

BASELINE SURVEY:
KANDHAML DISTRICT-2017-18, Phase 2
(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)

2020

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

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FOREWORD

The seeds for the "Special Programme for Promotion of Millets in Tribal Areas of Odisha" (Odisha Millets Mission, OMM) were sown 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 Chairperson, 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. Lo and behold, there was an announcement in the budget speech of 18 March 2016 conveying that the Government of Odisha intends to revive millets. This led to a series of interactions and a memorandum of understanding (MoU) was signed on 27 February 2017 between the 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.

It was in 2017-18 that budget was apportioned for 30 selected blocks, the phase 1 blocks. In principle decision was taken to extend the programme to another 25 blocks in 2018-19, the phase 2 blocks, a further 17 blocks in 2019-20 (that includes 10 under the state plan and seven under District Mineral Fund (DMF), Keonjhar), the phase 3 blocks, and an additional 4 blocks under DMF, Sundargarh in Kharif 2021, the phase 4 blocks. The MoU with NCDS for 7 blocks under DMF Keonjhar was signed on 13 December 2018 and for 35 phase 2 and phase 3 blocks under state plan were signed on 25 February 2019. The current set of 10 baseline reports are based on surveys conducted during October 2019 and January 2020 in 43 blocks where the programme intervention had already started.

In each of the blocks, from the list provided by the facilitating agency through the programme secretariat that had names of participating farmer, village and gram panchayat. We first selected two of the gram panchayats randomly, and then, from each of the selected gram panchayat we selected two villages randomly. From each selected village, 15 farmer households were selected randomly and from a listing of non-participating farming households, five farmer households were selected. If a village did not have 15 participants then the sample size of non-participating households was increased so that the total number of sample households from each village was 20. As per this design, each block would have a sample of 80 farmer households. All respondent households were asked question regarding the scenario before the intervention of the programme, and hence, they were canvassed the same schedule. The survey was conducted by a third party. A sample of the surveyed households was re-visited by the research secretariat team for scrutiny and validation of data. Besides, during this visit, focus group discussions were also conducted in some villages by the research secretariat team.

The lead authors for the current baseline report on Kandhamal are Mr. Ajay Kumar Padra and Dr. Abhisek Mishra along with other members of the study team. As Principal Investigator of the team, I compliment all the members for their effort.

The Odisha Millets Mission, as per a recent report that I authored, comparing first year outcome with the baseline report of the phase 1 blocks indicate that the yield has more than doubled and the value of produce has more than trebled in the year one of its intervention. In 2019, mandia procurement in *swabhiman anchal* of Malkangiri district was the first ever procurement of any grain in the region even

after 70+ years of independence. In 2020, in spite of the pandemic, ragi ladoos are being piloted as a consumption awareness campaign through Integrated Child Development Scheme in Keonjhar and Sundargarh under respective DMF. These expansions are also bringing in opportunities of convergence across line departments, which is an important development for any pro people public policy engagement.

On the research front there have been engagements with a consortium of universities and institutes led by University of Cambridge through TIGR²ESS (Transforming India's Green Revolution by Research and Empowerment for Sustainable food Supplies). Agreements have been signed with Indian Institute of Millets Research (IIMR), Hyderabad, and Central Food Technological Research Institute (CFTRI), Mysuru, Fobenius Institute at Goethe University, Frankfurt and also exploring a research collaboration with them that includes scholars from Groningen University among others.

There has been interest in Odisha Millets Mission from the central as also other state governments. The unique institutional architecture that brings together the Government, civil society and the Academia led by NCDS to complement and supplement each other has been appreciated by policy makers (including National Institution for Transforming India, NITI Aayog), civil society and the Academia. So, the chant of OMM continues to reverberate.

Srijit Mishra
Director, NCDS

ACKNOWLEDGEMENTS

All forms of intellectual exercise, in some form or other, are tacitly tuned from a remote background by a few master brains from behind the screen. However, confession as such cannot compensate their incredible contributions in transforming a mere probability of the yester years to a reality this year. On this score, in the first and foremost, we would like to express our sincere gratitude to farmers, farmers' representatives/associations, senior officers from the state Government, particularly to Mr. R. Balakrishnan, Indian Administrative Service (IAS, superannuated), currently Chief Advisor, Government of Odisha and former Development Commissioner-cum-Additional Chief Secretary (DC-cum-ACS) and former Chairman, Nabakrushna Choudhury Centre for Development Studies (NCDS); Mr. Asit Kumar Tripathy, IAS, Chief Secretary and former DC-cum-ACS, Government of Odisha and former Chairman, NCDS; Mr. Suresh Chandra Mahapatra, IAS, DC- cum-ACS, Government of Odisha and Chairman, NCDS; Mr. Gagan Ku Dhal, IAS, Former Agriculture Production Commissioner; Mr. Pradipta Ku Mohapatra, IAS, Agriculture Production Commissioner; Mr. Manoj Ahuja, IAS, former Principal Secretary, Department of Agriculture and Farmers' Empowerment (DAFE); Dr. Saurabh Garg, IAS, Principal Secretary, DAFE; Mr. Bhaskar Jyoti Sarma, IAS, Former Special Secretary, DAFE; Mr. Suresh Vashishth, Special Secretary, DAFE; Mr. Basant Ku Sar, Former Agriculturist; Mr. Pramod Ku Samal, Agriculturist; Mr. Hari Ballav Mishra, IAS, former Director, Directorate of Agriculture and Food Production (DAFP); Dr. M. Muthukumar, IAS, Director, DAFP; Dr. Brundha D, IAS, Collector & District Magistrate, Kandhamal; Mr. Kashinath Khuntia, former Joint Director Agriculture (JDA), Millets & Integrated Farming, DAFP; Mr. Pradeep Rath, JDA, Millets & Integrated Farming,; Dr. Ananda Chandra Sasmal, Agronomist, DAFE; Mr. Ansuman Pattanayak, In-Charge JDA, Millets & Integrated Farming and Assistant Agriculture Officer (AAO), Farm, Millets, DAFP; and Mr. Sanjay Kumar Pani, Former AAO, DAFP; Ms. Kalpana Pradhan, AAO, DAFP.

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Mohapatra, Librarian; Ms. S. M. Pani, Computer Programmer; Mr. D. B. Sahoo, P.A to Director; Mr. P. K. Mishra, Senior Assistant; Mr.P. K. Mohanty, Junior Accountant; Mr. N. K.Mishra, Jr. Stenographer and Mr. P. K. Mallia, Computer Literate Typist; Mr. S. B. Sahoo, Xerox Operator for their support, help and cooperation.

