320	100

Source: Baseline Survey, 2022

2.11 Land Ownership Pattern

The landholding status of 320 sample households across four blocks—Chakapada, G. Udayagiri, Khajuripada, and Tikabali—presents a clear picture of marginal land ownership among rural families in the surveyed area. A significant proportion of households (60.63%) fall in the category of owning less than 2 acres of land. This category is most dominant across all blocks, with G. Udayagiri showing the highest share at 68.75%, followed by Khajuripada at 65%, Tikabali at 56.25%, and Chakapada at 52.5%. This highlights a widespread prevalence of small and marginal landholders in the region. Households with medium holdings (more than 2 to 5 acres) account for 27.81% of the total sample. Chakapada leads in this group with 38.75%, whereas G. Udayagiri has the lowest share at 13.75%. This suggests some degree of land consolidation in Chakapada relative to the other blocks. A very small fraction of households, only 2.19%, own land between 5 and 10 acres. Each block has minimal representation in this category, with at most three households in Chakapada. Notably, there are no households in any of the blocks that own more than 10 acres of land. Landlessness affects around 9.38% of the surveyed households. G. Udayagiri reports the highest proportion of landless households at 15%, followed by Tikabali at 11.25%. Chakapada has the least with only 5%. (Table 2.9)

Table 2.9: Sample Households by their Land Ownership										
Category	**Chakapada**		**G. udayagiri**		**Khajuripada**		**Tikabali**		**Total**	
	No	%	No	%	No	%	No	%	No	%
No Land	4	5.	12	15.0	5	6.25	9	11.25	30	9.38
Less than 2 Acres	42	52.50	55	68.75	52	65.00	45	56.25	194	60.63
More than 2 to 5 Acres	31	38.75	11	13.75	22	27.50	25	31.25	89	27.81
More than 5 to 10 Acres	3	3.75	2	2.50	1	1.25	1	1.25	7	2.19
More than 10 Acres	0	0	0	0	0	0	0	0	0	0
Total	80	100	80	100	80	100	80	100	320	100

Source: Baseline Survey, 2022

2.12 Conclusion

The socio-economic profile indicates that the majority of the respondents were STs (70.31%) in social group, Hindu (99%) by religion, and cultivators (40.80% by economic activity. Further, it was reported that a larger population reside in *Kutcha* houses (49.6%). The total surveyed population of 1,216 includes 667 males and 627 females, indicating a slightly higher male population. The working-age group (19–44 years) forms the largest segment at 40.8 %, reflecting a strong labour potential. Income-wise, 52.8% earn below ₹40,000 annually, and 38.8% between ₹40,001–₹80,000. Landholding shows 9.38 % landless and 60.63% owning less than 2 acres, reflecting small-scale farming dominance in the district.

CHAPTER III

PRODUCTION OF MILLETS

3.1 Introduction

In this chapter an attempt has been made to understand the status of the area, production, and productivity of millets, usage of seeds and package of practices in Kandhamal district. These are based on the Baseline data of 2022 from HHs surveyed in Tikabali, Khajuripada, G.Udayagiri, and Chakapada blocks of Kandhamal district.

3.2 Area, Production and Yield of Ragi

The data in Table 3.1 presents the area, production, and yield of Ragi in Kandhamal district across four blocks—Chakapada, G. Udayagiri, Khajuripada, and Tikabali. Out of the 320 sample households 102 (31.87) households are engaged in Ragi cultivation. Khajuripada has the highest number of Ragi-growing households (35), followed by Tikabali (34) and Chakapada (28), while G. Udayagiri has only 5 households growing Ragi.The total area under ragi cultivation by these 102 households come to around 82.7 acres. Khajuripada again leads with 38 acres (45.95%), followed by Tikabali 22.25 acres (26.90%) and Chakapada 16.15 acres (19.53%). The total Ragi production across all blocks is 138.88 quintals, with Khajuripada producing the highest 37.64 % followed closely by Chakapada 35.75%. Chakapada, however, records the highest yield per acre at 3.07 quintals and the highest yield per household at 1.77 quintals, indicating better productivity. The overall average yield across the district is 1.68 quintals per acre and 1.35 quintals per household.

Table 3.1: Area, Production, and Yield of Ragi in Kandhamal District

	Households		Area in Acre		Production (in Qtls)		Yield	
Blocks	No	%	No	%	No	%	Qtls/Ac	Qtls/HH
Chakapada	28	27.45	16.15	19.53	49.65	35.75	3.07	1.77
G. Udayagiri	5	4.90	6.3	7.62	3.8	2.74	0.60	0.76
Khajuripada	35	34.31	38	45.95	52.28	37.64	1.38	1.41
Tikabali	34	32.33	22.25	26.90	33.15	23.87	1.49	1.00
Total	102	100	82.7	100	138.88	100	1.68	1.35

Source: Baseline Survey, 2022

3.3 Types of Seed being Used

Seed is one of the determinants of production, yield, and quantity of millet. Overall, out of the total Ragi cultivated HHs, 18.63 % of HHs used hybrid seeds and 81.37 % of HHs used local seeds for their production (Table 3.2)

