

BASELINE SURVEY: PHASE VII

SUBARNAPUR 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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ନବକୃଷ୍ଣ ଚୌଧୁରୀ ଉନ୍ନୟନ ଗବେଷଣା କେନ୍ଦ୍ର
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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 program 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 program 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 the NCDS administration for their continuous support for the 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 staff of the State Project Monitoring Unit (SPMU), for their unwavering support and assistance throughout this project.

My sincere gratitude goes out to the Chief District Agricultural Officer (CDAO) of Subarnapur 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

Subarnapur district is one of the 17 districts where the 'Special Programme for the Promotion of Millets in Odisha ' (hereafter), Shree Anna Abhiyan (SAA), Phase VII has begun in the Kharif 2022 in its two blocks, namely Ulunda and Biramaharajpur. Under Phase VII of implementing the Shree Anna Abhiyan (SAA) in Subarnapur district, 400 households are identified for the programme. Out of these, 160 households were selected through the random sampling method and conducted the Baseline Survey 2023. Under the Survey, primary data is collected from 160 sample households covering two blocks. The survey revealed that among the surveyed households, 43.12 per cent belongs to Schedule Tribe (STs) follow by Other Backward Classes (OBCs)/ Socially and Educationally Backward Classes (SEBCs) which is 35.62 per cent, 15.00 per cent belong to Schedule Caste (SCs) and Others belongs to 6.25 per cent.

It is also found that the total population of the surveyed sample households is 629, out of which 53.42 per cent are male and 46.58 per cent are female. The religious composition of the surveyed households indicates that out of 160 sample Households, 58.12 per cent belong to the Hindu religion, and 41.88 per cent belong to the Christian religion. Out of the total sample households, 98.12 per cent possess a Ration Card, and a significant portion of the population (29.89 per cent) are Students, followed by the farmers (27.50 per cent). The share of wage labourers is 12.08 per cent, while government employees are 0.79 per cent, housewives comprise 20.35 per cent, and about 5.25 per cent of the sample population in the working age group are found to be unemployed. About 104 (65.00 per cent) of the sample households surveyed have Kutcha houses, another 32 (20.00 per cent) have Semi-Pucca houses, and 24 households (15.00 per cent) have Pucca houses.

As found in the Survey, out of the total population, 85.21 per cent are literate. 69.37 per cent of Households have Small Land Ownership and 12.50 per cent have Marginal Land Ownership, 13.76 per cent have Medium Land Ownership, and only 4.37 per cent belong to Large Land Ownership. As far as their income is concerned, only 3.75 per cent of Households have an income range between Rs. 160001/- to Rs. 200000/-. Out of the total sample HHs, 1.25 per cent have taken an Agricultural Credit. From the field survey, it is found that out of the total sample of 160 HHs in Ulunda and Biramaharajpur Blocks, only 4 HHs in Ulunda Block have cultivated millets in the year 2022. It is also observed that the total operational area among the sample households in the two sample blocks is 549.7 acres; 533 acres is used for paddy cultivation, 2 acres for millets cultivation, and another 14.7 acres are used for vegetable cultivation. Only four sample HHs cultivate millet in the studied villages during the baseline survey in Ulunda Block. Millet production is 4 Quintals, and the yield is 2 Quintals per acre. Out of the total sample HHs, it is found that only 25 HHs (15.62 per cent) consumed millets. The annual average HH consumption in Biramaharajpur Block is 0.73 Kg and in Ulunda Block it is 4.00 Kg.

The Baseline data also indicates that consumption of millets is highest among the sample HHs during the summer season (68.00 per cent), while 40.00 per cent consume millets during the winter season, and during the rainy season, not a single sample HH consumes millets. Baseline data

indicate that all members of the sample population consume millet during breakfast, followed by 76.00 per cent during lunch. Additionally, *Jau/Torani* is a popular recipe among the surveyed sample households, and all of them are found to consume this recipe. The other popular recipes are Tampo/Pitha, Khiri, and Idli/Upma. The Baseline Study also reveals that the majority of Sample Households purchased millet flour from the market and consumed it. Out of the total sample HHs, only 4 sample HHs process millets by adopting the traditional method for their consumption.