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Ajay Kumar Padra

Abhisek Mishra

EXECUTIVE SUMMARY

1. Study Area

- 1.1 Kandhamal is one of the seven districts where the "Special Programme for Promotion of Millets in Tribal Areas of Odisha (hereafter, Odisha Millets Mission, OMM)" was started in kharif 2018 in three blocks of the district, namely- Baliguda, K. Nuagaon, and Tumidibandha. 80 HHs were surveyed from each block.

2. Socio-economic Profile

- 2.1 From the surveyed HHs, three social category HHs were identified. Out of 240 surveyed HHs, 205 HHs belong to ST, 16 HHs belong to SC, and 19 HHs belong to Other Social Category (OSG) which included OBC, SEBC and general category.
- 2.2 Two religious communities, viz., as Hindus (61.3 %) and Christians (38.8%) were found in the surveyed blocks.
- 2.3 From surveyed HHs, 12.1% HHs had access to *pucca* houses, 52.5% HHs had access to *kutcha* houses and 35.4% HHs had access to *semi-pucca* houses.
- 2.4 The incidence of poverty was very high among the surveyed HHs as all the HHs covered under this survey comes under the BPL category.
- 2.5 Out of total survey HHs, all the HHs were engaged in cultivation, 230 HHs (95.8%) were engaged in allied activities, 16 HHs (6.7%) were engaged in service activities, and 76 HHs (31.7%) HHs were engaged in other activities.

3. Production and Productivity

- 3.1 Broadly, there type of millet crops, viz., *ragi/mandia*, *suan*, and *kangu* were cultivated by 147 HHs in 2017-18, the year before the phase 2 intervention of OMM in kharif 2018
- 3.2 Total millets were cultivated in an area of 42.8 ha with a production of 137 qtls such that the average production per hectare was 3.2 qtls/ha and the average production per millets cultivating HH was 0.9 qtls/HH. Likewise, the yield of *ragi* was 3.5 qtls/ha and 0.9 qtls/HH, the yield of *suan* was 3.1 qtls/ha and 0.5 qtls/HH and the yield of *kangu* was 2.5 qtls/ha and 0.7 qtls/HH.
- 3.3 From the total 137 qtls of millets production, the share of *ragi* was the highest (129 qtls, 94.1%) followed by *suan* (6.4 qtls) and *kangu* (1.3 qtls).
- 3.4 For *ragi* cultivation, a majority of HHs (84 HHs, 57.5%) had adopted line sowing/line transplantation (LS/LT) method, followed by broadcasting method (60 HHs, 41.1%), and

System for Millet Intensification (SMI) method (1 HH, 0.7 %) and use of more than one method by only one HH.

3.5 For *suani* cultivation out of 9 HHs, 8 HHs had adopted the broadcasting method and only 1 HH had adopted LT/LS method.

3.6 Out of total millet cultivated HH only 2 HH had cultivated *kangu* and two of them had adopted broadcasting method.

4. Consumption

4.1 From the 240 surveyed HHs, 191 HHs (79.6%) had consumed millets in the summer season, followed by 128 HHs (53.3 %) in winter season and 123 HHs (51.3%) in rainy season in 2017-18.

4.2 A majority of the HHs (190 HHs, 79.2%) had consumed millets during their breakfast followed by lunch (152 HHs, 63.3%), dinner (7 HHs, 2.9%), and evening snacks (3 HHs, 1.3%).

4.3 Out of 191 millet consuming HHs, 182 HHs (75.8 %) had consumed in the form of *porridge/Jau*, 154 HHs (64.2 %) had consumed as millet cake/bread (*Pitha*), 19 HHs (7.9 %) had consumed as *mandia torani*, 12 HHs (5.0 %) had consumed as *tampo*, and 12 HHs (5.0 %) had consumed as *roti*.

5. Processing and Marketing

5.1 Out of 240 surveyed HHs 191 HHs (79.6 %) had processed millets, among them 87 HHs (45.5 %) had processed millets manually by using *chaki* or locally known as *Ghurna/Ghurana*, 78 HHs (40.8 %) had used machines for the processing of millets and 24 HHs (12.6 %) had used both techniques for the processing of millets in 2017-18.

5.2 Out of total millet growing HHs, 23 HHs (9.6 %) had marketed their surplus in the year 2017-18. Among them, 10 HHs had marketed millets within the distance of 10 kms and 13 HHs had marketed within the distance of more than 11 and less than 20 kms.

5.3 From the total millets marketed HHs in 2017-18, 16 HHs had sold their surplus at the local market, 7 HHs had sold to middlemen/ local trader.

5.4

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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
DC ACS:	Development Commissioner cum Additional Chief Secretary
DAFE:	Development of Agriculture and Farmers Empowerment
DAFP:	Directorate of Agriculture and Food Production
FGD:	Focused Group Discussion
Ha:	Hectares
HHs:	Households
IAS:	Indian Administration Service
ICDS:	Integrated Child Development Scheme
JDA:	Joint Director of Agriculture
KG:	Kilogram
KM:	Kilometer
LT/LS:	Line Showing/ Line Transplanting
MDM:	Mid-day Mill
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
OMM:	Odisha Millet Mission
PDS:	Public Distribution System
SC:	Scheduled Caste
SEBC:	Socially and Educationally Backward Classes
SMI:	System for Millet Intensification
ST:	Scheduled Tribe
WASSAN:	Watershed Support Service and Activities Network

Chapter-1

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, & 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 (Haunget *al.*, 2016; ICRISAT, 2017) as millets can grow in hardy and drought conditions where major cereals fail to provide a sustainable yield (Hulseet *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 (hereafter Odisha Millets Mission, OMM) with a novel organizational structure¹ was initiated by the Government of Odisha in 2017-18 emphasizing production, consumption, processing, and marketing of millets. In 2017-18, the program was initiated in 30 blocks of seven districts namely Gajapati, Kalahandi, Kandhamal, Koraput, Malkangiri, Nuapada, and Rayagada. At the time of implementation of OMM, some of the millets cultivated in Odisha are *mandia/ragi* (finger millet), *suan/gurji* (little millet), *janha/jowar* (sorghum), *kangu* (foxtail millet), and *kodo* (kodo millet). In 2018-19, the phase-2 implementation of OMM was started in 7 districts (including 3 old districts included in phase 1) and 22 blocks. Kandhamal district is 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.