Table 3.2: Types of Seed being used in Blocks										
Particulars	**Chakapada**		**G. Udayagiri**		**Khajuripada**		**Tikabali**		**Total**	
	No	%	No	%	No	%	No	%	No	%
Hybrid	23	35.38	5	7.69	24	64.86	26	40	78	76.47
Local	5	13.51	0	0	11	16.92	8	21.62	24	23.53
Total	28	27.45	5	4.90	35	34.31	34	33.33	102	100

Source: Baseline Survey, 2022

3.4 Sources of Seed

Table 3.3 shows the distribution of households by source of seeds shows that the majority of farmers in the district depend on their own saved seeds, accounting for 80.39% of the total 102 Ragi cultivating households. The use of government-supplied seeds stands at 13.73%, while NGOs contribute 3.92%. Only 0.98% of households procure seeds from the market or relatives, indicating minimal external sourcing. Block-wise, the use of own seeds is highest in G. Udayagiri (100%) and Tikabali (91.18%), followed by Chakapada (78.57%) and Khajuripada (68.57%). Government seeds are used mainly in Khajuripada (28.57%) and Chakapada (14.29%), while NGO support is seen in Chakapada (7.14%) and Tikabali (5.88%). Overall, the analysis indicates a strong dependence on traditional seed-saving practices, with limited involvement of formal and institutional seed supply systems.

Table 3.3: Distribution of Households by Source of Seed										
Sources of Seeds	**Chakapada**		**G. Udayagiri**		**Khajuripada**		**Tikabali**		**Total**	
	No	%	No	%	No	%	No	%	No	%
Own seed	22	78.57	5	100	24	68.57	31	91.18	82	80.39
Relatives	0	0.00	0	0	0	0.00	1	2.94	1	0.98
Market	0	0.00	0	0	1	2.86	0	0.00	1	0.98
NGO	2	7.14	0	0	0	0.00	2	5.88	4	3.92
Govt	4	14.29	0	0	10	28.57	0	0.00	14	13.73
Total	28	100	5	100	35	100	34	100	102	100

Source: Baseline Survey, 2022

3.5 Use of Fertilisers by Households

Fig. 3.1 represents the information on the use of fertilizer among farmers in the study area for millet cultivation. 88.24 % of households used only organic fertilizers, 5.88 % used only chemicals and 22.55 % used both (organic and chemical) in their Ragi fields. This indicates that more than one fourth of the sample ragi farmers used chemical fertilizers in their agricultural fields for ragi production. (Table 3.4)

Fig. 3.1 : Distribution of Households by use of Fertiliser

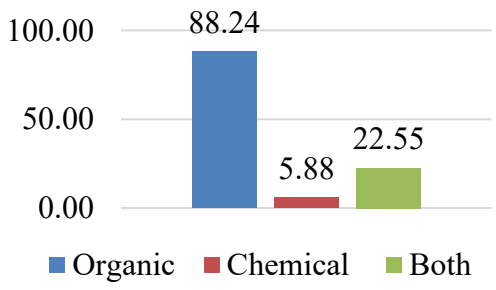


Table 3.4 Distribution of Households by their Fertilizer Use										
Blocks	**Chakapada**		**G. Udayagiri**		**Khajuripada**		**Tikabali**		**Total**	
	No	%	No	%	No	%	No	%	No	%
Organic	24	85.71	2	40	18	51.43	29	85.29	90	88.24
Chemical	2	7.14	1	20	2	5.71	1	2.94	6	5.88
Both	2	7.14	2	40	15	42.86	4	11.76	23	22.55
	28	100	5	100	35	100	34	100	102	100

Source: Baseline Survey ,2022

The analysis on the usage of fertilizers and pesticides among the surveyed households reveals the following patterns. In Chakapada block, out of the total 80 samples, 85 % of farmer used Organic, 7.14 % Chemical and 7.14 % both used for their cultivation. In G. Udayagiri block, out of the total 80 samples, 40 % of farmer used Organic, 20 % Chemical and 40 % both used for their cultivation. In Khajuripada block, out of the total 80 samples, 51.43 % of farmer used Organic, 5 % Chemical and 42.86 % both used for their cultivation. Similarly, In Tikabali block, out of the total 80 samples, 85.29 % of farmer used Organic, 2.94 % Chemical and 11.76 % both used for their cultivation.