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ABBREVIATIONS

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
Ha	: Hectares
HHs	: Households
ICDS	: Integrated Child Development Scheme
LS	: Line Sowing
LT	: Line Transplanting
MDM	: Mid-Day Meal
MFP	: Minor Forest Produce
MSP	: Minimum Support Price
NCDS	: Nabakrushna Choudhury Centre for Development Studies
OBC	: Other Backward Classes
PDS	: Public Distribution System
SAA	: Shree Anna Abhiyan
SC	: Scheduled Caste
SMI	: System of Millet Intensification
ST	: Scheduled Tribe
WASSAN	: Watershed Support Service and Activities Network

Chapter I

INTRODUCTION

1.1 Background

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 Glycaemic 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 that belongs to the Poaceae family, commonly known as the grass family, and are grown in India, Nigeria, and other Asian and African countries. It is considered an ancient grain, which is 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 divided into two categories, i.e., 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, and adlay (or Job's tears). Like most cereals, millet is a starchy grain rich in carbs. Notably, it also packs several vitamins and minerals. Therefore, it may have multiple health benefits. In 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 the last couple of decades, millets' popularity has declined due to the increasing demand for fast foods and modern food habits.

To address the importance of millet as a 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, SAA) was initiated by the Government of Odisha in 2017-18, emphasising production, consumption, processing, and marketing of millets. The main objective of the programme is to increase the 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 has a unique structure that emphasizes cultivating traditional millets such as Ragi, Gurji, Kosla (small millets), Kodo, Kangu (foxtail millets), and Jowar. In 2023-2024, a baseline survey of phase VII was conducted in 17 districts, including Bargarh district, and aims to provide information on the program dimensions in the district. The program had a unique structure that emphasized cultivating traditional millets such as Ragi, Gurji, Kosla (small millet), Kodo, Kangu (foxtail millet), and Jowar, which are forest dwellers' age-old foods. This initiative gave millet crops the much-needed attention they deserved and revived their growth across the state. In 2021-22, the implementation of SAA phase VI began in 17 districts, including

Subarnapur district and this baseline study aims to provide information on the program's dimensions in the district. The profile of the Subarnapur district is presented below.

1.2 District Profile

Subarnapur district, also known as Sonapur district, is located in the western part of Odisha. It is situated between 84° 16' to 85° 23' East longitude and 20° 31' to 21° 41' North latitude. The district is bordered by Sambalpur district to the north, Boudh district to the south, Angul district to the east, and Bolangir district to the west. Covering an area of 2,337 Square Kilometers, the district has a population of 610,000 according to the 2011 Census. It accounts for 1.50 per cent of the state's territory and shares 1.45 per cent of its population. The population density in the district is 261 people per square kilometer, compared to the state's density of 270 people per square kilometer. Subarnapur district consists of 962 villages, including 106 uninhabited ones, and is divided into 6 blocks, 6 Tehsils, and 2 subdivisions. According to the 2011 Census, the scheduled caste population is 156219 (25.60 per cent), while the scheduled tribe population is 57192 (9.40 per cent). The literacy rate in the district stands at 74.4 Per cent, compared to the state average of 72.9 per cent. The climate is generally hot with high humidity from April to May and cold from November to December. The monsoon typically begins in June. In 2018, the district recorded an annual rainfall of 1,624.5 mm, which is higher than the average normal rainfall of 1,418.5 mm.