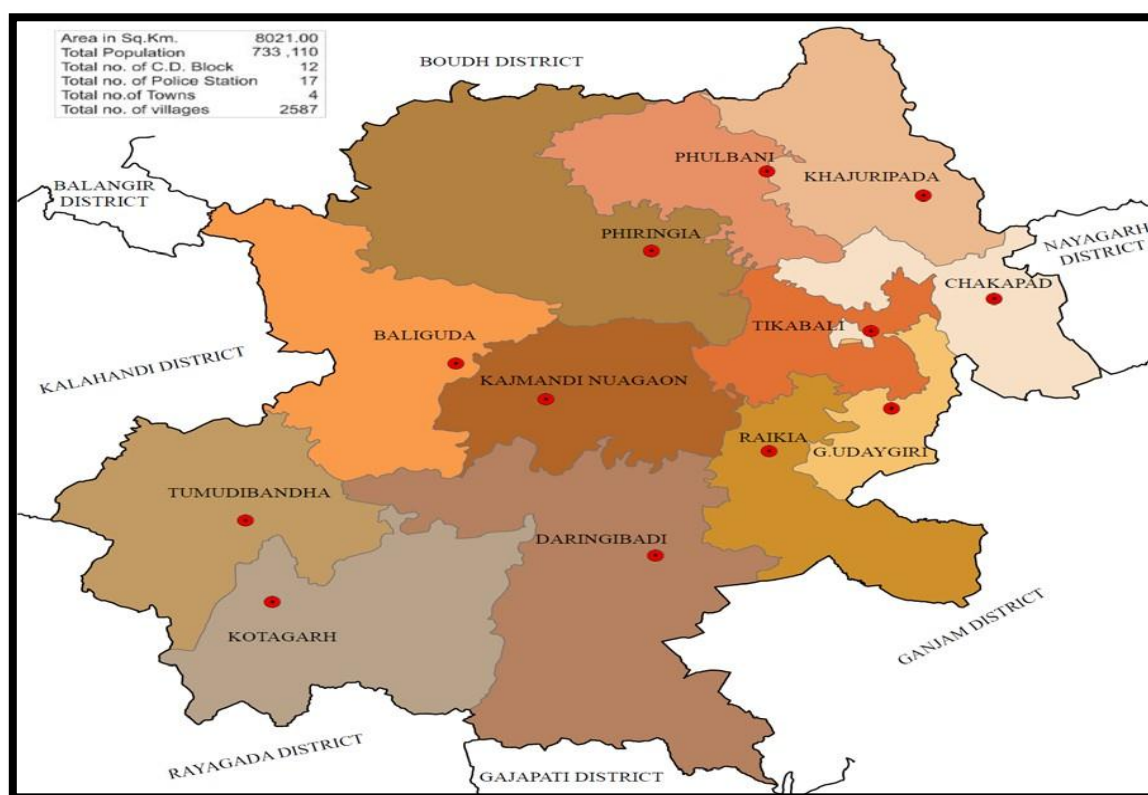
1.2 District Profile

Kandhamal revenue district came into an instance on 1st January 1994 after Phulbani district was divided into Kandhamal and Boudh district of Odisha. The district lies between 19 degrees 34' to 20 degrees 36' North Latitude and 83 degrees 34' to 84 degrees 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

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

important crops that have been cultivated during Kharif. Further, in the irrigated areas crops like potato, vegetable and mustard are cultivated.

Fig 1.1 Map of 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 as follows.

- 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.
- To examine the area and mode of marketing

Table 1.1: Key Indicators of Kandhamal District

Indicators	Value
Census 2011	
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 & 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 ('000 ha)	101.2
No. of Villages electrified (in No.)	1044
No. of banks (in No.)	09
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 Glance-2016	
Note: MANGERS is Mahatma Gandhi National Rural Employment Guarantee Scheme	

1.4 Methodology

1.4.1 Sample design

Kandhamal district is proposed by OMM to study on the promotion of Millets. The climatic condition is convenient for millet cultivation, for which Kandhamal district is selected for the survey. Out of twelve blocks, three blocks² have been surveyed for phase 2 such as Baliguda, K. Nuagaon and Tumudibandha considering 896 participant farmer HHs spread across 6 *grampanchayats*. From these, in the first stage sampling two *grampanchayats* were selected randomly from each block, in the second stage sampling two villages from each of the selected gram panchayat were selected. The third stage 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 is less than 15 then increase the number of non-participating households in the sample so that the total sample in the village is 20. With the above sample design 80 households have been surveyed from each block. From the 240 surveyed households, 67 were participant households and 173 were non-participant households. However, as the information pertained to 2017-18 when the programme was not implemented a common schedule was canvassed to all the surveyed households and the following analysis does not distinguish between the two categories of households.

Table 1.2 : HHs Surveyed in Kandhamal district

Block	Programme HHs (No.)	Surveyed HHs (No.)	Participant HHs 2018-19 (No.)	Non-Participant HHs 2018-19 (No.)
Baliguda	66	80	22	58
K. Nuagaon	381	80	20	60
Tumudibandha	449	80	25	55
Total	896	240	67	173

Source: Programme Secretariat and Field Survey

1.4.2 Data Collection

This baseline survey report is based on both secondary and primary data. The primary data was collected from the respondents in the concerned districts by using 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

² Four blocks namely Daringibadi, Kotagarh, Phiringia, and Raikia have already been covered up under the programme in phase 1.

millets. Focus Group Discussions (Annexure 2) were also conducted. The secondary data has been collected from different published and unpublished sources (that may be any statistical data or tables) and used specifically in the preparation of table 1.1.

In addition to the methodology, for better understanding here we provide a brief description on the total millets produced, processed, consumed and marketed during the year 2017-18, table 1.3. It is evident from the table that participation of non-participation farmer HHs in the production, processing, consumption, and marketing was more than the participant farmer HHs in 2017-18.

Table- 1.3 HHs wise information on production and utilization of millets (2017-18)

Block	Production		Consumption		Processing		Marketing	
	Particip ant HH	Non- Particip ant HH	Particip ant HH	Non- Particip ant HH	Particip ant HH	Non- Particip ant HH	Particip ant HH	Non- Particip ant HH
Baliguda	22	23	22	46	22	46	5	5
K. Nuagaon	17	21	17	40	17	40	1	3
Tumudiba ndha	24	40	24	42	24	42	5	4
Total	63	84	63	128	63	128	11	12

Source: Field Survey.

