BASELINE SURVEY: PHASE VII

BHADRAK 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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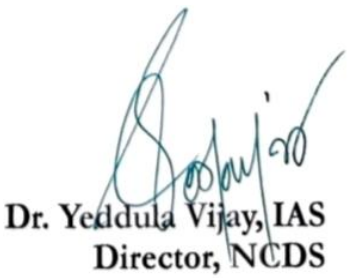
FOREWORD

Sustainable Development Goal 2 seeks to end hunger, achieve food security, improve nutrition, and promote sustainable agriculture. Millets offer a promising solution to help accomplish these objectives. The Shree Anna Abhiyan (SAA) is a great initiative of Odisha government that shows the state's commitment to reviving the cultivation of millets that are not only climate-resilient but has significant implications on health and nutrition of people. The programme has brought different stakeholders to work together to reinstate the significance of millets in Odisha's agricultural landscape. I am delighted to have the opportunity to write this foreword for the 'Special Programme for Promotion of Millets in Odisha.'

The SAA programme has emerged from a consultation with diverse array of stakeholders including NCDS. A memorandum of understanding (MoU) was signed on February 27, 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 designated blocks of the SAA. These surveys, designed to provide a situational analysis of the status of millet production, marketing, consumption, represent a critical step towards informed intervention and strategic decision-making. The findings of the baseline survey presented in the report would provide a situational analysis of the current status of the millet at the time of survey and a reference point to analyse the impact of intervention.

As the Director, I commend all the dedicated team members of NCDS for their unwavering commitment and tireless efforts in achieving the objectives of the SAA. Your hard work and perseverance have played a crucial role in turning our shared vision into reality. I also extend my heartfelt gratitude to our partners, stakeholders, and collaborators for their invaluable support and steadfast dedication in this direction.



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 VII, 2023". 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 Choudhury, 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) Additional Secretary to the Government, Planning and Convergence Department, Government of Odisha, and 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 also wish to acknowledge the contributions of Dr. Biswabas Patra and Dr. (Ms.) Rashmi Misra 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 Bhadrak district, the Scheme Officer, District Programme Coordinator, Block Coordinators, and other block-level officials for their invaluable support in providing crucial information. 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, SAA

EXECUTIVE SUMMARY

Bhadrak district is one among the 17 districts where the 'Special Programme for the Promotion of Millets in Odisha or (hereafter) Shree Anna Abhiyan (SAA)' Phase VII has begun in the Kharif 2022 in Banth block. In the block, total 571 target households are identified as programme households under Phase VII. Out of these, 80 households were selected through the random sampling method and conducted the Baseline Survey, 2023. As found in the Baseline Survey, a majority of the sample households of the Banth block belong to the Other Backward Class (41.25 per cent), followed by the Other Categories (33.75 per cent). Out of the total, the Scheduled Caste and Scheduled Tribe sample population constitute 22.5 per cent and 2.5 per cent respectively.

The survey reveals that out of total population of 400, 54.75 per cent of them are male and 45.45 per cent of them are female. Hindu is the dominant religion in this area. Out of the 80 sample households, significant majority HHs i.e., 96.25 per cent households possess ration card. It is also found that out of the total 29.5 percent are farmers out of the total population of 400 persons. The percentage of Housewife was 20.25 per cent while only 5 per cent worked as a labourer and 5 per cent working in private sectors, and 1.5 percent working in Govt. Sector. Majority of HHs reported that they have Pucca houses which constitute about 41.25 percent. The study reveals that 5 sample households (6.25 percent) were cultivated millets, covering a total area of 2.9 acres with 18.00 Qtls. as total production. All the millets cultivating households used their own seeds. Out of the total millets cultivating households, 40 percent used Line Transplantation (LT) and 60 percent of HHs used broadcasting methods for their cultivation. It is also revealed that the yield rate of Mandia production in Kharif season is 6.21 Qtls. / Acre. With respect to the pattern of millets consumption in Banth block, it is found that nearly 41.5 per cent households consume millets on a day to day basis. As observed, all samples HHs (100 percent) consume millets during summer seasons, which is the highest. During winter and rainy season, the consumption percentage is 85.71 per cent and 21.42 percent respectively.

Another significant observation is that consumption of millets by HHs during different meals of the day reveals that all HHs consume millets in their breakfast. Most famous millet recipes are *Pitha/ Tampo* followed by *Jau/ Torani* in the study areas which constitute 70.37 per cent 62.96 per cent respectively. It is found that 5 HHs (6.25 percent) out of 80 samples HHs are processing millets and only 1 HH (20 per cent) sales his surplus produce. Further, it is also found that not a single sample HH experienced distress sale.

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Abbreviations

AAO	: Assistant Agriculture Officer
AL	: Agricultural Labour
ATMA	: Agricultural Technology Management Agency
AWC	: Anganwadi Centre
CBOs	: Community Based Organisation
CCD	: Centre for Community Development
CRPs	: Cluster Resource persons
CSOs	: Civil Society Organisations
DAFP	: Directorate of Agriculture and Food Production
DDA	: Deputy Director, Agriculture
FA	: Facilitating Agencies
FGD	: Focused Group Discussion
FPC	: Farmer Producer Company
FPO	: Farmer Producer Organizations
GP	: Gram Panchayat
FAQ	: Fair Average Quality
Ha	: Hectares
HHs	: Households
ICDS	: Integrated Child Development Scheme
ITI	: Industrial Training Institute
LS	: Line Sowing
LT	: Line Transplanting
MDM	: Mid-Day Meal
MFP	: Minor Forest Produce
MGNREGA	: Mahatma Gandhi National Rural Employment Guarantee Act
MGNREGS	: Mahatma Gandhi National Rural Employment Guarantee Scheme
MSP	: Minimum Support Price
NCDS	: Nabakrushna Choudhury Centre for Development Studies
OBC	: Other Backward Classes
OMM	: Odisha Millet Mission
PDS	: Public Distribution System
SC	: Scheduled Castes
SMI	: System of Millet Intensification
ST	: Schedule Tribes
WASSAN	: Watershed Support Service and Activities Network
SAA	: Shree Anna Abhiyan

Chapter I

INTRODUCTION

1.1 Introduction

Millets have been a staple food for millions of people in India for centuries, especially in the central tribal belts. They are drought-resistant, highly nutritious, and can be cultivated in a wide range of soil and climatic conditions. Millets are also low in Glycemic Index and gluten-free, making them an ideal choice for people with various health conditions. In recent times, there has been a shift of interest from other crops to millets cultivation due to its numerous health benefits and its potential to address food security challenges in the country. The Government of India has been promoting the cultivation of millets as part of its efforts to increase the income of farmers, reduce dependency on water-intensive crops like rice, and promote sustainable agriculture. In this context, it is essential to understand the significance of millets cultivation and its associated challenges and opportunities.

Millets are small round whole cereal grain belongs to the Poaceae family, commonly known as the grass family, and grown in India, Nigeria, and other Asian and African countries. It is considered an ancient grain, used both for human consumption and livestock. It is also used as bird feed. Millets have multiple advantages over other crops, including drought and pest resistance. It's also able to survive in harsh environments and less fertile soil. These benefits stem from its genetic composition and physical structure for example, its small size and hardness. This crop is also divided into two categories, major and minor millets, with major millets being the most popular or commonly cultivated varieties. Major millets include: pearl, foxtail, proso (or white), finger (or ragi) and Minor millets include Kodo, barnyard, little, Guinea, brown top, fonio, adlay (or Job's tears). Like most cereals, millet is starchy grain rich in carbs. Notably, it also packs several vitamins and minerals. Therefore, it may have multiple health benefits. In the state of Odisha, millets have always been an integral part of the traditional diet and have been cultivated for centuries, primarily among the tribal population. But in last couple of decades, the popularity of millets has been declined due to the increasing demand of fast foods and modern food habits.