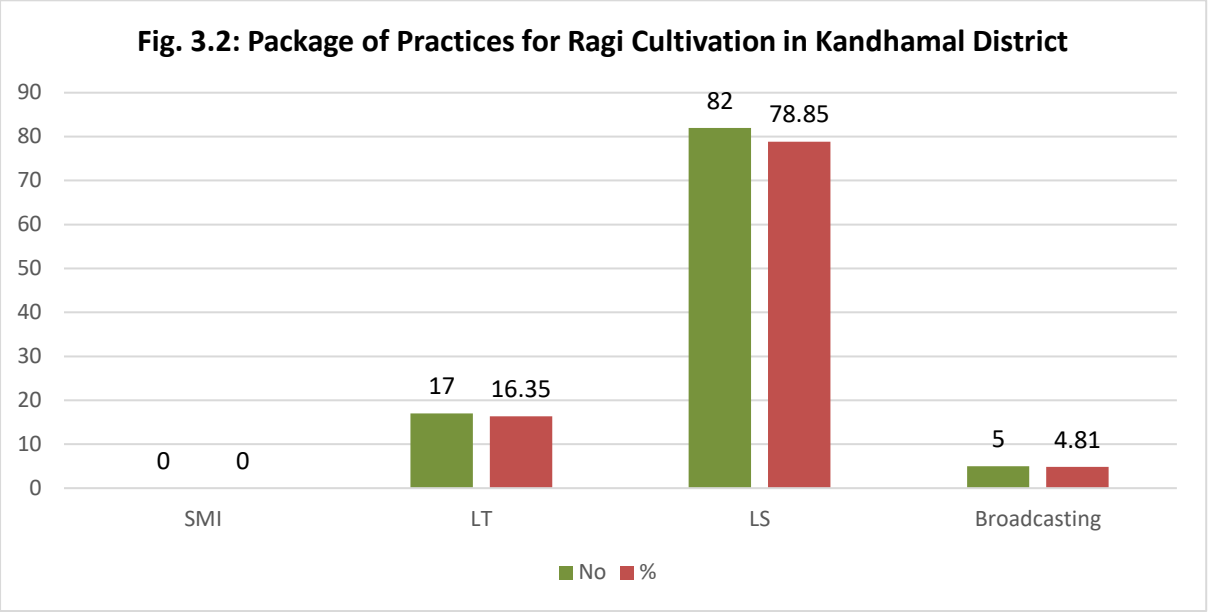
3.6 Package of Practices

The different sowing methods (broadcasting, line showing/line transplanting, and System of Millet Intensification) used by the surveyed HHs for *Ragi* cultivation in the year 2022-23. Out of the total 102 ragi cultivating HHs, most had adopted LS method (78.43%) followed by LT method (16.66%) for sowing of seed. Very few HHs from G. Udayagiri and Tikabali had adopted broadcasting method (4.90%). (Fig 3.2)

Table 3.5 reveal on package of practices for Ragi cultivation in Kandhamal district across blocks. Out of total millet cultivated HHs, in Chakapada block, 17.86 % of farmers cultivates Ragi by line transplanting and 82.14 % through line showing. In G. Udayagiri block, the farmers practices for cultivation Ragi 40 % LT, 20 % LS and 20 % broadcasting. Similarly, in Khajuripada, 11.42 per cent of farmer practices LT, 88.57 % of farmers practices LS for cultivating Ragi. In Tikabali block, 73.53 % of farmers cultivated Ragi through LT, 17.65 % of famer through LS and 8.82 % through broadcasting method. However, none of the HHs practiced the System of Millet Intensification (SMI) method in the district.

Table 3.5: Package of Practices										
Package of Practices	**Chakapada**		**G. Udayagiri**		**Khajuripada**		**Tikabali**		**Total**	
	No	%	No	%	No	%	No	%	No	%
SMI	0	0	0	0	0	0	0	0	0	0
LT	5	17.86	2	40	4	11.42	6	17.65	17	16.66
LS	23	82.14	1	20	31	88.57	25	73.53	80	78.43
Broadcasting	0	0	2	40	0	0	3	8.82	5	4.90
Total	28	100	5	100	35	100	34	100	102	100

Source: Baseline Survey, 2022



3.7 Reasons for not Cultivating Millets

In Kandhamal district, out of a total of 320 sample households of 4 blocks, 102 households (31.87%) are engaged in millet cultivation, while the remaining 218 households (68.12%) do not cultivate millets. Among these non-cultivating households, the major reason reported was shortage of land, cited by 130 households (59.6%), indicating severe land constraints for millet farming. This was followed by 46 households (21.1%) who found millet cultivation not profitable, and 6 households (2.8%) who reported non-availability of quality seeds. Additionally, 36 households (16.5%) mentioned lack of irrigation as a key challenge.

3.8 Conclusion

One type of millets i.e., Ragi is usually grown in Kandhamal during the period covered under Baseline Survey, 2022. It was found that, out of 320 surveyed HHs from four blocks only 102 HHs had cultivated millets (Ragi) in an area of 82.7 ac with a total production of o 138.88 Qtls. Overall, out of the total Ragi cultivated HHs, 23.53 % of HHs used hybrid and 76.47 % of HHs used local seed for their production. Many of the sample farmers have adopted LS method for sowing of ragi seed. None of the HHs have used SMI method for seed sowing. Similarly, most of them have used only organic fertilizers in their agricultural land for Ragi cultivation.

CHAPTER IV

CONSUMPTION OF MILLETS

4.1 Introduction

Millets are the staple food of tribal communities. However, with the change of time, consumption of millets has been gradually decreased in these regions for the last two-three decades. Efforts are made in this chapter to assess the consumption pattern of millets across seasons of the year, as well as the consumption of millets during different meals of the day, and also on different types of millet recipes consumed by the surveyed HHs.