Fig 1.1: Map of Subarnapur District

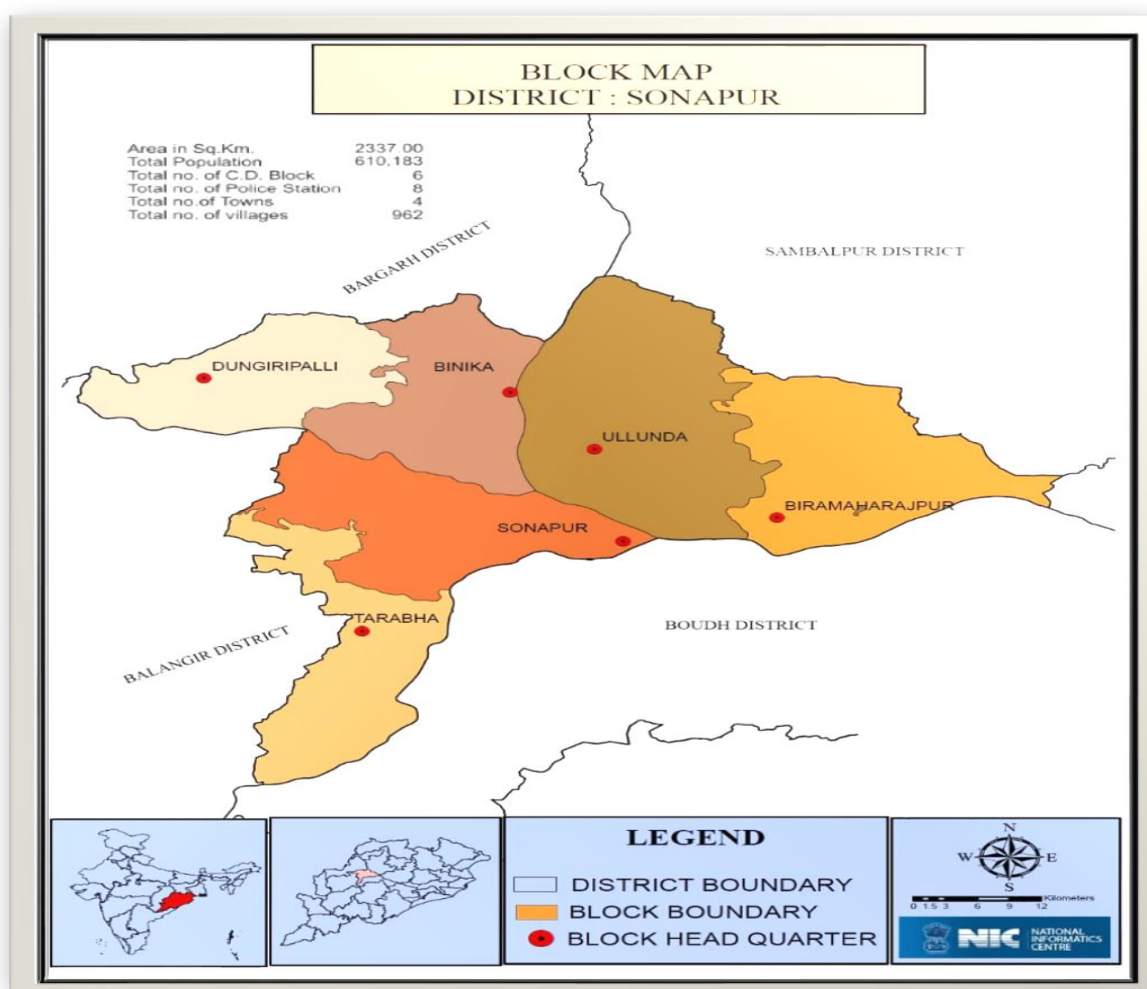


Table 1.1: Social, Economic, and Demographic Features of Subarnapur District	
<i>Indicators</i>	<i>Value</i>
Census 2011	
Population	6,10,183
Male	3,11,312
Female	2,98,871
Scheduled Caste	15,6219
Scheduled Tribe	57,192
Household	1,52,454
Sex Ratio (Number of females per 1000 males)	960
Total Worker (In Lakh)	2,86,661
Main Worker	1,70,218
Marginal Worker	1,16,443
Non-Worker	3,23,522
Cultivator as % of Total Workers	74,005
Agricultural Laborers as % of Total Workers	1,39,413
Workers in Household Industry as % of Total Workers	18,756
Other Workers as % of Total Workers	54,487
Literacy Rate (%)	64.07
Total Geographical Area (sq km)	2,337
Land Use Pattern (Area in '000ha), 2014-2015	
Forest	13,524
Land put to Non-agricultural use	25,235
Barren land Non-Cultivable Land	3,061
Permanent Pasture and Other Agricultural Land	11,030
Net Area Sown	94,430
Cultivable Waste Land	10,279
Old Fallow	10,288
Current Fallows	18,063
Miscellaneous Trees and Groves	445
Total Area under Survey	1,86,355
Agriculture, 2013-14	
Average Fertilizer Consumption (Kg/Ha)	49.05
Irrigation, Kharif (Ha)	54918
Irrigation, Rabi (ha)	32667
Other Information	
Proportion of Villages Electrified (as on March 2018)	856
AWCs	1,556
No. Job Cards Issues (in Lakh)	1.10
No. of banks (In Nos.)	72

Source: District Statistical Handbook, Subarnapur, 2011, and District at a Glance 2020

1.3 Objectives

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

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

1.4 Methodology

1.4.1. Sample Design

Multi-stage sampling method has been followed to select the sample Households. In the first stage, two blocks, namely Biramaharajpur and Ulunda, have been selected purposively. In the second stage, two GPs from each block have been randomly selected, and in the last stage, 20 sample households from each village have been randomly selected. A total of 160 Households from eight villages have been randomly selected for this study. The details have been presented in the following table 1.2