To address the importance of millet as staple food and its nutritional value, the Government of Odisha has taken several initiatives to promote the cultivation of millets. In this connection the Special Programme for Promotion of Millets in Odisha (also known as Shree Anna Abhiyan was initiated by the Government of Odisha in 2017-18 emphasising production, consumption, processing, and marketing of millets. The main objective of the programme was to increase production, consumption,

processing, and marketing of millets in tribal areas. The Shree Anna Abhiyan tried to revive these nutrient-rich millets in the agricultural landscapes. The program had a unique structure that emphasized cultivating traditional millets such as Ragi, Gurji, Kosla (small millets), Kodo, Kangu (foxtail millets), and Jowars. In 2022, the baseline survey, phase VII is conducted in 17 districts, including Bhadrak district, which aims to provide information on the various dimensions of the SAA in the district.

1.2 District Profile

Bhadrak district is one of the centrally located districts in Odisha. Bhadrak district is as abundant of Forest area that contributed 3.90 per cent of the total geographical area of the district. This district is bounded by Balasore district in the north, Jajpur district and river Baitarani is in the south, Keonjhar district is in the west and Bay of Bengal and Kendrapara district is in the east. Bhadrak subdivision of the undivided Balasore district became a new district on April 1, 1993 vide Government in Revenue Department Notification No. DRC 44/93.14218/R dated 27th March 1993. It lies between 86 o16' to 87o 0' East longitude and between 20^{o} 43' to 21 o 13' North latitude. It is bounded by the Keonjhar district in north, Cuttack district in south, Jajpur district in the east an Angul district in the west.

Administration of Bhadrak town is the Divisional headquarter of Bhadrak District. For administrative purpose the district has been divided into one Sub Division, 7 Tehsils (Basudevpur, Banta, Bhadrak, Chandbali, Dhamnagar, Tihidi and Bhandari Pokhari) and 7 CD Blocks. The district accounts for 1.61 percent of the state territory and shares 3.59 percent of the state population. The density of population of the district is 601 per Sq. Kms. as against 270 persons per Sq. Km of the State. It has 1312 villages (including 62 un-inhabited villages) covering 7 blocks, 7 Tehsils and 1 Sub-division. As per the Census 2011, the schedule caste population is 334896 (22.2 per cent) and schedule tribe population 30428 (2.0 per cent). The literacy percentage of the district covers 82.8 against72.9 of the state.

1.2.1 Geography and Topography

This district is divided into three zones according to its soil condition a. Saline Soil b. Alluvial Soil and c. Sandy Soil. This district is naturally divided into two well designed tracks. The salt tracks along the coasts which is not arable and the arable track, which is called the granary of the state. As per the agro climatic condition of the district the areas may be divided into four zones. a) Rain fed Zone; b) Perennial irrigated Zone, c) Flooded Zone d) Saline Zone.

Table 1.1: Socio-economic and Demographic Features of Bhadrak District	
Indicators	**Value**
Population (in Lakh.) (As per Census 2011)	1506337
Male (in Lakh.)	7,60,260
Female (in Lakh.)	7,46,077
Scheduled Castes (in Lakh.)	334896
Scheduled Tribes (in Lakh.)	30428
Others (in Lakh.)	3.60
Total Households (in Lakh.)	3,05,775
Average HH Size (in Nos.)	4.50
Sex Ratio	981
Workers	
Total Worker (in Lakh)	4,68,599
Main (in Lakh)	3,28,097
Marginal (in Lakh)	3,28,097
Non-Worker (in Lakh)	10,37,738
Work Participation Rate (WPR)	50.03
Literacy Rate	82.8
Land Use Pattern 2018-19 (Area in Hectares)	
Total Geographical Area (sq.km.)	270164
Forest (sq.km.)	133
Land Put to Non-Agricultural Use	26560
Barren and Non-Cultivatable Land	899
Permanent Pasture and Other Agricultural Land	11020
Net Area Sown	174063
Cultivable waste Land	11363
Old Fallow	4834
Current Fallows	6974
Misc. Trees and Groves	3092
Average Fertilizer Consumption per ha (in kg/ha)	133.62
Agriculture 2018-19*	
Total Production of Major Crops (In'000MT)	18.13
Total Ragi Production (in'000MT)	0
Irrigation Potential Created 2017-18* (Area in '000 Hectares)	
Kharif	24.45
Rabi	11.43
Other Information	
No. of Village Electrified (as on 31.03.21)	1242
No. of AWC	357
No. of PDS centres (2011)	790
No. of Job Card Issued (since inception in Lakh)	1.89
Kisan Credit Card (Households)	72679
Source: Census 2011 and Odisha Agriculture Statistics 2018-19	

The district is situated between Balasore in the north, Jajpur and Kendrapara in the south. It also extends in the west up to Keonjhar district and in the east up to the Bay of Bengal. The headquarter Bhadrak town is situated 125 km away from the state capital, Bhubaneswar. The geographical area of the district is 2505 Sq.km.

1.2.2 The Economy

Economy of Bhadrak District is hugely dependent on agriculture and allied activities as agriculture is the main income of the district. But many people in the sea coast area (Dhamara, Chudamani of Basudevpur and Chandabali area of Chandabali Block) depend on fishing. Thus, it is another sector that contributes to the economy of Bhadrak District. Paddy is grown as the main crop in Kharif, which constitutes around 94 percent of the total cultivable area. During Kharif season about 47 percent of cultivable area is rain fed and likely to remain exposed to the gambling monsoon and natural calamity. Around 9 percent of the total cultivable area is up-land, 36 percent is medium land and 55 percent is low land.

However, growth and trend of the only large-scale unit in the district is producing high quality charge chrome and carbon chrome in the country. The unit even exports its product to many other countries of the world. Now this unit is also in the job of installing two units of power plants in the district and working towards the expansion of the unit also. The newly built Dhamara Port (A joint venture between L&T and TATA Steel) in the district will also give a boost to the industrial scenario of the state as well as to the district.

1.2.3 The Administrative Structure

For administrative convenience, the present district is having 1sub-division, 7 Tehsils, 7 C.D. Blocks, 3 Towns including Census town, one Municipality, two NAC, 15 police stations, 193 Gram Panchayats, 7 Fire Stations and 5 nos. of Assembly Constituencies. Out of 1311 Villages, 1243 are inhabited and 68 are uninhabited. Bhadrak is having only 1.61 per cent area of the state. The total population of the district is 15, 06,337 as per 2011 census which is 3.59 per cent of the total population of the state. A decadal growth of 12.9 per cent is estimated for the district. Out of the total population, 7, 60,260 are males and 7, 46,077 are females.

As per 2011 census the district has only1, 85,838 of urban population which constitutes only 12.34 per cent of the total district population and the rural population constitutes 87.66 per cent of the total population. The density of population is 601 per sq km. The sex ratio in the district is 981 against 985

in the year 1991. The literacy rate in the district is 82.8 per cent out of which male is 89.65 per cent and female literacy is 75.85 per cent. The percentage of SC/ST population in the district is 22.2 per cent and 2.0 per cent respectively as per 2011 census.

1.3 Objectives

The baseline survey was conducted to obtain information on proposed interventions under Shree Anna Abhiyan for production, consumption, processing and marketing of millets. The objectives are:

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

1.4 Methodology

1.4.1 Sample Design

The baseline survey was conducted to obtain information on proposed interventions under Shree Anna Abhiyan for production, consumption, processing, and marketing of millets.

1.4.2 Data Collection, Compilation and Analysis

A total of four villages were selected from one block, where two Gram Panchayats across the blocks were selected for data collection in the Bhadrak district for the Baseline Survey of 2023, Phase VII. 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 VII across the blocks of the district. Two Gram Panchayats were randomly selected from the block, and two villages were selected from each of the 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) 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 Census 2011 Reports, Odisha Agricultural Statistics, and so on. 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.