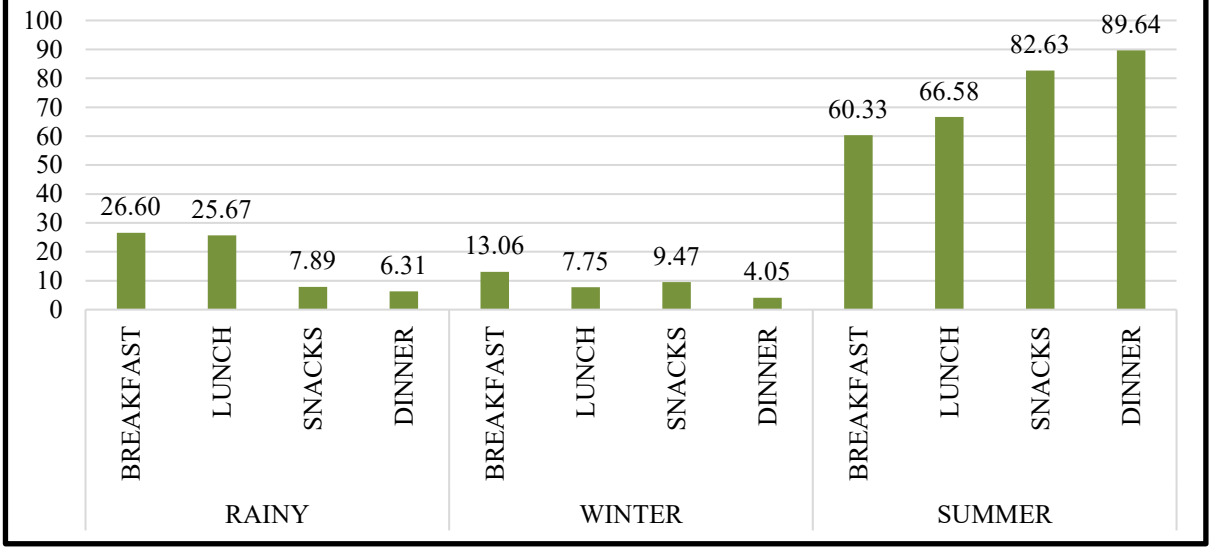
4.2 Consumption of Ragi by Households

In Kandhamal district, out of 320 sample households, 264 reported consuming ragi, indicating its continued importance in local diets. The block-wise distribution of millet consumption indicates that Dabugaon recorded the highest number of households consuming millets (77), followed closely by Tikabali with 75 households. Khajuripada had 62 households, while G. Udayagiri reported the lowest at 49 households. The baseline survey shows variation across blocks, with Khajuripada recording the highest average consumption at 20.41 kg per household, followed by Chakapada (17.38 kg), Tikabali (15.72 kg), and G. Udayagiri (6.69 kg). The district's overall average stands at 15.05 kg per household. These differences reflect variations in food preferences, accessibility, and dependence on millets across the blocks, with Khajuripada and Chakapada showing relatively stronger millet consumption patterns.

4.3 Season-wise Consumption of Millets

The information on the season-wise consumption of millets in Kandhamal district has been presented in Figure 4.1.

Fig. 4.1: Consumption of Millets Across Seasons



The fig 4.1 reveals that consumption of millets particularly Ragi in summer season is higher than from winter and rainy seasons. In terms of breakfast, lunch, evening snacks and dinner, the % of consumption pattern is higher in summer. The respondents informed that they consume more millet during dinner time in summer season. During summer, households consume more millets at dinner (89.64%) and snacks (82.63%), followed by lunch (66.58%) and breakfast (60.33%). In the rainy season, consumption is moderate at breakfast (26.60%) and lunch (25.67%), but much lower for snacks and dinner. Winter shows the least millet intake, ranging from 4.05% at dinner to 13.06% at breakfast. (percentage is calculated from total millets consuming Households in fig 4.1)

4.4 Consumption of Millets during different Meals of the Day

Table 4.1 presents the distribution of households by different meals consumed across the four sample blocks. The data reveals that millet consumption is highly integrated into daily diets across all blocks. Breakfast shows the highest inclusion of millets, with 95.45% of households consuming them. Out of **millet consuming households,** in Chakapada (97.40%) and Tikabali (97.33%) are having millets in breakfast. Lunch also records a high intake (81.06%), reflecting millets' role in main meals. However, consumption drops during evening snacks (38.64%), indicating limited diversification into non-meal items. Dinner consumption varies notably—Khajuripada leads with 93.55%, while Tikabali reports the lowest at 44%. Overall, millets remain a staple primarily for breakfast and lunch across the district.