Table 1.2 Sample HHs across the blocks in Subarnapur District		
Blocks	Program Households (N)	Sample HHs for the Baseline Study (N)
Ulunda	200	80
Biramaharajpur	200	80
Total	400	160

Sources: Baseline Survey 2023

1.4.2 Data Collection, Compilation and Analysis

This baseline survey is based on both secondary and primary data. The primary data was collected from the sample households by using a pre-tested interview schedule. The secondary data on the geographical information, population, agriculture, education, irrigation, forest and institutions was collected from secondary sources such as books, journals, reports and the Census.

1.5 Limitations of the Study

The present study focuses solely on two Blocks, i.e., Biramaharajpur and Ulunda of Sonepur 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. 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 80 households each from two blocks. Secondly, there is the possibility of a recall error. 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 in the future.

1.6 Chapters

There are six chapters. The introductory Chapter contains the District Profile, Objectives, Methodology, and Limitations. Chapter II includes the Socio-economic Profile of Sample Households. Chapter III provides details on the Production and Productivity of Millets. Chapter IV discusses the Consumption pattern of millets. Chapter V annotates Processing and Marketing of Millets.

Chapter II

SOCIO-ECONOMIC PROFILE

2.1 Introduction

This chapter looks into the social and demographic profile of Households surveyed, that is, their distribution by social group, religion, gender, age structure, education, occupation and so on. In addition, for the Households surveyed, it provides the distribution by poverty status (proportion below poverty line and proportion above), distribution by economic activities (not mutually exclusive as a Household can have multiple economic activities), and distribution by house structure. It also provides information about the distribution of households by their land ownership and operational holdings.

2.2 Social Category

The social composition of sample households presents in the table 2.1 that out of the total 160 sample HHs most households belong to Schedule Tribe (STs), i.e., 43.12 per cent followed by Other Backward caste (OBCs) which is 35.62 per cent, Schedule Caste (SCs) is 15.00 per cent and Others 6.25 per cent.

Table 2.1: Distribution of Sample HHs by their Social Category								
Blocks	SC		ST		OBC/ SEBC		Others	
	N	%	N	%	N	%	N	%
Ulunda	10	12.50	47	58.75	19	23.75	4	5.00
Biramaharajpur	14	17.50	22	27.50	38	47.50	6	7.50
Total	24	15.00	69	43.12	57	35.62	10	6.25

Source: Baseline Survey 2023

Similarly, block-wise distribution of households in Ulunda block reveals that about 58.75 per cent households belong to Scheduled Tribes (STs) category, 12.50 per cent of households belong to the Scheduled Castes (SCs), 23.75 per cent of households from Other Backward Classes or Socially and Educationally Backward Classes (OBCs/SEBCs) and only 5.00 per cent of households belong to others social categories. Similarly, in Biramaharajpur block, 27.50 per cent of total households are STs, 17.50 per cent are SCs, 47.50 per cent are OBC/SEBCs, and 7.50 per cent of households belong to other social categories.

2.3 Sample Population by Sex

The distribution of the population among the sample households by their sex is presented in Fig. 2.1. According to the survey data, out of the total population of 629 individuals among the sample households, 53.42 per cent are male and 46.58 per cent are female.

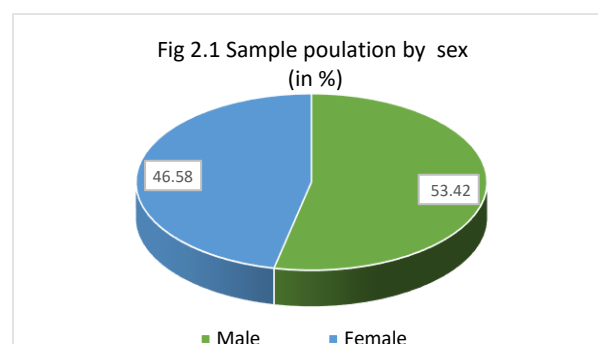


Table 2.2: Distribution of Sample Population by Sex						
Blocks	Male		Female		Total	
	N	%	N	%	N	%
Ulunda	183	54.79	151	45.21	334	100
Biramaharajpur	153	51.86	142	48.14	295	100
Total	336	53.42	293	46.58	629	100

Sources: Baseline Survey 2023

Distribution of the Sample population in Ulunda block (Table 2.2) reveals that about 54.79 per cent are male and 45.21 per cent are female. Similarly, in Biramaharajpur block, it is found that 51.86 per cent are male and 48.14 per cent are female. Comparison between two Blocks in Subarnapur District shows that the average male population is higher than the female.