1.5. Limitation

Notwithstanding the outcomes the present study goes through several limitations. First, all HHs envisaged in the programme could not be surveyed for logistic reasons and other difficulties (like non-availability of respondents) faced by field investigators during data collection. Second, there is the possibility of recall error, particularly applicable in case of the actual quantity of consumption, expenditure, investment, and marketing among others. Third, information related to consumption, processing and marketing of millets is not complete which creates mismatch among number of HHs produced, consumed, processed, and marketed. Last, but not the least, there are instances where surveyed households have consumed millets, but have not produced or purchased it. 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. Chaptarisation

The baseline survey has been divided into six chapters including the current Chapter 1, which provided an introduction, district profile, objectives and study design. Chapter 2 provides the socio-economic profile of the surveyed HHs. Chapter 3 provides details on the production and productivity of millets. Chapter 4 discusses the consumption pattern of millets. Chapter 5 elucidates on processing and marketing of millets. Chapter 6 indicates the major findings and conclusion.

Chapter 2

Socio-economic Profile of Surveyed Households

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 205 HHs (85.4%) belong to Schedule Tribes (STs) category, 16 HHs (6.7%) belong to Schedule Caste (SCs) category, and 19 HHs (7.9%) belong to other social groups (OSG) category, table 2.1. In blocks, the proportion of ST was the highest in the Tumudibandha followed by Baliguda and K. Nuagaon.

Fig 2.1 Percentage Distribution of HHs by social groups

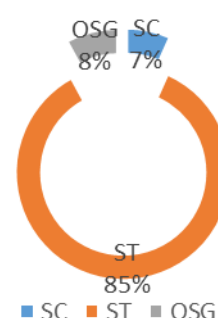


Table 2.1 Distribution of Households by Social Groups across blocks

Social category	Baliguda		K. Nuagaon		Tumudibandha		Total	
	No.	%	No.	%	No.	%	No.	%
SC	11	13.8	3	3.8	2	2.5	16	6.7
ST	68	85.0	60	75.0	77	96.3	205	85.4
OSG	1	1.2	17	21.3	1	1.2	19	7.9
Total	80	100.0	80	100.0	80	100.0	240	100.0

Source: Field Survey

Note: Other social Group (OSG) includes OBC, General and SEBC category

The surveyed HHs belongs to two religious communities such as Hindu-147 HHs (61.2%), and Christian-93 HHs (38.8%), table-2.2. The distribution of surveyed HHs by religion indicates that the proportion of Christian was the highest in the Baliguda block and the proportion of Hindu was the highest in the K. Nuagaon block.

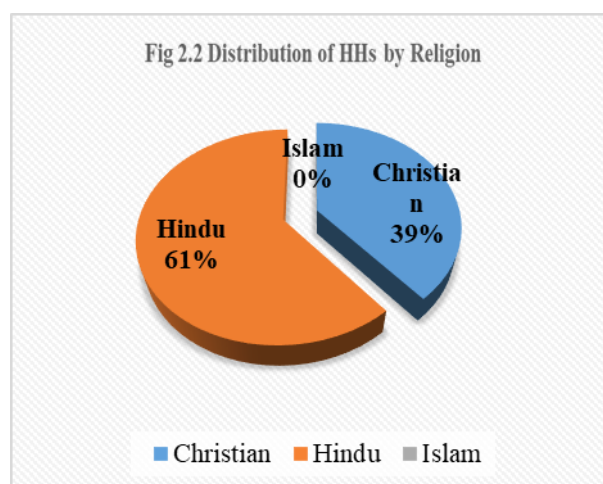


Table 2.2: Distribution of households by Religion across blocks

Religion	Baliguda		K. Nuagaon		Tumudibandha		Total	
	No.	%	No.	%	No.	%	No.	%
Christian	44	55.0	8	10.0	41	51.3	93	38.8
Hindu	36	45.0	72	90.0	39	48.7	147	61.2
Total	80	100.0	80	100.0	80	100.0	240	100.0

Source: Field Survey.

The total population of the surveyed HHs was 1131, table 2.3. The gender-wise distribution population of surveyed HHs shows that, out of total 1131 population, 565 were male and 566 were female which shows the equal gender distribution from the total population of the surveyed HHs.

Table 2.3: Distribution of Population by Gender across blocks

Gender	Baliguda		K. Nuagaon		Tumudibandha		Total	
	No.	%	No.	%	No.	%	No.	%
Male	185	50.3	175	49.6	205	50.0	565	50.0
Female	183	49.7	178	50.4	205	50.0	566	50.0
Total	368	100.0	353	100.0	410	100.0	1131	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 *antodaya* or priority cards are referred as BPL and those without these are referred as APL. It was evident from the baseline survey that all 240 HHs (100%) comes under the (Below Poverty Line) BPL category.

2.4 Economic Activities

Economic activities shows that all the surveyed HHs (240) were engaged in cultivation, 230 HHs (95.8%) were engaged in allied activities (which include agricultural labour, horticulture, minor forest produce collection and livestock rearing activities), 16 HHs (6.7 %) were engaged in service or salary based activities and 76 HHs (31.7 %) were engaged in others activities (which include old-age pension, remittance sent by the family relatives staying outside the home), table 2.5. Therefore, it can be concluded that cultivation was the major occupation of surveyed HHs in the 2017-18.

Table 2.5 Distribution of Households by Economic Activities across blocks

Economic Activities	Baliguda		K. Nuagaon		Tumudibandha		Total	
	No.	%	No.	%	No.	%	No	%
Cultivation	80	100.0	80	100.0	80	100.0	240	100.0
Allied Activities	76	95.0	75	93.8	79	98.8	230	95.8
Services	8	10.0	7	8.8	1	1.3	16	6.7
Others	24	30.0	29	36.3	23	28.8	76	31.7
Total	80	100.0	80	100.0	80	100.0	240	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 of HHs also helps in assessing their socio-economic condition. Table 2.6 and Fig 2.3 shows that 126 HHs (52.5%) had *kutcha* houses, 85 HHs (35.4%) had *semi-pucca* houses and only 29 HHs (12.1%) had access to *pucca* houses in 2017-18. The percentages of both *Pucca* and *kutcha* houses were the highest in the Baliguda block.