Table 1.2: Sample Households in Banth Block, Bhadrak District

Block	Total Programme Households (N)	Total Sample Households for the Study (N)	% HHs Covered under the Baseline Survey
Banth	571	80	14.01

Source: Facilitating Agency and Field Survey 2023

1.5 Limitations of the Study

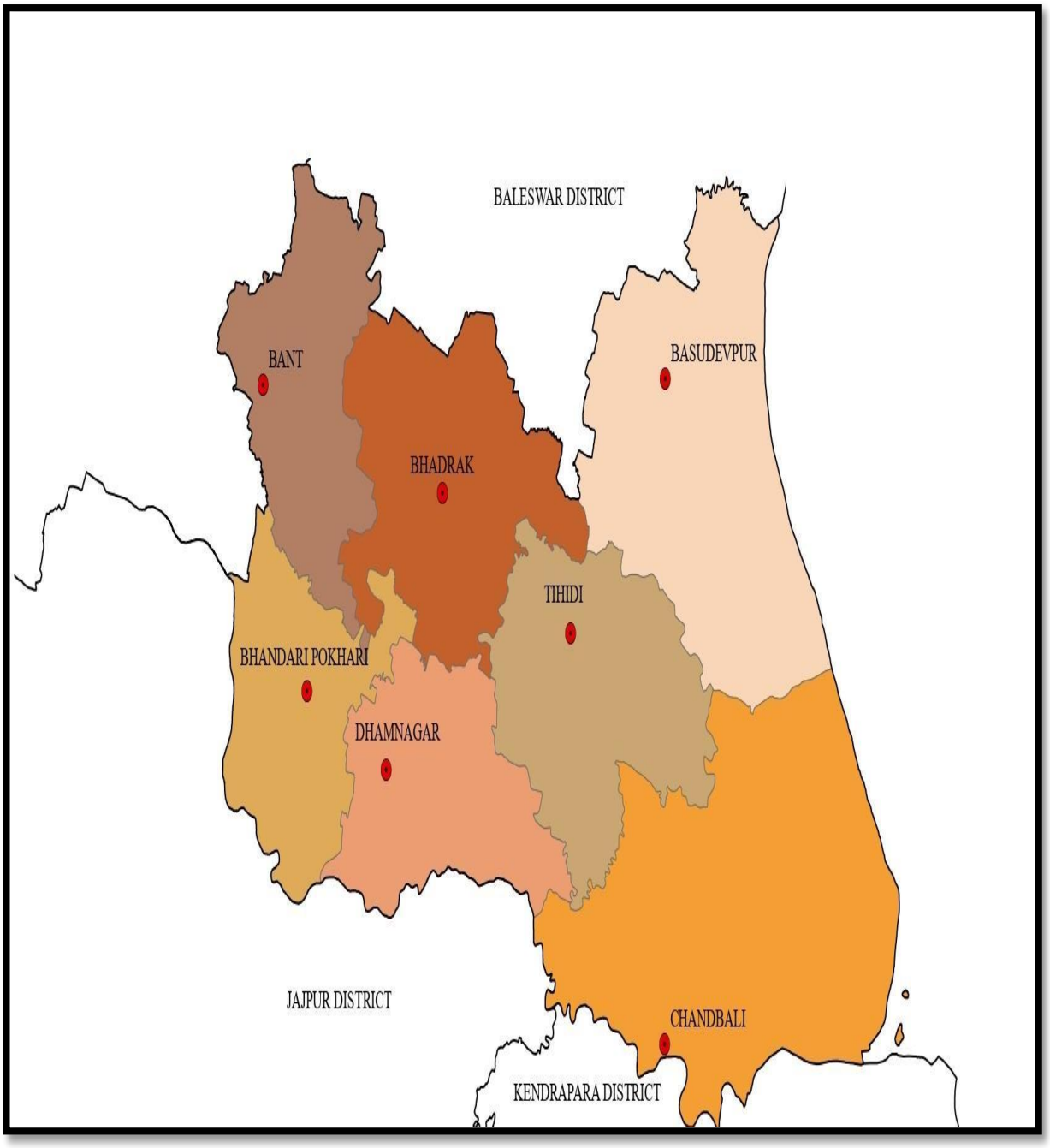
The present Baseline Survey focuses solely on Banth Block of the Bhadrak District. However, due to the onset of the harvesting season, coupled with both in and out-migration, some household heads and female respondents were found to be absent during the data collection process. Despite these challenges, 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 80 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 Chapters

There are six Chapters. The Introductory Chapter contains District Profile, Objectives, Methodology and Limitations. Chapter II includes Socio-economic Profile of sample households. Chapter III provides details on Production and Productivity of Millets. Chapter IV discusses Consumption Pattern of Millets. Chapter V annotates on Processing and Marketing of Millets.

Fig. 1.1: Map of Bhadrak District



Source: https://gisodisha.nic.in/Block/BHADRAK.pdf

Chapter II

SOCIO-ECONOMIC PROFILE

2.1 Introduction

This chapter investigates socioeconomic and demographic profile of sample households. Interpretation of data on social group, religion, population, education, occupation, house structure, land ownership and operational land holdings are the matter of the discussion.

2.2 Social Category

The data on social group of sample households shows that in Banth block Bhadrak district majority of the sample households belong to other Backward Class (OBCs), i.e. 33 (41.25 per cent), followed by Other Categories like General, which is 27 HHs (33.75 per cent), Scheduled Caste 18 HHs (22.5 per cent) and 2 HHs (2.5 per cent) belong to Scheduled Tribe category (Table2.1).

Table 2.1 Distribution of sample Households by their Social Category

Social Category	*N*	*%*
SC	18	22.5
ST	2	2.5
OBC	33	41.25
Others	27	33.75
Total	80	100

Sources: Baseline Survey, 2023

2.3 Distribution of Sample Population by their Sex

The distribution of the sample population among the total sample households presented in Table 2.2. The survey data reveals that out of total population of 400 sample population among the sample households and 219 (54.75 percent) of them are male and 181 (45.25 percent) are female.

Table 2.2 Distribution of Population in Sample Households by their Sex

Sex	***N***	***%***
Male	219	54.75
Female	181	45.25
Total	400	100

Sources: Baseline Survey, 2023

2.4 Marital Status

Distribution of the sample households based on marital status shows that out of the total sample population 220 (55 per cent) are Married and 157 (39.25 per cent) are Unmarried, 13 (3.25 per cent) of Widower and 7 (1.75 per cent) of women are Widow, and 3 (0.75 per cent) are Divorcee.

Table 2.3: Distribution of the Respondent Households by their Marital Status

Sl.	***Marital Status***	***N***	***%***
1	Unmarried	157	39.25
2	Married	220	55.00
3	Widow	7	1.75
4	Widower	13	3.25
5	Divorced	3	0.75
Total		400	100

Sources: Baseline Survey, 2023

2.5 Distribution of the Sample HHs by their Age Group

The age structure of population is the distribution of people of various ages. According to the baseline survey, adult population is found to be more (54.49 per cent) followed by the middle age group which is 26.93 per cent. Out of the total sample population, the old age people constitute 53 (16.41 per cent), Children 43 ((13.31 per cent), Adolescent 28 (8.67 per cent) Pre-school 7 (2.17 per cent), and only 6 (1.86 per cent) are the Infant population in the Banth block of Bhadrak (Table 2.4).