2.4 Sample Population by their Marital Status

Marital status defines one's identity in society. The Baseline data shows that 52.46 per cent are married and 44.67 per cent are unmarried, 2.38 per cent of women are widows, and only 0.48 per cent of widowers is found in the sample households (Fig. 2.2 & Table 2.3). Marital status of the sample population in Ulunda block reveals that about 53.59 per cent are married and 43.41 per cent are unmarried, 2.40 per cent

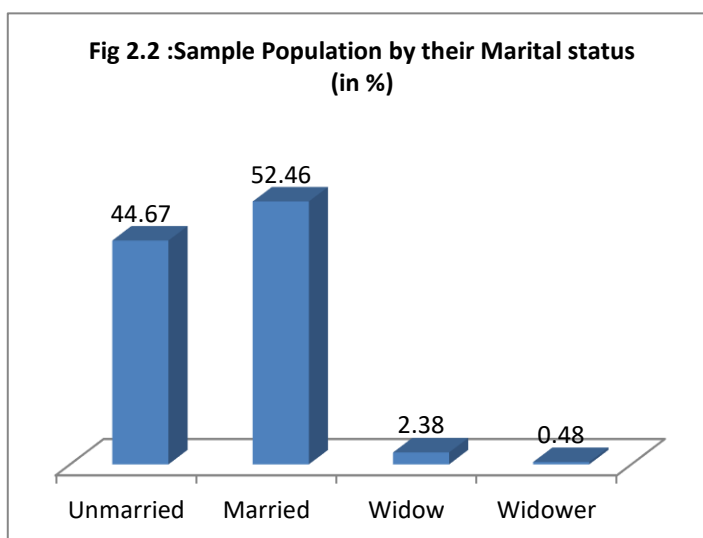


Table 2.3: Distribution of sample HHs by their marital status							
Sl.	Blocks	Ulunda		Biramaharajpur		Total	
		N	%	N	%	N	N
1	Unmarried	145	43.41	136	46.1	281	44.67
2	Married	179	53.59	151	51.19	330	52.46
3	Widow	8	2.40	7	2.37	15	2.38
4	Widower	2	0.6	1	0.34	3	0.48
Total		334	100	295	100	629	100

Sources: Baseline Survey 2023

of women are widows, and only 0.60 per cent of widowers is found in the sample Households. Similarly, in Biramaharajpur, 46.10 per cent are married and 51.19 per cent are unmarried, 2.37 per cent of women are widows, and only 0.34 per cent of widows is found in the sample Household.

2.5 Sample Population by Age Group

The distribution of the sample population by age groups for Ulunda and Biramaharajpur blocks is shown in Table 2.4. Out of the total 629 respondents, the majority 46.10 per cent belong to the adult age group (19–44 years). This is followed by the middle-aged group (45–59 years) which constitutes 17.17 per cent of the sample population. Adolescents (13–18 years) form 11.61 per cent while

children (6–12 years) represent 11.92 per cent of the surveyed population. Infants (0–2 years) account for 2.54 per cent and pre-school-aged children (3–5 years) constitute 5.72 per cent. The elderly population (60 years & above) comprises 4.93 per cent of the total respondents. Block-wise analysis reveals that Ulunda has a slightly higher proportion of adults 47.01 per cent compared to Biramaharajpur 45.08 per cent, whereas in Biramaharajpur shows a higher share of adolescents 13.56 per cent and middle-aged persons 18.98 per cent. The old age population is relatively higher in Ulunda 5.99 per cent compared to Biramaharajpur 3.73 per cent.