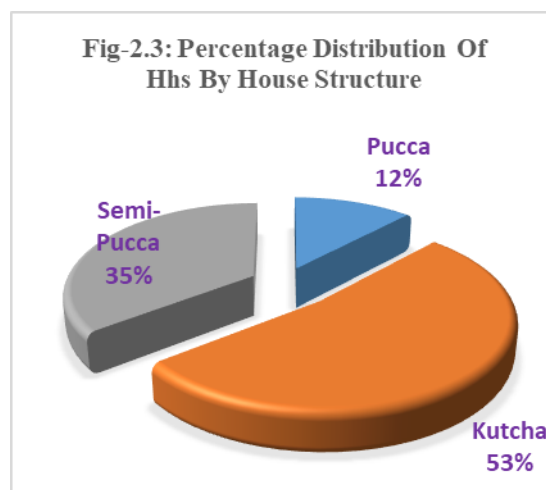


Table 2.6: Distribution of Households by Structure of House across blocks

House Structure	Baliguda		K. Nuagaon		Tumudibandha		Total	
	No.	%	No.	%	No.	%	No.	%
Pucca	10	12.5	11	13.8	8	10.0	29	12.1
Kutcha	48	60.0	38	47.5	40	50.0	126	52.5
Semi-Pucca	22	27.5	31	38.7	32	40.0	85	35.4
Total	80	100.0	80	100.0	80	100.0	240	100.0

Source: Field Survey.

2.6. Conclusion

The socio-economic profile indicates that the majority of the respondents were STs (85.4%) in social group, Hindu (61.2%) by religion, poor (100%) by economic status, and cultivators (100%) by economic activity. In all the blocks it was found that the percentage of male and female were around similar. Further, it was reported that a larger population reside in *kutacha* houses (52.5%). Next chapter looks into the aspects related to millets production across different surveyed blocks.

Chapter-3

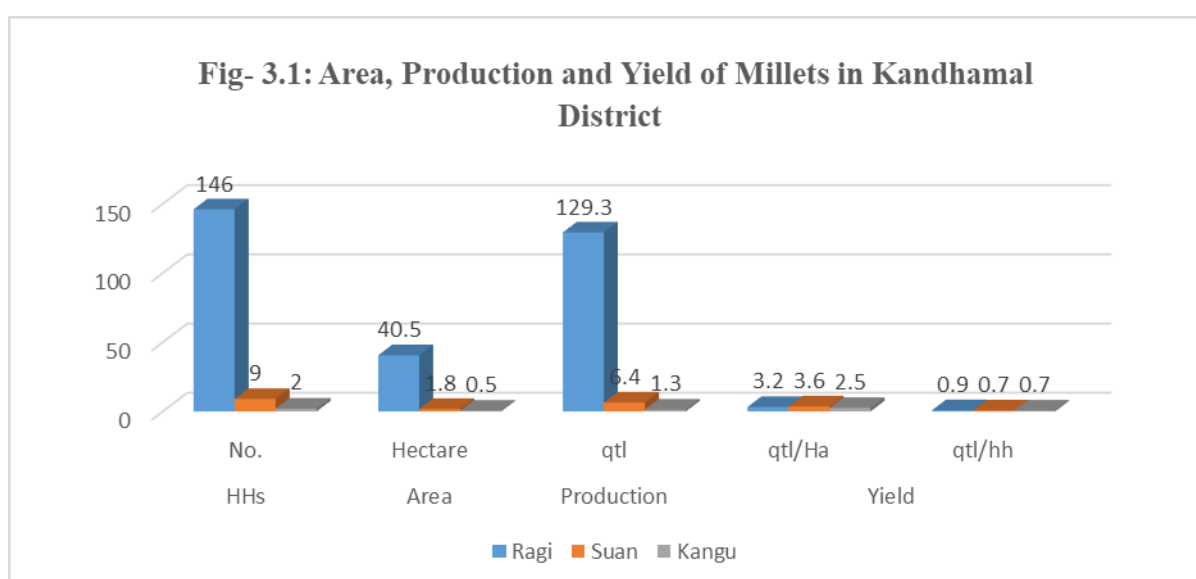
Production

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 baseline data of 2017-18 from HHs surveyed in Baliguda, K. Nuagaon and Tumudibandha blocks.

3.2. Area, Production, and Yield

Broadly, three types of millet crops viz. *ragi/mandia* (finger millet), *suani* (little millet), and *kangu* (foxtail millet) were cultivated by the surveyed HHs in 2017-18. Further it was found that, out of 240 surveyed HHs from three blocks only 147 HHs had cultivated millets in an area of 42.8 ha with a total production of millets of 137 qtls. Out of 147 millet growing HHs, 146 HHs had cultivated *mandia* in an area of 40.5 ha of land with production of 129.3 qtls, 9 HHs had cultivated *suani* in an area of 4.2 ha of land with a production of 6.4 qtls, and 2 HHs had cultivated *kangu* in an area of 1.2 ha of land with a production of 1.3 qtls (Table 3.1).



Note: Out of total Millet cultivating HHs 147 HH Cultivated millets.

With the above production in 2017-18, the yield of all millets was 3.2 qtls/ha and the average production of per millet cultivating HHs was 0.9 qtls/HH. From this, the yield of *mandia* was 3.2 qtls/ha and the average production per *mandia* cultivating HH was 0.9 qtls/HH. Likewise, the yield of *suani* was 3.6 qtls/ha and the average production per *suani*

cultivating HHs was 0.7 qtls/HHs. Further, the yield of *kangu* was found to be 2.5 qtls/ha and the average production per *kangu* cultivating HHs was 0.7 qtls/HH.

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

Millets	HHs		Area		Production		Yield	
	No.	%	Ha	%	qtls	%	qtls/ha	qtls/HH
Ragi	146	99.3	40.5	94.6	129.3	94.4	3.2	0.9
Suan	9	6.1	1.8	4.2	6.4	4.7	3.6	0.7
Kangu	2	1.4	0.5	1.2	1.3	0.9	2.5	0.7
Total	147	100.0	42.8	100.0	137	100.0	3.2	0.9

Source: Field Survey.

Note: The area and production figures are rounded up to the first decimal, and hence, may not add up to all values across crops and all blocks.