Table 2.4: Distribution of the Sample HHs by their Age Group

Sl.	*Age Group*	*N*	*%*
1	Infant	6	1.86
2	Pre-School	7	2.17
3	Children	43	13.31
4	Adolescent	28	8.67
5	Adults	176	54.49
6	Middle Age	87	26.93
7	Old age	53	16.41
Total		400	100

Source: Baseline Survey 2023

2.6 Education

Education plays an important role in development of human being. Education as one of the important variables has a significant impact on the views and opinions of respondents. The following table shows

the level of education of the family members of the sample household. From the below (table 2.5) 12 per cent are illiterate. Out of total, 43.75 per cent of family members of sample households have education up to secondary education level followed by higher secondary which is 12.25 per cent. People completed graduation or post-graduation are 12.75 per cent. Under other educational degrees, 8.25 per cent persons have degrees such as, Diploma and Management.

Table 2.5 Distribution of Sample Population by their Education

Sl.	*Education*	*N*	*%*
1	Illiterate	48	12
2	Primary	56	14
3	Secondary	175	43.75
4	Higher Secondary	49	12.25
5	Graduation	46	11.5
6	Post-Graduate	05	1.25
7	Others	21	5.25
Total		400	100

Source: Baseline Survey 2023

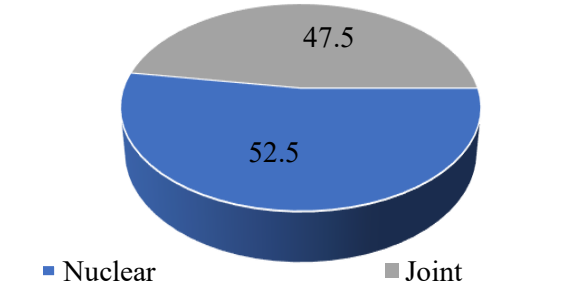
2.7 Religion of the Respondent HHs

All the sample households in the study area are Hindu. Hindu religion is a dominant religion in this area. Regarding the caste stratification of the population comprises of SC, ST, OBC and General. Total surveyed 80 HHs are Hindu in this block.

2.8 Type of the Family

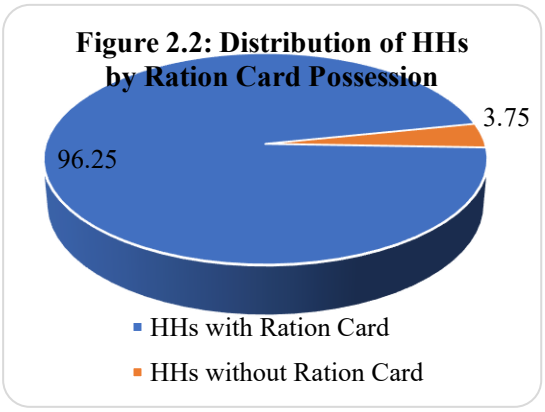
Fig. 2.1 presents the distribution of sample households by their family type in the study areas of the district. It shows that out of the total 80 sample households' majority (52.50 per cent) of them are nuclear families while a very significant share 47.50 per cent) of them are joint families.

Fig. 2.1 Sample HHs by their Type of Family (in %)



2.9 Possession of Ration Card

Fig. 2.2 shows the distribution of sample households by their possession of ration card in the Banth block of Bhadrak district. It shows that almost all (96.25 per cent) of them possesses ration cards while about 3.75 per cent of them do not possess it.



2.10 Type of House among the Sample HHs

Data collected under the Baseline Survey 2023, Phase VII shows that out of 80 sample households of the Banth blocks in Bhadrak district, majority of households reported that they have *Pucca* houses which constitute about 33 (41.25 per cent) followed by *Kutcha* house which is 26 (32.5 per cent), and only 21 (26.25 per cent) has *Semi-Pucca* house (Table 2.8).

Table 2.6: Distribution of Sample Households by their Type of House

Block	*Kutcha*		*Semi-Pucca*		*Pucca*		*Total*	
	N	*%*	*N*	*%*	*N*	*%*	*N*	*%*
Banth	26	32.5	21	26.25	33	41.25	80	100

Source: Baseline Survey, 2023

2.11 Occupational Pattern

The occupation determines the standard of living. In the present study, the distribution of economic activities and population across villages shows that out of total population of 400 persons, 118 (29.5 per cent) are farmers, followed by Students made up 93 (23.25 per cent) of the population. Housewife constitutes 20.25 per cent, the unemployed and others have 8.25 per cent and 4.25 percent respectively. Out of total sample 5 per cent worked as a labourer and 5 per cent working in private sectors, and in Government sector there is only 1.5 percent and 1 per cent were business owner and 2 percent were pension holders.

Table 2.7. Distribution of Sample Population by their Occupation

Sl.	*Occupation*	*N*	*%*
1	Agriculture	118	29.5
2	Daily Wage Labour	20	5
3	Business/Entrepreneurship	4	1
4	Govt. Sector	6	1.5
5	Private Sector	20	5

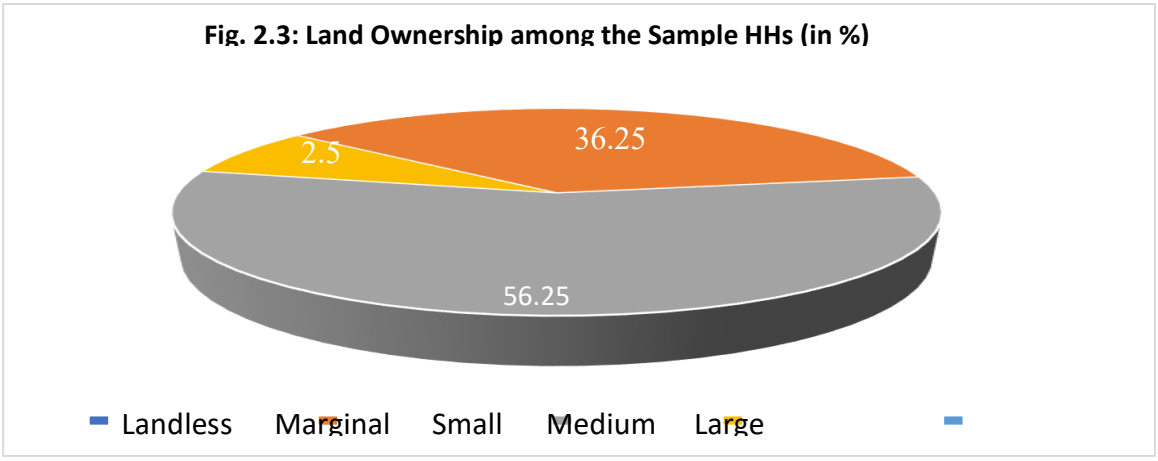
6	Pension/Remittances	8	2
7	Student	93	23.25
8	Housewife	81	20.25
9	Unemployed	33	8.25
10	Others	17	4.25
Total		**400**	**100**

Source: Baseline Survey, 2023

2.12 Land Ownership among the Sample HHs

Land ownership Size – Marginal, Small, Medium, and Big Framers revealed in the Baseline Survey, 2023 the ownership pattern of the sample households in Banth Block of Bhadrak district – out of the total, 56.25 per cent of the sample households having small land ownership followed by 36.25 per cent as the marginal land owners. It is also observed that the rest 2.5 per cent of the sample households are having medium land ownership (Fig. 2.3).

Fig. 2.3: Land Ownership among the Sample HHs (in %)



2.13 Annual Income among the Sample HHs

Household income is the total gross income received by all members of a household within a year. In this study, the annual income of 18.75% households is Rs.40001/- to Rs.80000/-; households having income in range Rs.120001/- Rs.160000/-; households having annual income above Rs.200001/- is of 13.75 per cent and up to Rs.40000/- is 21.5 per cent. Here the data revealed that annual income of sample households is very low.