Table 2.4: Distribution of Sample Population by their Age Group

Sl.	Age Group	Ulunda		Biramaharajpur		Total	
		N	%	N	%	N	%
1	Infant	9	2.69	7	2.37	16	2.54
2	Pre-school	22	6.59	14	4.75	36	5.72
3	Children	41	12.28	34	11.53	75	11.92
4	Adolescent	33	9.88	40	13.56	73	11.61
5	Adults	157	47.01	133	45.08	290	46.10
6	Middle Age	52	15.57	56	18.98	108	17.17
7	Old age	20	5.99	11	3.73	31	4.93
Total		334	100	295	100	629	100

Sources: Baseline Survey 2023

2.6 Education among the Sample Population

The educational status of the surveyed population from Ulunda and Biramaharajpur blocks is presented in Table 2.5. The findings indicate that out of the total 629 respondents, the largest proportion 40.38 per cent have attained secondary-level education. Primary-level education accounts for 27.19 per cent of the sample, while 14.79 per cent of respondents are illiterate. In terms of higher education, 6.36 per cent have completed higher secondary education, 2.38 percent are graduates, and 1.43 per cent hold postgraduate qualifications.

Table 2.5: Distribution of Sample Population by their Education

Sl.	Education	Ulunda		Biramaharajpur		Total	
		N	%	N	%	N	%
1	Illiterate	58	17.37	35	11.86	93	14.79
2	Primary	93	27.84	78	26.44	171	27.19
3	Secondary	127	38.02	127	43.05	254	40.38
4	Higher Secondary	17	5.09	23	7.80	40	6.36
5	Graduation	7	2.10	8	2.71	15	2.38
6	Post-Graduate	6	1.80	3	1.02	9	1.43
7	Others	26	7.78	21	7.12	47	7.47
Total		334	100	295	100	629	100

Source: Baseline Survey, 2023

Additionally, 7.47 per cent of respondents reported having other forms of education such as vocational training or informal education. Block-wise analysis shows that in Ulunda, 38.02 per cent

of respondents have completed secondary education, followed by 27.84 per cent with primary-level education and 17.37 percent who are illiterate. In Biramaharajpur, secondary-level education is slightly higher 43.05 per cent, while primary education accounts for 26.44 per cent and illiteracy is lower 11.86 per cent compared to Ulunda.

2.7 Sample HHs by Religion

Religion is a social institution that defines the beliefs and practices of a certain community. In the Baseline survey (Table 2.6), it is found that in the Biramaharajpur block majority of Hindus are 75.00 per cent and Christians are 25.00 per cent living. Like that in Ulunda Block majority of Christians are 58.75 per cent and Hindus are 41.145 per cent living.

Table 2.6 Distribution of Sample HHs by their Religion				
<i>Blocks</i>	Hindu		Christian	
	N	%	N	%
Ulunda	33	41.45	47	58.75
Biramaharajpur	60	75.00	20	25.00
Total	93	58.12	67	41.88

Source: Baseline Survey 2023

2.8 Sample HHs by type of Family

As far as the type of family is concerned, the Baseline data shows (Table 2.7) that across both the blocks in the district, people prefer to stay in a nuclear family. As found, out of the total sample population across the Biramaharajpur and Ulunda Blocks, the highest number of 144 sample HHs (90.00 per cent) constitutes the nuclear family. In the case of joint families, there are only 16 sample HHs (10 per cent), and no extended families are found in the sample blocks.

Table 2.7: Distribution of Sample HHs by their Type of Family				
Blocks	Nuclear		Joint	
	N	%	N	%
Ulunda	72	90.00	8	10.00
Biramaharajpur	72	90.00	8	10.00
Total	144	90.00	16	10.00

Source: Baseline Survey 2023

2.9 Possession of Ration Card

Table 2.8 presents the distribution of sample households by their possession of ration card is found to be the highest (98.75 per cent) in Biramaharajpur. It is followed by Ulunda block (97.50 per cent). Across the two blocks, it is found that out of the total 98.12 per cent of the sample HHs possess ration card.

Table 2.8: Distribution of Sample HHs by their Ration Card				
Blocks	Households without Ration Card		Households with Ration Card	
	N	%	N	%
Ulunda	2	2.50	78	97.50
Biramaharajpur	1	1.25	79	98.75
Total	3	1.88	157	98.12

2.10 Type of House

In the Baseline Survey 2023, Phase VII (Fig 2.3), it is found that out of 160 sample HHs majority of 104 HHs have reported that they have Kutcha house (65.00 per cent), followed by 32 HHs have Semi-Pucca house (20.00 per cent) and only 24 HHs have Pucca house (15 per cent). Block-wise distribution is shown in Table 2.9 below.