Table 4.1: Millets Consuming Households by their Different Meals in a Day

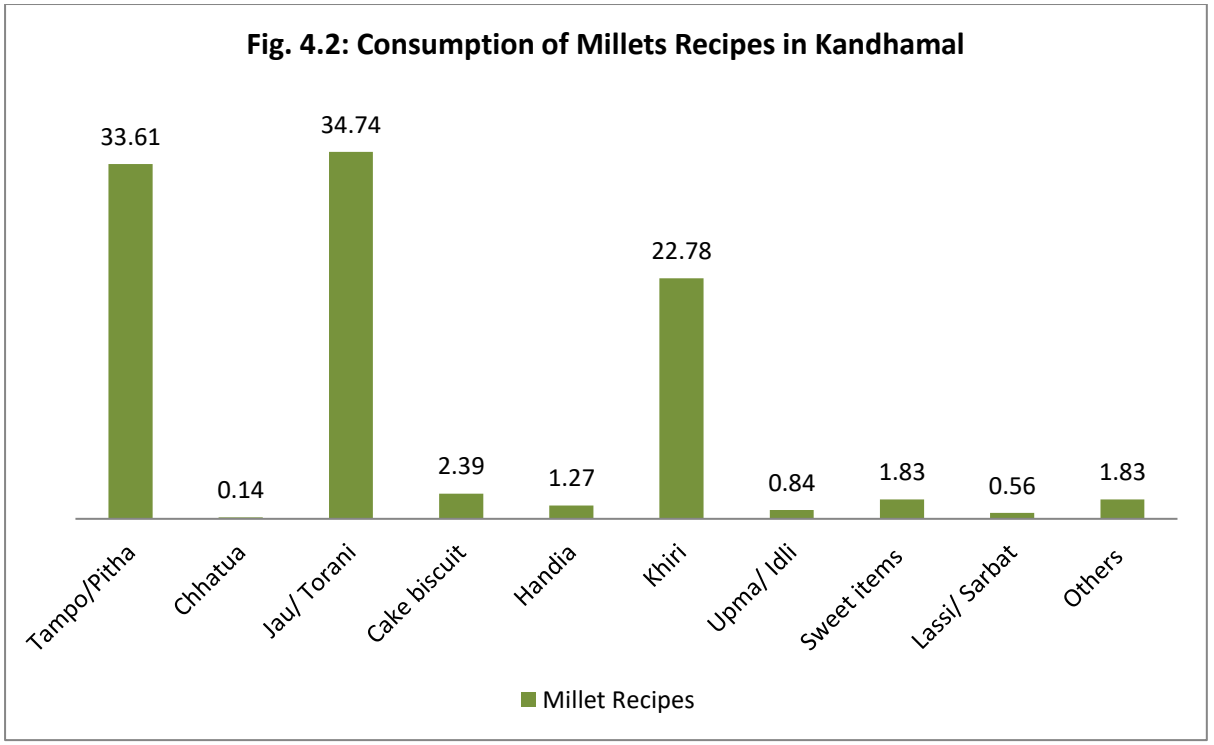
Particulars	Chakapada 77		G.Udayagiri 49		Khajuripada 62		Tikabali 75		Total 264	
	No	%	No	%	No	%	No	%	No	%
Breakfast	75	97.40	46	93.88	58	93.55	73	97.33	252	95.45
Lunch	68	88.31	37	75.51	43	69.35	66	88.00	214	81.06
Evening Snacks	32	41.56	16	32.65	24	38.71	30	40.00	102	38.64
Dinner	65	84.42	34	69.39	58	93.55	33	44.00	190	71.97

Source: Baseline Survey, 2022

4.5 Consumption of Different Millet Recipes

The consumption of millets in Kandhamal district is a year-old ancient traditional practice by which millet cultivation is still alive as it is consumed as a major food in their daily diet. People are consuming millets in several ways in the form of Tampo/Pitha, Chhatua, Jau/Torani, Cake/Mixture/Biscuit, Handia, Khiri, Idli/Upma, Sweet items, Lassi/ Sarbat and others.

Fig 4.2 reveals the different recipes wise consumption of millets. In Kandhamal district, out of the total **millets consuming household**, 33.61 % consume *Tampo/Pitha*, 34.74 % consume *Jau/ Torani,* 22.78 % of consume *Khiri,* 2.39 % consume cake/biscuit, 1.91 % consume in the form of sweet items. Detailed consumption pattern of block-wise millets consumption is presented in Figure 4.2



4.6 Conclusion

The consumption of millets was found to be more in summer season. The analysis of millet consumption in Kandhamal district reveals that ragi remains an integral part of the local diet, with 264 out of 320 households consuming it. Khajuripada and Chakapada blocks show higher average consumption compared to other blocks. Seasonal trends highlight that millet consumption peaks during the summer, particularly at dinner time.

CHAPTER V

PROCESSING AND MARKETING OF MILLETS

5.1 Introduction

This chapter looks into the various aspects of processing (viz. mode of processing, accessibility for processing) and marketing (mode of selling) of millets carried out in 2021, the year before the intervention of SAA in Kandhamal district.

5.2 Processing of Millets

Out of the total 102 households around 89 HHs were processing Ragi.Table 5.1 shows the distribution of millet processing methods used by households. Traditional processing is the most common, with the highest share in Tikabali (36.47%) and Khajuripada (32.94%). Machine processing is mainly reported in Chakapada (44.44%) and Khajuripada (38.88%), while no machine use is recorded in G. Udayagiri. A combination of both methods is seen only in Khajuripada (55.55%) and Tikabali (44.45%). Overall, traditional methods dominate, with limited use of machines or mixed approaches. The table 5.1 shows the methods of ragi processing adopted by households across four blocks. Traditional processing is the most common method, used by 62 households, with Tikabali (37.10%) and Khajuripada (30.65%) having the highest share. Machine-based processing is less prevalent, practiced by 18 households, with Chakapada (44.44%) and Khajuripada (38.88%) leading in usage. Some households use both traditional and machine methods, totaling 9 households, with Khajuripada (55.55%) and Tikabali (44.45%) showing the highest adoption. G. Udayagiri shows minimal engagement in processing, with only traditional methods used by a small number of households. Overall, while traditional methods dominate, some blocks are gradually adopting mechanized or mixed processing techniques.