In the Baliguda block, total 45 HHs had cultivated two types of millets, viz., *mandia* and *suan* in an area of 11.6 ha of land with a production of 40 qtls; such that the yield of all millets was 3.5 qtls/ha and 0.9 qtls/HH. From the total millets cultivated area, *mandia* was cultivated in an area of 11.3 ha of land with a production of 39 qtls; such that the yield of *mandia* was 3.5 qtls/ha and 0.9 qtls/HH. Likewise, *suan* was cultivated by only 2 HHs in an area of 0.3 ha of land with a production of 1 qtls; such that the yield of *suan* was 3.1 qtls/ha and 0.5 qtls/HH. It can be concluded that in the Baliguda block, the proportion of *mandia* to all millets cultivation in terms of area, production and yield was the highest, table 3.2.

Table 3.2: Area, Production, and Yield of Millets in Baliguda block

Millets	HHs		Area		Production		Yield	
	No.	%	ha	%	qtls	%	qtls/ha	qtls/HH
Ragi	45	100.0	11.3	97.2	39	97.5	3.5	0.9
Suan	2	4.4	0.3	2.8	1	2.5	3.1	0.5
Total	45	100.0	11.6	100.0	40	100.0	3.5	0.9

Source: Field Survey.

Note: The area and production figures are rounded up to the first decimal, and hence, may not add up to all values across crops and blocks.

In K. Nuagaon block only one type of millet crop, viz., *mandia* was cultivated in the year 2017-18 by 38 HHs in an area of 29.7 ha of land with a production of 29.7 qtls; such that the yield of *mandia* was 3.1 qtls/ha and 0.8 qtls/HH.

In the Tumudibandha block, total 63 HHs had cultivated three types of millets, viz., *mandia*, *suan*, and *Kangu* in an area of 21.6 ha of land with a production of 67.3 qtls; such that the yield was 3.1 qtls/ha and 1.1 qtls/HH. From the total millets cultivated area, *mandia* was cultivated in an area of 19.6 ha of land with a production of 60.6 qtls; such that the yield

of *mandia* was 3.1 qtls/ha and 1.0 qtls/HH. *Suan* was cultivated by only 7 HHs in an area of 1.5 ha of land with a production of 5.4 qtls; such that the yield of *suan* was 3.7 qtls/ha and 0.8 qtls/HH. Likewise, *kangu* was cultivated by only 2 HHs in an area of 0.5 ha of land with a production of 1.3 qtls; such that the yield of *kangu* was 2.5 qtls/ha and 0.7 qtls/HH. It can be concluded that, in the Tumudibandha block, the proportion of *mandia* to all millets cultivation in terms of area, production and yield was the highest, table 3.4.

Table 3.3: Area, Production, and Yield of Millets in Tumudibandha block

Millets	HHs		Area		Production		Yield	
	No.	%	Ha	%	qtls	%	qtls/ha	qtls/HH
Ragi	63	98.4	19.6	90.9	60.6	90.0	3.1	1.0
Suan	7	10.9	1.5	6.7	5.4	8.1	3.7	0.8
Kangu	2	3.1	0.5	2.4	1.3	1.9	2.5	0.7
Total	64	100.0	21.6	100.0	67.3	100.0	3.1	1.1

Source: Field Survey.

Note: The area and production figures are rounded up to the first decimal, and hence, may not add up to all values across crops and blocks

3.3. Perception of Quality of Seeds Used

Quality of seed is one of the determinants of production, yield, and quantity of millet. On that score questions were envisaged to collect the information on the perception from millet cultivating HHs on the quality of seeds used. A three point scale was developed to measure the seed quality viz. good, average, and bad. From the surveyed HHs, 70.1 % (103 HHs) opines that the quality of seeds used by them was good followed by average 29.9 % (44 HHs). No HH opined for bad quality of seed, table 3.5.

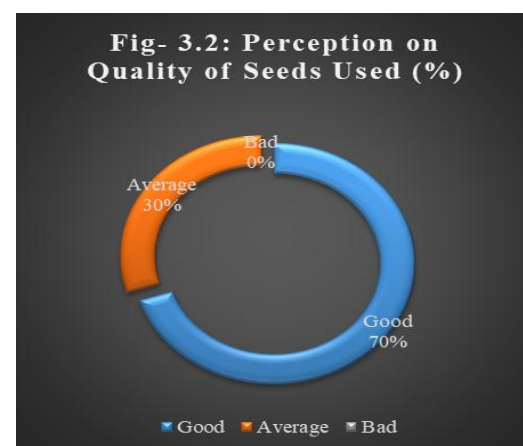


Table 3.4: Perception of Respondents on Quality of Seeds used

Block	Good		Average		Total	
	No.	%	No.	%	No.	%
Baliguda	27	60	18	40	45	30.6
K. Nuagaon	27	71.1	11	28.9	38	25.9
Tumudibandha	49	76.6	15	23.4	64	43.5
Total	103	70.1	44	29.9	147	100

Source: Field Survey.

3.4. Package of Practices

The different agronomic practices (broadcasting, line showing/line transplanting, and SMI) used by the surveyed HHs for *mandia* cultivation in the year 2017-18 are presented in table 3.6. From the total 146 *mandia* cultivating HHs, 60 HHs had adopted broadcasting method in an area of 16.7 ha with a production of 48.3 qtls and yield was 2.9 qtls/ha, 84 HHs had adopted LT/LS method in an area of 22.7 ha with a production of 78.1 qtls and yield was 3.4 qtls/ha, and only one HH had used SMI method in an area of 0.4 ha with a production of 1.5 qtls/ha and yield of 1.2 qtls/ha. Further, the use of multiple methods by one HH in an area of 0.8 ha and a production of 1.5 qtls was also evident. From this analysis it was inferred that though *mandia* was cultivated using SMI method in a comparatively smaller area than other methods, the yield rate was found to be more for the HHs who had adopted SMI. Moreover, from the group discussion it was found that HHs were aware of importance of SMI method also interested to adopt but due to lack of manpower they were not using.

Table 3.5: Package of Practices for *Mandia* Cultivation in Kandhamal District

Package of Practice	HHs		Area		Production		Yield
	No.	%	Ha	%	qtls	%	qtls/Ha
Broadcasting	60	41.1	16.7	41.1	48.3	37.3	2.9
LT/LS	84	57.5	22.7	55.9	78.1	60.4	3.4
SMI	1	0.7	0.4	1.0	1.5	1.2	3.8
One Plus methods	1	0.7	0.8	2.0	1.5	1.2	1.9
Total	146	100.0	40.5	100.0	129.4	100.0	3.2

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

From the total 9 *suau* cultivating HHs, 8 HHs had adopted broadcasting method in an area of 1.7 ha with a production of 5.9 qtls and yield was 3.5 qtls/ha, and only 1 HHs had adopted LT/LS method in an area of 0.1 ha with a production of 0.5 qtls and the yield was 5 qtls/ha, table 3.7.