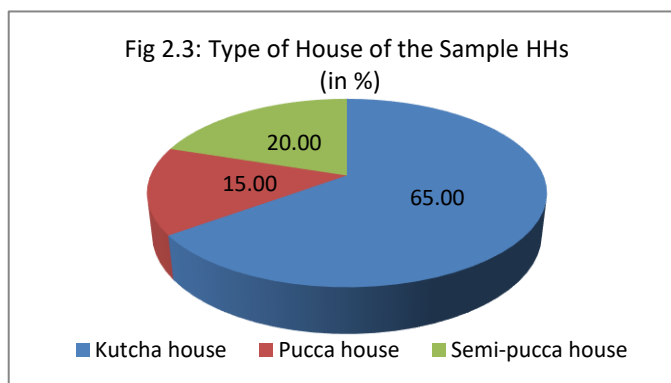


Table 2.9: Distribution of Sample HHs by their Type of House

Blocks	Kutcha house		Pucca house		Semi-pucca house	
	N	%	N	%	N	%
Ulunda	47	58.75	12	15	21	26.25
Biramaharajpur	57	71.25	12	15	11	13.75
Total	104	65	24	15	32	20

Source: Baseline Survey 2023

2.11 Occupation

Most of the time, the occupation and income of a family determine its standard of living. Hence, the occupation of the family members determines the lifestyle of the HH. As revealed in the Baseline Survey, (Table 2.10) in Ulunda and Biramaharajpur blocks reveal that out of the total sample population of 629, about 29.89 per cent are Students, followed by Farmers (27.50 per cent). While 9.00 per cent are working in the Government Sector, 12.08 per cent work as Labourers. Housewives make up to 20.35 per cent of the total sample population. The unemployed and others are at 5.25 per cent and 3.50 per cent respectively .

Table 2.10: Distribution of sample population by their occupation

Sl.	Occupations	Ulunda		Biramaharajpur		Total	
		N	%	N	%	N	%
1	Agriculture	88	26.35	85	28.81	173	27.50
2	Daily Labour	41	12.28	35	11.86	76	12.08
3	Govt. Sector	1	0.30	4	1.36	5	0.79
4	Pension	4	1.20	0	0.00	4	0.64
5	Student	101	30.24	87	29.49	188	29.89
6	House wife	72	21.56	56	18.98	128	20.35
7	Unemployed	14	4.19	19	6.44	33	5.25
8	Others	13	3.89	9	3.05	22	3.50
Total		334	100	295	100	629	100

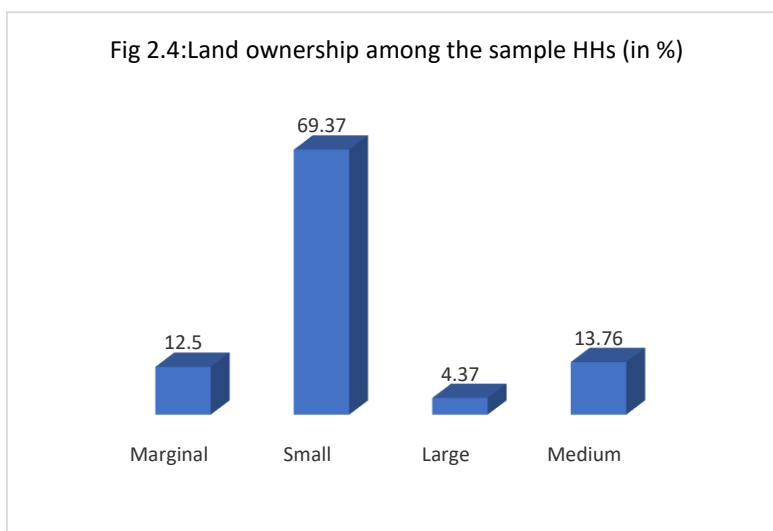
Source: Baseline Survey 2023

Similarly, block-wise distribution of occupation revealed that in the Ulunda block, about 30.24 per cent are students, followed by farmers, which constitutes 26.35 per cent. While only 12.28 per cent worked as laborers and 0.30 per cent worked in government sectors. Housewives made up 21.56 per

cent of the population. The unemployed and others had 4.19 per cent and 3.89 per cent, respectively. In Biramaharajpur, out of the total population of 295 persons, 29.49 per cent are students, followed by farmers, 28.08 per cent. While only 1.36 per cent are working in government Sectors, 12.08 per cent work as laborers. Housewives made up 18.98 per cent of the population. The unemployed and others had 6.44 per cent and 3.05 per cent respectively.