Table 5.1 Methods of Processing of Ragi by HHs

Blocks	Traditional		Machine		Both		Total	
	No	%	No	%	No	%	No	%
Chakapada	15	65.22	8	34.78	0	0	23	100
G. Udayagiri	5	100	0	0	0	0	5	100
Khajuripada	19	61.29	7	22.58	5	16.13	31	100
Tikabali	23	76.67	3	10	4	13.33	30	100
Total	62	69.66	18	20.22	9	10.11	89	100

Source: Baseline Survey, 2022

5.3 Marketing of Millets

Marketing of millets is considered important 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 102 HHs those were producing Ragi only 14 HHs were selling Ragi, rest of them used it for their own consumption.

It was reported that among the millets marketed HHs, 6 HHs had sold in the market and 4 HHs sold in Mandi and 3 HHs through middlemen and one through moneylender. Table 5.2. presents the distribution of households by selling points of millets across four blocks..The table illustrates the selling points of millets among households across four sample blocks, highlighting the diverse marketing channels and their relative usage. Out of a total of 14 households selling millets, the mandi system is utilized by 4 households, predominantly in Chakapada and Khajuripada,. Daily markets or haats serve as selling points for 6 households, The role of middlemen is significant in

Table 5.2: Selling Points of Ragi Across the Sample Blocks

Blocks	Mandi		Daily Market/Haat		Middleman		Moneylender/ Sahukar		Total
	No	%	No	%	No	%	No	%	No
Chakapada	2	40	1	20	2	40	0	0	5
G.Udayagiri	0	0	1	100	0	0	0	0	1
Khajuripada	2	33.33	2	33.33	1	16.67	1	16.67	6
Tikabali	0	0	2	100	0	0	0	0	2
Total	4	28.57	6	42.85	3	21.42	1	7.14	14

Source: Baseline Survey, 2022

some blocks, with 3 households relying on them—2 in Chakapada and 1 in Khajuripada.Only a single household in Khajuripada sells through a moneylender or sahukar, Among the blocks, Khajuripada and Chakapada demonstrate the highest engagement in millet marketing, employing multiple channels, whereas G. Udayagiri and Tikabali show very limited marketing activity.

5.4 Conclusion

Ragi processing among households is largely dominated by traditional methods, with limited adoption of machines or combined approaches in some blocks. Marketing of ragi remains minimal, as most households consume their produce at home, relying primarily on local markets and intermediaries when selling. Overall, while traditional practices continue to prevail, there is potential to promote mechanized processing and improve direct market access to support millet producers.

Mapping of Baseline Survey of Kandhamal District, Phase-VI, 2022

Indicators	Unit	Baseline Value				
		Chakapada	G. Udayagiri	Khajuripada	Tikabali	Total
% Of Sample HHs Cultivating Ragi	%	35	6.25	43.75	42.5	31.87
Production of Ragi	Qnt.	49.65	3.8	52.28	33.15	138.88
Package of Practice						
a) SMI	%	0	0	0	0	0
b) LT	%	17.86	40	11.42	17.65	16.66
c) LS	%	82.14	20	88.57	73.53	78.43
d) Broadcasting	%	0	40	0	8.82	4.90
Yield Rate (Qnt. /Acre)	Qnt.	3.07	0.60	1.38	1.49	1.68
% Of HHs Consuming Ragi						
a) Breakfast	%	97.40	93.88	93.55	97.33	95.45
b) Lunch	%	88.31	75.51	69.35	88	81.06
c) Evening Snacks	%	41.56	32.65	38.71	40	38.64
d) Dinner	%	84.42	69.39	93.55	44	71.97
% Of HHs Processing Ragi						
a) Manually	%	62.22	100	61.29	76.67	69.66
b) Machines	%	34.78	0	22.58	10	20.22
c) Both	%	0	0	16.13	13.33	10.11
% Of HHs Selling Ragi						
a) Mandi	%	40	0	33.33	0	28.57
b) Daily Market/Haat	%	20	100	33.33	100	42.85
c) Middlemen	%	40	0	16.67	0	21.42
d) Sahukar/Moneylenders	%	0	0	16.67	0	7.14

Annexure 2 Confidential and to Be Used for Research Purpose Only

Households Schedule for

Baseline Survey 2022-23, Phase VI of SHREE ANNA ABHIYAN (SAA)

Serial No..…….

Date……...