Table 2.8 Distribution of the Sample HHs by their Annual Income

Sl.	*Level of Income*	*N*	*%*
1	Up to Rs.40000/-	17	21.5
2	Rs.40001/- to Rs.80000/-	15	18.75

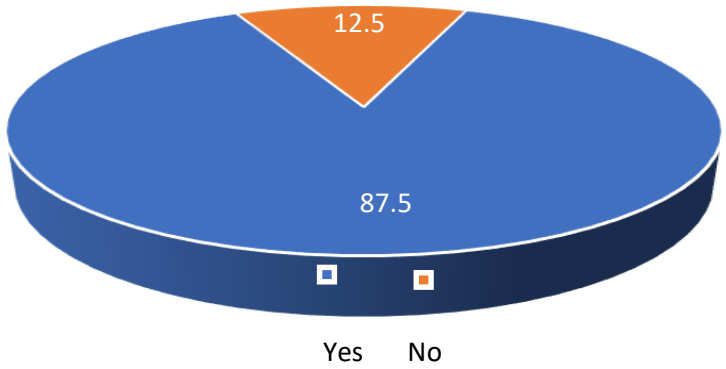
3	Rs.80001/- to Rs.120000/-	15	18.75
4	Rs.120001/- to Rs.160000/-	14	17.5
5	Rs.160001/- to Rs.200000/-	8	10
6	Above Rs.200001/-	11	13.75
	Total HHs	80	100

Source: Baseline Survey 2023

2.14 Agricultural Credit by the Sample HHs

Agricultural loan is a financial assistant for seasonal agricultural operations or related activities like animal farming or agricultural tools. Fig. 2.4 shows that, majority of the sample households have taken agricultural loan (87.5 per cent).

Figure 2.4 Agricultural Credit (in %)



2.15 Conclusion

Majority of the sample households across the selected block belong to the Other Backward Category (OBC) and agriculture is the primary occupation for most of the sample households in the Block. It is also found that majority of the sample HHs are having nuclear family. In addition to that it is also found that majority of the sample households are under small land ownership category. Another significant observation is that as many as 21 per cent of the sample households have their annual income up to Rs.40000/-.

Chapter III

PRODUCTION OF MILLETS

3.1 Introduction

In this chapter an attempt has been made to throw some light on the status of production of millets, usage of seeds, and package of practices in Bhadrak district. The analysis focuses on the distribution of land under millets and other varieties of crops, the usage of seeds and agronomic practices, as well as the production and yield of millets in the sampled villages. The chapter also highlights the challenges and opportunities for promoting millets in the district.

3.2 Cultivation of Different Crops

Table 3.1 shows the cultivation of different crops of sample households. Out of 80 households,100 percent households are cultivating paddy, 6.25 per cent households are cultivating millets, 10.00 per cent households are cultivating vegetables and rest 16.25 per cent all cultivating others crops.

Table 3.1. Distribution of Sample HHs by their Crops

Blocks	*Paddy*		*Millets*		*Vegetable*		*Others*		*Total*	
	No	*%*	*No*	*%*	*No*	*%*	*No*	*%*	*No*	*%*
Total HHs	80	100.00	5	6.25	8	10.00	13	16.25	80	100

Sources: Baseline Survey 2023

3.3 Operational Land holding under different Crops

Table 3.2 shows that out of the total operational land of 211.95 acres, land used for paddy cultivation is 94.15 percentages, 2.9 Acres (1.37 percentage) of land under millets, 9.50 acres (4.48 per cent) land under vegetables and 12 Acres (5.66 per cent) land under other crop cultivation.

Table 3.2: Operational Landholding under different Crops

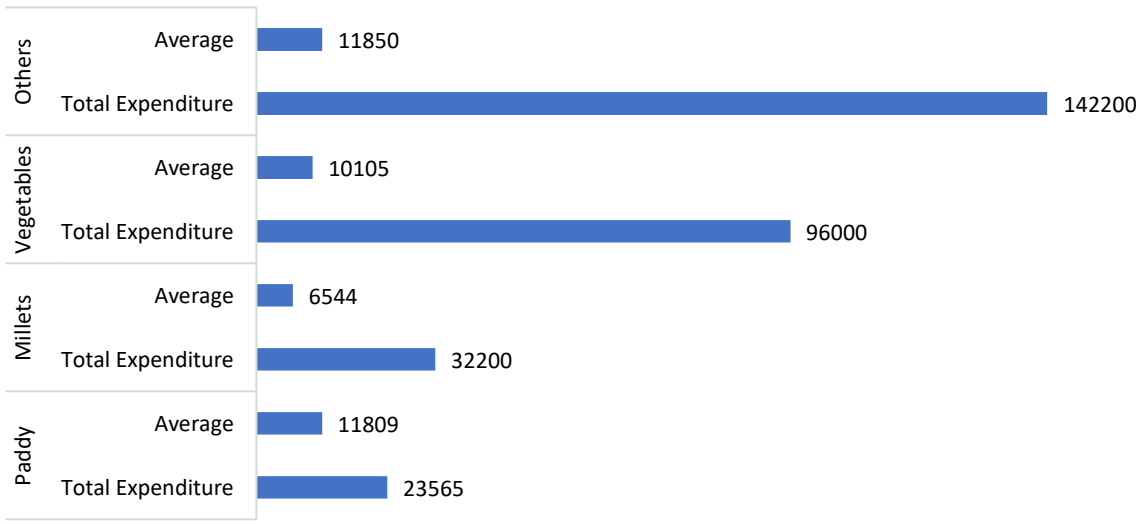
Crops/ HHs	*Paddy*		*Millets*		*Vegetables*		*Others*		*Total*	
	Acre	*%*	*Acre*	*%*	*Acre*	*%*	*Acre*	*%*	*N*	*%*
Total HHs	199.55	94.15	2.9	1.37	9.5	4.48	12.00	5.66	211.95	100.00

Source: Baseline Survey 2023

3.4 Annual Expenditure under different Crops

As observed in the Baseline Survey (Figure 3.1 and Table 3.3) the average annual expenditure of sample households under different crops. It is found that higher amount of expenditure is on paddy cultivation approximately Rs.11809/- followed by expenditure on vegetables average Rs.10105/- and in the others category the average annual income is Rs.10938/-. Moreover, it is also found that the average amount of Rs.6544/- are being spent in millets cultivation by the sample HHs in the Block.

Fig. 3.1: Annual expenditure



Source: Baseline Survey, 2023

Table 3.3: Average annual expenditure under different crops per acre (in Rs.)

	Paddy		Millets		Vegetables		Others		Total	
	Total Expenditure	Average	Total Expenditure	Average	Total Expenditure	Average	Total Expenditure	Average	Total Expenditure	Average
Annual expenditure	23565	11809	32200	6544	96000	10105	142200	11850	2626900	11625

Sources: Baseline Survey, 2023

3.5 Households are cultivating millets

As observed in the Baseline Survey, 2023 the distribution of sample household cultivating millets in Banth block of Bhadrak district has been presented in Table 3.4. it is also revealed that out of 80 sample households, only five HHs (6.25 per cent) are cultivating millets.

Table 3.4: Number of Sample Households Cultivating Millets

Block	*Yes*		*No*		*Total*	
	No	*%*	*No*	*%*	*No*	*%*
Banth	5	6.25	75	93.75	80	100

Sources: Baseline Survey, 2023

3.6. Area, Production and Yield of Millets

As revealed in the Baseline Survey (Fig. 3.5), out of the total sample HHs, millet was cultivated by only 5 households covering an area of 2.90 acres of land in Kharif Season with a total production of 18.00 quintals. It is also found that the yield was 6.21 Qtls. /Acre in Banth block of the district. Further the table also reveals that there is no millets production in Rabi and Summer Season in the study area (Table 3.5).