Table 3.6: Package of Practices for *SUAN* Cultivation in Kandhamal District

Package of Practice	HHs		Area		Production		Yield
	No.	%	Ha	%	Qtls	%	qtls/ha
Broadcasting	8	88.9	1.7	94.4	5.9	92.2	3.5
LT/LS	1	11.1	0.1	5.6	0.5	7.8	5.0
Total	9	100.0	1.8	100.0	6.4	100.0	3.6

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

Further, it was found that only two HHs had cultivated Kangu adopting broadcasting method in an area of 0.5 ha with a production of 1.3 qtls/ha, such that the yield was 2.6 qtls/ha..

3.5. Conclusion

Three types of millets such as *ragi*, *suan* and *kangu* millets usually grown in Kandhamal during the period covered under baseline survey, 2017-18. The predominant crop was *ragi*. The majority of the HHs (70.1%) perceived that the quality of seeds used by them was good. In terms of use of agronomic practices, most of the HHs had cultivated millets adopting broadcasting and line sowing or transplantation method. Only 1 HHs had adopted the SMI method in Kandhamal for the period covered under the baseline survey in the surveyed blocks. In the next chapter we discuss the consumption of millets.

Chapter – 4

Consumption

4.1 Introduction

Millets are the staple food of tribal communities. With the change of time, consumption of millets has been decreased in these regions for the last two-three decades. 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 surveyed

4.2. Season-wise Consumption of Millets

From the surveyed HHs, it was found that a total of 191 HHs (79.6%) had consumed millets in 2017-18, base year. Across different seasons, it was found that a majority of HHs had consumed during summer (191 HHs, 79.6%) followed by winter (129 HHs, 53.8%), and rainy season (124 HHs, 51.7%), table 4.1.

Table 4.1: Season-wise Consumption of Millets

Food Pattern	Baliguda		K. Nuagaon		Tumudibandha		Total	
	No.	%	No.	%	No.	%	No.	%
Summer	68	85.0	57	71.3	66	82.5	191	79.6
Rainy	41	51.3	27	33.8	56	70.0	124	51.7
Winter	37	46.3	32	40.0	60	75.0	129	53.8
Total HH Consumed Millets	68	28.3	57	23.8	66	27.5	191	79.6
Total HH not Consumed Millets	12	15.0	23	28.8	14	17.5	49	20.4

Source: Field Survey.

Note: Column totals are not additions across seasons, as a household can consume millets in all seasons.

4.3. Consumption of Millets during different Meals of the Day

Consumption of millets by HHs during different meals of a day reveals that 79.2 % had consumed in breakfast, 63.3% in lunch, 2.9% in dinner and 1.3% in evening snacks, table 4.2.

Table 4.2: Millets Consumption during different Meals of the Day

Food Pattern	Baliguda		K. Nuagaon		Tumudibandha		Total	
	No.	%	No.	%	No.	%	No.	%
Breakfast	68	85.0	56	70.0	66	82.5	190	79.2
Lunch	48	60.0	44	55.0	60	75.0	152	63.3
Evening Snacks	3	3.8	0	0.0	0	0.0	3	1.3
Dinner	4	5.0	0	0.0	3	3.8	7	2.9
Missing Items	0	0.0	1	1.3	0	0.0	1	0.4
Total HH consumed Millets	68	28.3	57	23.8	66	27.5	191	79.6
Total HH not consumed Millets	12	15.0	23	28.8	14	17.5	49	20.4

Source: Field Survey.

Note: Column totals are not additions across seasons, as a household can consume millets in all seasons.

4.4. Consumption of Different Millet Recipes

From this baseline study it was found that People were consuming millets in several ways in the form of *jau*, *Pitha*, *Khiri*, *Ruti* and beverage among others. Table 4.3 shows that 182 HHs (75.8 %) had consumed millets as porridge locally called *jau* or ‘*mandia jau*’ (ragi porridge), 152 HHs (64.2 %) had consumed millets in the form of cake or bread or *pitha*. Another recipe of millets known as *Mandia Torani* which is prepared with *ragi* powered and rice. 19 HHs (7.9 %) had consumed that. 12 HHs (5.0 %) had consumed millets in the form of *tampo*, a semi-liquid recipe prepared by adding sugar, jaggery, coconut chips, etc. and 12 HHs (5.0 %) had consumed millets in the form of *roti*, table-4.3.

Table 4.3: Consumption of Millets Recipes

Food Pattern	Baliguda		K. Nuagaon		Tumudibandha		Total	
	No.	%	No.	%	No.	%	No.	%
Jau	66	82.5	51	63.8	65	81.3	182	75.8
Tampo	5	6.3	6	7.5	1	1.3	12	5.0
Pitha	55	68.8	36	45.0	63	78.8	154	64.2
MandiaTorani	7	8.8	8	10.0	4	5.0	19	7.9
Roti	7	8.8	0	0.0	5	6.3	12	5.0
Missing Items	1	1.3	6	7.5	1	1.3	8	3.3
Total HH consumed Millets	68	28.3	57	23.8	66	27.5	191	79.6
Total HH not consumed Millets	12	15.0	23	28.8	14	17.5	49	20.4

Source: Field Survey.

Note: column totals are not additions across seasons, as a household can consume millets in all seasons.

4.5. Conclusion

The consumption of millets was found to be more in summer season. Most of the surveyed HHs had consumed millets in their breakfast and *Mandia Jau* was the predominant millet recipe among the surveyed HHs in the year 2017-18.

Chapter – 5

Processing and Marketing

5.1 Introduction

This chapter looks into various aspects of processing (viz, mode of processing, accessibility for processing) and marketing (viz, distance of access t market and mode of selling) of millets carried out in 2017-18, the year before the intervention of OMM.