Part-I: Socio-Economic Status

1. Profile of the Households

1.1. Name of the Households' Head: .....

1.2. Name of the Respondent: .....

1.3. Name of the (i) Village: (ii) GP

(iii) Blocks: (iv) District:

1.4. Category: (i) SC (ii)ST (iii) OBC/SEBC (iv) Others (specify)

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

1.6. Ration Card Holding: (i) Ration Card (ii) Antyodaya Card (iii) Other (iv) No Card

1.7. Type of Family: (i) Nuclear (ii) Joint (iii) Extended (iv) Others (specify)

1.8. House Structure: (i) Katcha (ii) Semi-Pucca (iii) Pucca

3. HHs' Land ownership in Acre:…….

4. Operational Holdings Under Different Crops (in Acre)

Sl No.	Name of the Crops	Yes/ No	Own Land*	Leased-in*	Sl. No.	Name of the Crops	Yes / No	Own Land*	Leased-in*
a	Paddy				c	Vegetables			
b	Millets				d	Any Others Crops			
Total Operational Holding									

5. Annual Expenditure:

Sl. No	Source	Expenditure Heads						Total Amount (in Rs.)
1	Agriculture	Land Preparation	Transplantation/ Sowing	Weeding	Fertilizers/ Pesticides	Harvesting	Others	
	a) Millet							
	b) Paddy							
	c) Vegetables							
	d) Any Other Crops (Specify)							
3	Households Expenses							
4	Other HH Expenses							
	Total							

6. Annual income of the HH (last year.....)

7. Have you taken any agricultural loan? 1-Yes 2-No If yes, please provide details……

2. Household Particulars:

Sl. No	Name of the HH Members	Relationship with HoH (Use Code)	Age	Sex	Marital Status (Use Code)	Educational Qualification (Use Code)	Main		Subsidiary		Consume Millet (Yes/No)
							Occupation (Use Code)	Annual Income	Occupation (Use Code)	Annual Income	
1											
2											
3											
4											
5											
6											
7											
8											
9											
10											
11											
12											

Codes: Marital Status: 1- Married, 2- Unmarried, 3- Widow, 4- Widower, 5- Divorced, 6- Separated, 7- Any Others (pl specify)
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- Grandson, 12- Granddaughter, 13- Father- in-Law, 14- Mother-in-Law, 15- Any Other (Specify)
Education: 1- Illiterate, 2- Up to Class 5, 3- Class 6-10, 4- Higher Secondary, 5- Graduate, 6- Post-Graduate, 7- Technical (Diploma/Degree), 8- Professional/Management, 9- Any Other (Specify)
Occupation: 1- Agriculture, 2- Daily Wage Labour, 3- Business/Entrepreneurship, 4- Govt sector, 5- Private Sector, 6- Pension/Remittances 7- Student 8- Housewife, 9- Unemployed, 10- Others (pl. specify)

Part-II: Production of Millets

8. **Do you cultivate millets?** 1-Yes 2-No

If yes, give millet-wise production details

Sl. No.	Millet Crops	Season	Area (in Acre)	Land Type Used	Sources of Irrigation	Type of Seed Used	Source of Seed	Quality of Seeds	Method of Cultivation	Use of Fertilizer	Use of Pesticides	Production (Qnt.)	Kept for Seed (Qnt.)	Kept for Consumption (Qnt.)	For Marketing (Qnt.)
a	Mandia	Kharif													
		Rabi													
		Summer													
b	Suan/ Kosla /Gurji	Kharif													
		Rabi													
		Summer													
c	Koda	Kharif													
		Rabi													
		Summer													
d	Any other (specify)	Kharif													
		Rabi													
		Summer													

Land Type Used: 1-Upperland, 2-Slope Land, 3-Middle Land, 4-Low Land.
Sources of Irrigation: 1. Rain, 2. Farm Pond, 3- Stream, 4- MIP/WS, 5-River, 6- Canal, 7- Bore well, 8-Others(Specify).
Type of Seed Used: 1-Local, 2- Certified, 3-HYV. Source of Seeds: 1-Own Seed, 2- Relatives, 3-Market, 4- NGO, 5- Govt./ Community Seed Centre, 6-Others (pl. specify)
Quality of Seeds: 1. Good, 2. Average, 3. Bad
Method of Cultivation: 1) SMI- System of Millets Intensification, 2) LT- Line Transplantation, 3) LS- Line Showing, 4) Broadcasting, 5) Others (specify)
Use of Fertilizer: 1) Organic Manure, 2) Chemical Fertilizers, 3) Both, 4) No Use. Pest Control: 1) Bio-Pesticides, 2) Chemical Pesticides, 3) Both, 4) No Use

9. Whether you follow mixed farming or mono farming system? **1. Mixed 2 . Mono**
If mixed, with which are the crops(s)?

10. How do you store your seed and grain?

(i) Jute Bag (ii) Earthen Pot (iii) Bamboo Basket (iv) Pura (paddy rope)
(v) Open Hanging (vi) Other (Specify)

11. Had your seed or grain got damaged during last year? **1. Yes 2 .No**

12. Have you done weeding for the millets cultivation? **1. Yes 2 . No**

13. If Yes, Number of times you do weeding in your millet fields, by each method?

1) Manually_____ 2) By Weeder_____3) Both_____

14. If By Weeder, Sources of weeder?

i) Own ii) Rental iii) Borrowed from Neighbours iv) Govt. Provided v) Other

15. If HH is not cultivating any of the millets, what is the reason?

(i) Not profitable (ii) Shortage of land (iii) Non-availability of Seeds

(iv) Lack of Irrigation (v) Others (pl. specify) ……

16. How many years have you not cultivated Millets ..... ?

17. Do you like to cultivate Millets under this programme? **1.Yes 2.No**

Part-III: Consumption of Millets

18. Does your households consume millets? **1. Yes 2. No**
If Yes, Types of millets your HH consumed in different seasons (Put Tick Mark)