Table 3.5: Area, Production and Yield of Mandia (Finger Millets)

Seasons	***Details of Millets Cultivation the Sample HHs in Banth Block***	***Value***
	No of HHs Cultivating Millets	5
Kharif	Mandia Area (in Acre)	2.90
	Mandia Production (in Qtls.)	18.00
	Yield (Qtls. /Acre)	6.21
Rabi	Mandia Area (in Acre)	0
	Mandia Production (in Qtls.)	0
	Yield (Qtls. /Acre)	0
Summer	Mandia Area (in Acre)	0
	Mandia Production (in Qnt.)	0
	Yield (Qtls. /Acre)	0
Total	Mandia Area (in Acre)	2.90
	Mandia Production (in Qtls.)	18.00
	Yield (Qtls. /Acre)	6.21

Source: Baseline Survey, 2023

3.7 Millets Cultivation and Type of Land

In this section, type of land being used by the sample households for millets cultivation is discussed. As found in the Baseline Survey (Table 3.6) shows that households used middle land are of 80 per cent, slop land has never been used by the farmers and upper land is used by 20 per cent of the sample households for millets cultivation.

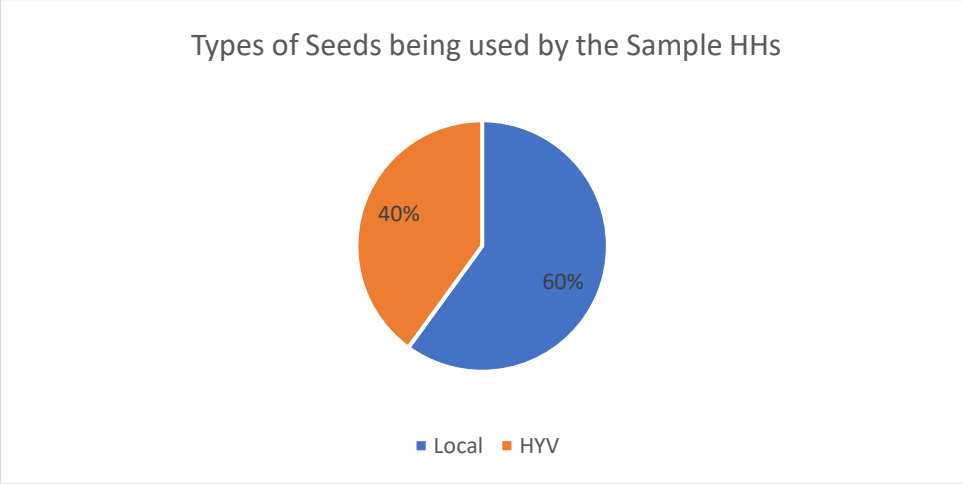
Table 3.6: Cultivation of Millets by the Sample HHs and their Type of Land being used during the Kharif Season

Block	*No. of HHs Cultivating Millets*		*Upper Land*		*Slope Land*		*Middle Land*	
	N	*%*	*N*	*%*	*N*	*%*	*N*	*%*
Banth	5	100	1	20	0	0	4	80

Source: Baseline Survey 2023

3.8 Perception on the Type of Seeds being used

As revealed in the Baseline Survey 2023, millet farming households in Bhadrak district believe that seed quality is a crucial component of cultivation and crop production. The quality of seeds being used by a farmer usually is considered as one of the vital determinants of production. As observed, high-quality seeds are also preserved for the next crop season to reap the benefits. It was attempted to understand the general perception of millet farmers, and the findings shows that out of the total millet cultivated households, 60 per cent are using local types of seeds and 40 per cent are using hybrid Seeds (Table 3.7).



Source: Baseline Survey 2023

Table 3.7 Types of Seeds being used by the Sample HHs (Kharif)		
Type of Seeds being Used	*N*	*%*
No of HHs Cultivating Millets	5	100
Local	3	60
HYV	2	40

Source: Baseline Survey 2023

3.9 Sources of the Seeds

Seed is an important input that determines the production, yield and quality of the millets being produced by the farmers. In this regard, the sources of the seed are also crucial as it determines the quality of the seeds maintained by the stakeholder. As found in the Baseline Survey, out of the total millet cultivated households, as many as three sample households (60 per cent) used their own seeds and another two sample household (40 percent) borrowed the seeds they have cultivated during the period from their relatives (Table 3.8).

Table 3.8: Sources of the Seed being used by Sample HHS during the Kharif season		
Sources of the Seeds	***N***	***%***
Own Seed	3	60
Relatives	2	40

Source: Baseline Survey 2023

3.10 Quality of the Seeds being used

As found in the Baseline Survey (Table 3.9) that the quality of seed is good for two sample households (40 per cent), and another 3 sample households (60 per cent) shared that the seed quality is bad. The farmer households used their own seeds.

Table 3.9: Quality of the Seeds being used (Kharif)					
No. of HHs Cultivating Millets		*Good*		*Bad*	
N	%	N	%	N	%
5	100	2	40	3	60

Source: Baseline Survey 2023

3.11 Package of Practices

Baseline Survey, 2023 observed that (Table 3.10) different method of cultivation and techniques are being used by the sample households such as Broadcasting, Line Sowing/ Line Transplanting, System of Millets Intensification (SMI) method, as well as a combination of one or more methods as well. It is also found in the Survey that out of the total millet cultivating households, 40 percent followed Line Transplantation (LT) method and another 3 HHs (60 percent) followed Broadcasting method.

Table 3.10: Sample HHs by their Method of Cultivating Millets

No. of HHs Cultivating Millets/ Methods being followed		*LT*		*Broadcasting*	
N	%	N	%	N	%
5	100	2	40	3	60

Source: Baseline Survey, 2023

3.12 Use of Fertilizer

The Baseline Survey Data reveals that out of total millet cultivating households in Banth blocks of Bhadrak district, two sample households (40 percent) are using Organic Manure and another three households (60 percent) are using Chemical Fertilizer (Table 3.11), while cultivating millets during the year 2022.

Table 3.11: Distribution of Sample HHs by their use of Organic/Fertilizer

No of HHs Cultivating Millets		*Used Organic Manure*		*Used Chemical Fertilizer*	
N	%	N	%	N	%
5	100	2	40	3	60

Source: Baseline Survey 2023

3.13 Use of Pesticide

As found in the Baseline Survey (Table 3.12) that 3 HHS (60 per cent) of the sample households are using both Bio-Pesticide as well as the Chemical Pesticide in their millets cultivation as and when it is required. It is also observed that out of the total sample HHs, as many as 2 HHS (40 per cent) are using only Bio-pesticides.

Table 3.12: Sample HHs by their Use of Pesticides in Millets Cultivation				
No. of HHs Cultivating Millets in the Block	Used Bio-Pesticide		Used Both Bio & Chemical pesticides	
N	N	%	N	%
5	2	40	3	60

Source: Baseline Survey 2023

3.14 Type of Cropping Practices by the Sample HHs

As shard by the sample HHs during the Baseline Survey, 2023 that all five millet cultivating sample households are following Mono Cropping pattern for their millets cultivation during the year 2022. As shared by them, due to no knowledge and exposure they found it difficult to adopt any other method, however, they would be interested to adopt new method, provided they are given training and handholding support.

3.15 Storage of Seeds

It is also found that (Table 3.13) shows that as many as 4 (80 per cent) of the sample households are storing their seeds in Jute Bags, only 1 HH (20 per cent) are using Earthen Pots, and no sample HHs are using the Bamboo Baskets to preserve their millets seeds. It is also revealed that in the due process of preservation of the millets seeds as shared by the sample millets farmers – the seeds are well preserved.

Table 3.13: Distribution of Sample HHs by their Storage of Millet Seeds					
No of HHs Cultivating Millets		*Jute Bag*		*Earthen Pot*	
N	*%*	*N*	*%*	*N*	*%*
5	100	4	80	1	20

Source: Baseline Survey, 2023

3.16 Weeding adopted by the Sample HHs

As agreed, weeding is an effective pre-harvesting method of crop production. In this regard, as revealed by the sample millet farmers that that majority of the sample households 4 sample HHs (80 per cent) did their weeding to millets cultivation manually. In this regard it is also found that 1 sample HH (20 percent) used Weeder.