5.2 Processing Units

Traditionally people usually prefer to process millets manually by using *Ckaki* or *Ghurna*, but nowadays due to technological innovation people get accessibility of machines for the processing millets in the locality of rural areas which helps them to reduce the time and manpower. Now-a-days, people prefer both the mode of processing of millets like manual and also machinery according to easy availability in the locality. From the surveyed HHs, total 191 HHs had processed millets in 2017-18; even though total 147 HHs had cultivated. From the 191 HHs who had processed, 87 HHs (45.5%) had processed manually, 78 HHs (40.8%) had processed using machine, and 12.6 % HHs had preferred both modes of processing of millets in 2017-18, table 5.1.

Table 5.1: Method of Processing of Millets

Processing	Baliguda		K. Nuagaon		Tumudibandha		Total	
	No.	%	No.	%	No.	%	No.	%
Manually	26	38.2	32	56.1	31	47.0	87	45.5
Machine	30	44.1	20	35.1	28	42.4	78	40.8
Both	12	17.6	5	8.8	7	10.6	24	12.6
Total HH proceesed Millets	68	85.0	57	71.3	66	82.5	191	79.6
Total HH not Processed Millets	12	15.0	23	28.8	14	17.5	49	20.4

Source: Field Survey

5.3 Marketing

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. The present report analysis this aspect in view of accessibility (measured in terms of distance to the market from their village) and mode of selling (measured in terms of different selling point available for the HHs).

5.3.1 Accessibility of Market

Most of the millets cultivated HHs had sold their surplus in the nearby market. It was reported that 23 HHs (9.6%) had marketed millets in 2017-18. Among them, 10 HHs had sold their surplus within the radius of 0-10 km distance, 13 HHs had sold within the distance between 11-20 Km, table 5.2. From the FGD, it was evident that due to poor connectivity in terms of transportation and lack of knowledge about the market, they were forced to sell at lower prices.

Table 5.2: Distance to Access Market to sell Millets

Processing	Baliguda		K. Nuagaon		Tumudibandha		Total	
	No.	%	No.	%	No.	%	No.	%
0-10 KM	1	10.0	2	50.0	6	66.7	10	43.5
11-20 KM	9	90.0	2	50.0	3	33.3	13	56.5
Total HH marketed Millets	10	12.5	4	5.0	9	11.3	23	9.6
Total HH not marketed Millets	70	87.5	76	95.0	71	88.8	217	90.4

Source: Field Survey.

Note: The columns totals are not additions across mode of selling millets, as a household can sell in multiple ways.

5.3.2 Selling of Millets Different Market Agencies.

It was reported that among the millets marketed HHs, a majority (16 HHs) had sold in the market followed by middle men or local trader (7 HHs), table 5.3.

Table 5.3: Distribution of HHs by Mode of Selling Millets across blocks

Processing	Baliguda		K. Nuagaon		Tumudibandha		Total	
	No.	%	No.	%	No.	%	No.	%
Middle-men/Local Trader	2	20.0	1	25.0	4	44.4	7	30.4
Market	8	80.0	3	75.0	5	55.6	16	69.6
Total HH marketed Millets	10	12.5	4	5.0	9	11.3	23	9.6
Total HH not marketed Millets	70	87.5	76	95.0	71	88.8	217	90.4

Source: Field Survey.

5.4 Conclusion

It was evident from the baseline study that a majority of the HHs had processed millets manually and sold their surplus in nearby markets within a radius of 10 km. Further, they had sold at the lower prices due to non-availability of transportation facility.

Chapter - 6

Major Findings

- The socio-economic profile indicates that the majority of the respondents were STs (85.4%) in social group, Hindu (61.2%) by religion, poor (100%) by economic status, and cultivators (100%) by economic activity. In all the blocks it was found that the percentage of male and female were around similar and a majority were residing in *kutchha* houses.
- Three types of millets such as *ragi*, *suan* and *kangu* millets usually grown in Kandhamal during the period covered under baseline survey, 2017-18 in an area of 42.8 ha with a production of 137 qtls such that the average production per hectare was 3.2 qtls/ha and the average production per millet cultivating HH was 0.9 qtls/HH. Most of the HHs had adopted broadcasting and LT/LS method as the agronomic practices. Only one HH each had used SMI method.
- The consumption of millets was found to be more in summer season. Most of the surveyed HHs had consumed millets in their breakfast and *Mandia Jau* was the predominant millet recipe among the surveyed HHs in the year 2017-18.
- It was evident from the baseline study that a majority of the HHs had processed millets manually and sold their surplus in nearby markets within a radius of 10 km. Further, they had sold at the lower prices due to non-availability of transportation facility.

Annexure-1



Confidential for Research Purpose Only

**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/Kutchra/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) Encroached _____
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 Pesticides: Organic/Chemical/Both

8. Production and Utilization of Millets (2017-18)

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-wise Average Requirement/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

[illegible]

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 2017-May 2018):

(Area in Acre, Production in Quintal)

Sl.No	Name of the Crop	SMI		Line Transplanting		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**

Annexure- 2

Phase II Baseline Study Focused Grouped Discussion

Date:
Name of the Village:
Name of the Block:
Name of the District:
Stratification: Ethnicity/caste/gender
Sex:
Number of Individuals:
Number of Children:
Verbal consent obtained: yes/no
Researcher's name and observation:

Participant's name	Age	Sex	Education	Job	Notes
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					

[For the benefit of the enumerator: the focused group discussion aims to capture the millet related activities before OMM intervention in the community. Thus, the focus of the discussion may attempt to capture the existing production activities, whether millet as a crop is being produced, processed, consumed and marketed in the locality.]

Discussion points

- How many HH are there in the village/hamlet? Economic status, Social and religious composition, education, health status et al.
- Please give a brief description of the basic amenities available in the village. (For example, water sources, drinking water facilities, electricity, AWC, primary school, health care facilities, market place, transport facilities, etc.)
- What are the primary livelihood activities practiced in the village?
- What are the major activities around the farm that you undertake? (Sowing, reaping, processing, weeding, storage practices). Who generally does what?
- Give a brief description of types of land, irrigation facilities, major crops produced, preservation of seeds/procurement of seeds, agriculture-related government programmes, processing of produced crops, marketing of agricultural goods, etc.
- Is millet production a part of agriculture practice in the village? How many HH cultivate millets in the village? Please elaborate on the cultivation process.
- What are the common food consumption practices in the village? (also probe: include episodically consumed food/status food, festivities and feasts, death and mourning, a food offering to God)
- Is millet consumed in the locality? Source, how frequently, in what form, the reason for consumption)
- Are you aware of the nutrient benefits of millets? Elaborate.