Sl. No.	**Name of the Millets**	**Winter**				**Summer**				**Rainy**			
	Times	Breakfast	Lunch	Evening Snacks	Dinner	Breakfast	Lunch	Evening Snacks	Dinner	Breakfast	Lunch	Evening Snacks	Dinner
a	Mandia												
b	Suan/ Kosla / Gurji												
c	Koda												
d	Any Other Millets (Specify)												

19. **Millets Requirements of the HH:**

Sl. No.	Seasons	Millets Consumed (in Kg.)	Total Requirement of Millets (Kg.)	Sources of Millet Consumed by HH (in Kg)				Total
				Produced	Purchased	Borrowed/ Exchanged	Other Sources	
a	Winter							
b	Summer							
c	Rainy							
d	Total							

20. **Consumption of Millets in different Recipes** (Put Tick Mark)

Sl. No.	Name of The Millets	Pitha/ Tampo	Chhatua	Jau/ Torani	Khiri	Idli/ Upama	Sweets Items	Others (Specify)	Remarks
a	Mandia								
b	Suan/ Kosla/ Gurji								
c	Kodo								
d	Any Other Millets (Specify)								

21. Is there any special occasion when you prepare millets based items? **1. Yes 2. No**

    If yes, what is/are the occasion(s) (specify)? _____

22. For this what type of millet is required (specify)?_____

23. Do you purchase Millet Based Products from market for consumption? **1.Yes 2.No**

24. If Yes, what are the millets-based items you usually purchase from the market?

    1. Biscuit/Mixture 2. Idli/Upama 3. Chhatua 4.Pakoda 5. Others (Specify)

25. How do you like the taste of millet-based products you purchased from market?

    1. Liked it 2. So-so 3. Do not Like it

Part-IV: Processing of Millets

26. Do you process the millet products in your house? **1.Yes 2.No**

27. If Yes, who among your family members involved in the processing of millets?

    i). Nos. of Male members_____. ii). Nos. of Female members_____

28. How do you process the millets? a) Traditionally b) Machinery c) Both d) Others (Specify)

29. If traditionally, pleases elaborate the methods of processing.

30. If Machinery, how far is the location of the processing unit from your village? _____km

Part-V: Marketing of Millets

Sl. No.	Millet Crops	Yes /No	Sources of Millets You Sale	Quantity	Price / Kg.	Govt. Price (MSP)	Where did you sell your millets	Distance in Km	Mode of Transportation Used for Millets Sale	Reason for Sale
a	Mandia									
b	Suan/ Kosla /Gurji									
c	Koda									
d	Any other (specify)									

Sources of Millets You Sell: 1. Own Produced, 2. Purchase from Farmers, 3. Others (Specify)
Where Sold Your Millets: 1. Govt. *Mandi, 2.* Middlemen/ Local Businessman, 3. Moneylender/ *Sahukar, 4.* Daily market/ Haat 5. Others (pl. specify)
Mode of Transportation: 1. Headload, 2. Cycle, 3. Cart, 4. Own Vehicle, 5. Hired Vehicle, 6. Public Transport, 7. Others (Specify)
Reason for Sale: 1.Better Price, 2.Immediate Need of Cash, 3. Loan Repayment, 4. Non-Availability of Market, 5.Any Others (specify)

31. Do you sell millets? 1. Yes
    2 .No
32. Types of Millets, you Sell and Quantity

33. Any instance of distress sale (less than the market price) of Millets? **1.Yes**
    2.No
34. If yes, what is the sale price.....and what is the market price.....
35. What are the marketing processes followed by you? a) Barter b) Money c) Others (specify)
36. Do you sell any millet based value-added products? **1.Yes**
    2.No
37. If yes, provide the details about the Millet Based Value Added Products you sale.

38. Remarks

Contact no of Respondent ……. **Signature of the Researcher/Field Investigator**

CONTRIBUTORS

Ms. Gaytari Nayak (DEO-Cum-FI)

Mr. Smruti Ranjan Sahu (DEO-Cum-FI)

Ms. Swayam Prajan Pattanaik (DEO-Cum-FI)

Ms. Pusapanjali Lenka (DEO-Cum-FI)

Mr. Hemanta Mahanandia (DEO-Cum-FI)

Mr. Prasanta Kumar Sahu (DEO-Cum-FI)

Mr. Sukant Kumar Pradhan (DEO-Cum-FI)

Ms. Madhusmita Choudhury (DEO-Cum-FI)

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Nabakrushna Choudhury Centre for Development Studies (NCDS)

An Indian Council of Social Science Research (ICSSR) Institute in Collaboration with Government of Odisha, Bhubaneswar - 751013, Odisha, India

+91-674-2301094, 2300471 ncdsbbsr1987@gmail.com htttp://ncds.nic.in

@ncdsbhubaneswar @ncds_...