3.17 Major Reasons for not Cultivating Millets by the Sample HHs

As per the Baseline Survey, 2023 there are a number of reasons for not cultivating millets in Banth

Block of Bhadrak District. As revealed in the Study (Table 3.17) out of total as many as 75 sample farmer households are not cultivating millets due to various reasons. As many as 62 samples HHs (73.8 per cent) revealed that it is not profitable for them to go for millets cultivation. Another 8 sample HHs (9.5 per cent) that due to non-availability of millets seeds they could not cultivate millets. Whereas only 6 samples HHs (7.1 per cent) shared those millets cultivation might be requiring more water so due to lack of irrigation facility in their area they did not cultivate millets and another 8 sample HHs (9.5 per cent) revealed marketing of millets is a big problem for them so they did not cultivate millets during the period.

Table 3.17: Major Reasons for not Cultivating Millets by the Sample HHs

Not Profitable		*Shortage of land*		*Non-availability of seed*		*Lack of irrigation*		*Others (Marketing Issue)*		*Total*	
N	%	N	%	N	%	N	%	N	%	N	%
62	73.8	0	0.0	8	9.5	6	7.1	8	9.5	84	100

Source: Baseline Survey, 2023

3.18 Conclusion

As found in the Baseline Survey, out of the total sample households only five HHs cultivated Millets. It is also observed that more than one third of the sample HHs used good quality seeds nearly two third use average quality and a small number of HHs use low quality of seeds. Most of the sample HHs cultivated millets through Line Sowing, Line Transplantation, and some of them even by adopting the Broadcasting method. As shared, they do weeding manually and store their millets seeds in the Jute Bags. As shared during the Baseline Survey that one of the major reasons for not cultivating millets by the sample HHs is due to profits. It is also found that none of the sample HHs adopted SMI method.

Chapter IV

CONSUMPTION OF MILLETS

4.1 Introduction

This chapter analyses about millets consumption among the sample HHs in Banth Block of Bhadrak. The chapter also explores the variation of millet recipes and dishes that the sample population consume on a day-to-day basis. By doing so, the chapter aims to provide a comprehensive picture of the millets consumption patterns, frequency of taking millet based food items and as well as their preferences.

4.2 Consumption of Millets by the Sample HHs

According to the Baseline Survey, out of the total 28 sample HHs (35 per cent) are consuming millet based items in Banth Block of Bhadrak District with an average HH level consumption of 7.75 Kg.

4.3 Millets Consumption by their Age Group

As observed in the Baseline Survey (Table 4.2) millets consumption among the sample population that the rate of millets consumption is higher among the Pre-school Children 7 number (71.42 per cent) followed by Old Age 26 number (49.05 per cent). It is also found that consumption of millets among adult age group is 79 numbers (44.88 per cent), among the Children it is found that 43 number (41.86 per cent) are consuming millets, among the Adolescent it is found that 79 (50 per cent) and 24 number (27.58 per cent) among middle age groups are consuming millets in the Banth Block.

Table 4.2: Millets Consumption by the Sample HHs across their Age Groups

Sl.	*Age Groups*	*Total Sample Population*	*No. of sample population consume millets*	*% of sample population consume*
1	Infant	6	0	0
2	Pre-school	7	5	71.42
3	Children	43	18	41.86
4	Adolescent	28	14	50
5	Adults	176	79	44.88
6	Middle Age	87	24	27.58
7	Old age	53	26	49.05
Total		400	166	41.5

Source: Baseline Survey 2023

4.4 Millets Consumption during Different Meals of the Day

Consumption of millets by sample households during different meals of the day revealed that out of the total millet consuming households, 28 sample population (100 per cent) consume it in their Breakfast, 23 sample population (82.14 per cent) had consumed it in their Lunch, 8 sample population (28.57 per cent) consume in the Evening Snacks and further it was evident that not a single surveyed sample household had not consumed millets during their Dinner (Table 4.3).

Table 4.3 Millets Consumption in Different Meals of the Days

Blocks	*Breakfast*		*Lunch*		*Evening Snacks*		*Dinner*		*Total HH*	
	No	%	No	%	No	%	No	%	No	%
Total	28	100	23	82.14	8	28.57	0	0.00	28	100

Source: Baseline Survey, 2023

4.5 Millets Consumed by Respondent HHs across Seasons

Baseline Survey found that (Fig. 4.2 and Table 4.4) consumption of millets across seasons in the block is quite interesting. As revealed, out of the total sample population most of the sample households prefer to consume millets in summer as compared to rainy and winter seasons. It is observed that 28 sample populations consume millet during the summer season, 24 sample populations (85.71 per cent) consume during winter season and another 6-sample population (21.42 per cent) consume during the rainy season.

Table 4.4 Distribution of Sample HHs by their Millet Consumption across Seasons

Block	*Total Millets Consuming Households*	*Winter*		*Summer*		*Rainy*	
	N	N	%	N	%	N	%
Total	28	24	85.71	28	100	6	21.42

Source: Baseline Survey, 2023

4.6 Sources of the Millets being consumed by the Sample HHs

As observed in the Baseline Survey (Table 4.5) that the sources of consumption show that out of total

millet consuming households, 5 sample households (17.85 percent) consume from Own Production and 23 households (82.14 per cent) consuming by purchased which is higher than own production.

Table 4.5 Distribution of Respondent HHs by their Sources of Millets		
Sources	*N*	*%*
Consumed from their own production	5	17.85
Purchased from other sources	23	82.14

Source: Baseline Survey 2023

4.7 Households Consumption of Different Millets Recipes

As revealed in the Baseline Survey (Table 4.6) the distribution of millets cultivating sample households by types of recipes the consumed. It was found that households were consuming millets in form of *Pitha, Chhatua, Khiri, and Jau* and so on. Table 4.6 shows that 67.86 per cent HHs consumed millets as a Pitha/Tampo and followed by *Jau/ Torani* which is 60.71 percent. Another 39.29 per cent HHs consumed recipes of millets known as *Chhatua,* also consumed as *Khiri* 25 per cent, and 7.14 per cent consumed as *Idli/ Upma*.

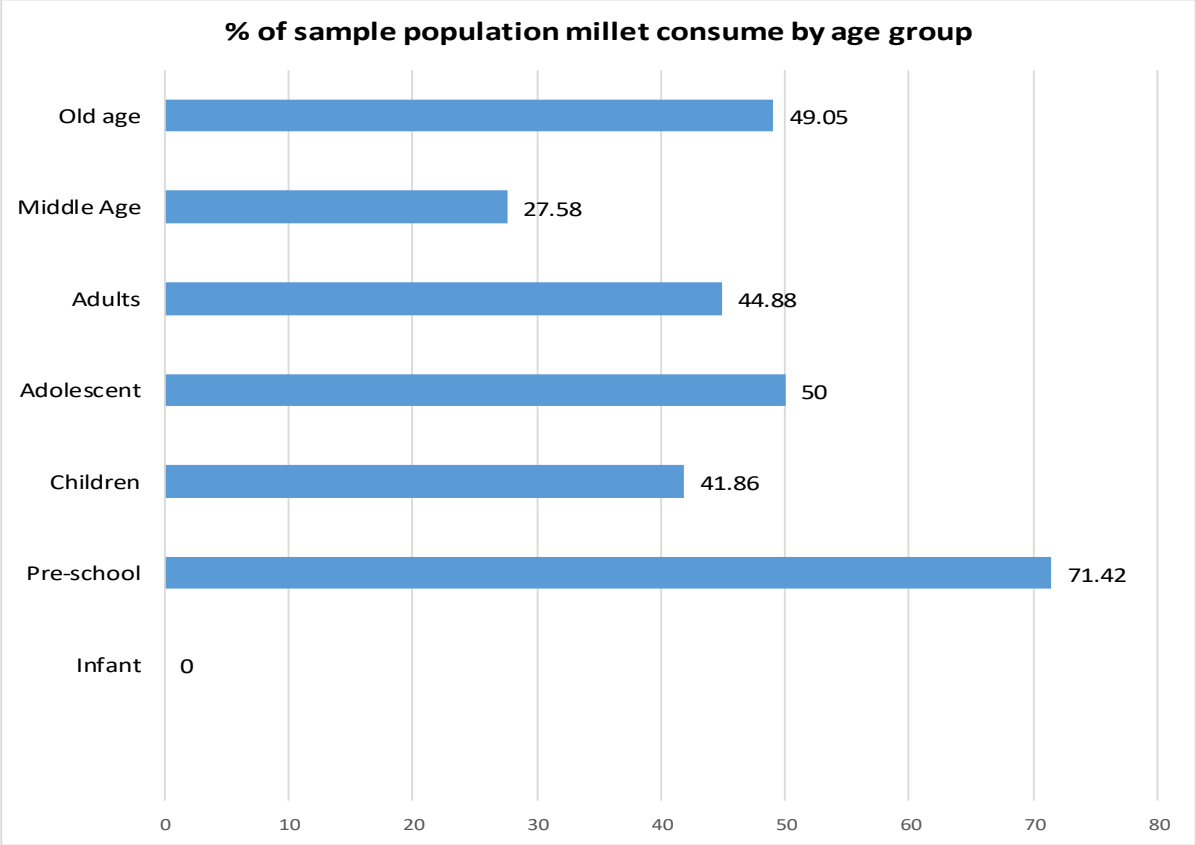


Table 4.6: Consumption of Millet Recipes by the Sample HHs			
Sl.	Recipes	N	%
1	*Pitha/ Tampo*	19	70.37
2	*Chhatua*	11	40.74
3	*Jau/Torani*	17	62.96
4	*Kiri*	8	29.63
5	*Idli/ Upma*	2	7.41
6	Sweets items	0	0.00
7	Others	0	0.00
Total		27	100

4.8 Conclusion

The millets consumption pattern among the sample households in Bhadrak district shows that 35 percent of HHs consumed millets. It is found that most of sample Households consume by purchasing millets from the market. It is also found in the Baseline Survey that millets consumption is high in the summer season, especially during their breakfast time. Another significant finding is that Adults and Middle age person consume millet based food items more, as compared to the Infants and Pre-school children. Among the millet based recipes, it is also observed that *Pitha/Tampo* is the most common millet recipe

Chapter V

PROCESSING AND MARKETING OF MILLETS

5.1 Introduction

Processing millets for consumption and marketing are vital for a millets farmer. Millets processing begins soon after harvesting, and it ends with packaging and marketing. During processing goods are transformed so as to increase their shelf-life and to make them more acceptable to the consumer than in their original form. Usually, the millets farmers selloff their surplus products or even exchange it for other items. This chapter looks into processing of millets that the sample HHs adopts and the mode by which it is sold. It also attempts to make an analysis of various methods and technology being used by the farmers for processing millets, mode of transportation, storage as well as the selling points.

5.2 Processing Millets

As observed in the Baseline Survey the millets cultivating sample farmer HHs process millets after harvesting. It is found that all five sample HHs (6.25 per cent) process by adopting various methods.

5.3 Methods adopted by the Sample HHs while Processing Millets

As found in the Baseline Survey, 2023 all five millets cultivating sample Households prefer processing millets manually by using Stone *Grinder or Chaki.* However, in course of time due to technological innovation and accessibility of these machines it has made the whole process easy for the processing of millets at their level. Hence, it is observed that some sample HHs adopted both manual mode as well as used the locally available machines for processing millets. As found, 3 sample HHs (60 per cent) processed their produces manually/ traditionally and as many as 2 sample HHs (40 per cent) process millets by adopting both the methods (Table 5.2).

Table 5.2 Distribution of HHs by their Methods of Processing Millets

Methods used for Processing	*Using Traditional Method*		*Using Machinery*		*Using Both the Methods*		*Total*	
	N	*%*	*N*	*%*	*N*	*%*	*N*	*%*
	3	60	0	0	2	40	5	100

Source: Baseline Survey, 2023

5.4 Marketing of Millets

As found in the Baseline Survey, 2023 that, out of the total five millet cultivating households, only 1 HH (20 percent) sell the millets in the local selling point, the remaining did not sell and preferred to consume their products after processing.

5.5 Distribution of the Sample HHs by their Selling Point of Millets

As found in the Baseline Survey, 2023 (Table 5.4) there are a number of millet selling points for the sample millets cultivating HHs. It is observed that out of the total 3 samples HHs (75 per cent) sold their millets to Middlemen/ Local Businessman. Another 1 HH (25 per cent) sold his produce in the local daily market.

5.6 Mode of Transportation of Millets by the Sample HHs

Transportation of millets takes place after harvesting in the field by the farmer household. After harvesting, there is a need to transport their produce either directly to their home or even to their selling points including the Mandi. It is vital for a farmer because, the farmer may have to spend for transportation leading to the enhancement of its price. The additional cost depends upon the mode of transportation being used by the sample HH. As found in the Baseline Survey, the mode of transportation for millets being used by the sample HH that only 1 HH sell his millets by using cycle to transport his produces to the selling point.

5.7 Conclusion

The processing and marketing of millets in the sample households in Banth blocks of Bhadrak district under Baseline Survey 2023, Phase VII reveals that fewer sample households are processing and marketing their produces. As found, few households process their millets both by using machine and using their age old traditional method. Stone grinder is commonly used for processing millets by the sample HHs. Further, only one household sold millets by transporting his produce by Cycle to his Selling Point.

Annexure 1: Mapping Baseline Survey, 2023 Data - Bhadrak District

Sl.	Indicators	Unit	Baseline Value
1	% of Sample households Cultivating Millets	%	6.25
2	Types of Millets Cultivated (2022)		
	a) Mandia		6.25
3	Avg. Area under Millets/HH(Acre)	Acre	2.9
4	Millets/Ragi Production per HHs	Qtls	18
5	% per of millets area to total cultivated area	%	1.37
6	Package of Practice	%	
Kharif	a) Broadcasting	%	60
	b) LS	%	0
	c) LT	%	40
	d) SMI	%	0
Rabi	a) Broadcasting	%	0
	b) LS	%	0
	c) LT	%	0
	d) SMI	%	0
Summer	a) Broadcasting	%	0
	b) LS	%	0
	c) LT	%	0
	d) SMI	%	0
7	Yield Rate (Qnt. /Acre)	Qtl	6.21
8	% of HHs Consuming Millets	%	35
	a) Breakfast	%	100
	b) Lunch	%	82.14
	c) Evening Snacks	%	28.57
	d) Dinner	%	0
9	Popular Millets Recipes (% HHs)		
	a) Tampo/Pitha	%	67.86
	b) Chhatua	%	39.29
	c) Jau/Torani	%	60.71
	d) Khiri	%	25
	e) Idli/ Upma	%	7.14
10	% of HHs using Processing Ragi	%	6.25
	a) Manually	%	60
	b) Machines	%	0
	c) Both	%	40
11	% of HH Selling Millets	%	20
	a) Middleman	%	75
	b) Mandi	%	0
	c) Haat	%	25
	d) Moneylender/Sahukar	%	0
	e) Sahukar	%	0
12	Distress Sale (% of Sample HHs)	%	0

Source: Baseline Survey, 2023

Annexure 2

Confidential and to Be Used for Research Purpose Only

Households Schedule for Baseline Survey 2023-24,
Phase VII 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

31. Do you sell millets? 1. Yes 2 .No

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)

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**

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