2.12 Land ownership among the Sample HHs

Land ownership is categorized as landless, marginal, small, medium and large. Figure 2.4 shows that out of the total households, 13.76 per cent have medium, 12.5 per cent have marginal, 4.37 per cent have small and 69.37 per cent have small land ownership. As highlighted, the land ownership status of sample households in Ulunda and Biramaharajpur blocks of Subarnapur district. In Ulunda block, 62.5 per cent of



households have small land ownership, followed by 12.5 per cent having medium land ownership. Similarly, in Biramaharajpur, 76.25 per cent of households have small land ownership, followed by 12.5 per cent having medium land ownership (Table 2.11) .

Table 2.11: Distribution of sample HHs by their Land Ownership (in Acre)								
Blocks	Marginal		Small		Medium		Large	
	N	%	N	%	N	%	N	%
Ulunda	12	15	50	62.5	12	15	6	7.5
Biramaharajpur	8	10	61	76.25	10	12.5	1	1.25
Total	20	12.5	111	69.37	22	13.76	7	4.37

Source: Baseline Survey, 2023

2.13 Annual Income of the Sample HHs

Household income refers to the total gross income received by all members of a household over the year. As observed in the Baseline Survey (Table 2.12) 8.12 per cent of the sample Households have an income below Rs.40000/-. Nearly 35.00 per cent of the sample Households income comes in the range of Rs.40001/- to Rs.80000/-, 40.00 per cent of the sample households have an income between

Table 2.12: Distribution of sample households by their Annual Income (in Rs)										
Blocks	Up to Rs.40000/-		Rs.40001- Rs.80000/-		Rs.80001- Rs.120000/-		Rs.120001- Rs.160000/-		Rs.160001- Rs.200000/-	
	N	%	N	%	N	%	N	%	N	%
Ulunda	8	10	30	37.50	29	36.25	9	11.25	4	5
Biramaharajpur	5	6.25	26	32.50	35	43.75	12	15.00	2	2.5
Total	13	8.12	56	35.00	64	40.00	21	13.12	6	3.75

Source: Baseline Survey 2023

Rs.80001/- to Rs.120000/-. Additionally, 13.12 per cent of the sample households have an income between Rs.120001/- to Rs.160000/-, while 3.75 per cent of households have an annual income between Rs.160001/- to Rs.200000/-. Moreover, not a single sample HHs have income above Rs.200000/-.

2.14 Agricultural Credit

Agriculture credit taken by the millet farmers of sample households is discussed in this section. As found in the Survey (Table 2.13) out of the 160 sample households, only 1.25 per cent have taken credit from different sources and the rest of the households have preferred not to take any loan due to many a reason.

Table 2.13: Distribution of Sample Households by their Agricultural Credit				
Blocks	Availed Credit		Did not Avail Credit	
	N	%	N	%
Ulunda	2	2.50	78	97.50
Biramaharajpur	0	0	80	100
Total	2	1.25	158	98.75

Source: Baseline Survey 2023

2.15 Conclusion

Analysis reveals that agriculture is the main occupation for most households. The vast majority of households possess ration cards, while land ownership is less prevalent among the sampled households. Out of the total, as less as 2 sample HHs have availed agricultural credit from different sources to meet their need.

Chapter III

PRODUCTION OF MILLETS

3.1 Introduction

Millet's production plays a crucial role in the agricultural landscape, particularly in regions where traditional cereal crops may struggle to thrive due to adverse climatic conditions or limited resources. The cultivation and production of millet help enhance rural livelihoods, support agricultural biodiversity, and provide opportunities for economic development in farming communities. In this context, understanding the dynamics of millet production, including cultivation practices, market access, and the socio-economic factors affecting farmers, is essential for promoting this ancient grain as a viable and sustainable alternative in the modern agricultural paradigm. In Subarnapur District, agricultural activities are carried out by both male and female members of the household. Paddy is the main crop in the district. Besides, these farmers are cultivating vegetables. It is also observed that some of the sample households cultivate millet for their consumption purposes.

3.2 Area, Production and Cropping Pattern

Table 3.1 presents the cropping pattern is being adopted by the respondent sample households in the two blocks is quite prominent. Out of 160 sample households, paddy is cultivated by all the households (100 per cent); out of the total only 4 sample households (2.50 per cent) in Ulunda Block cultivate millets during the year 2022 across the block. In addition to that, during the period, in Ulunda Block 9 sample respondent HHs (11.25 per cent) and in Biramaharajpur Block 3 sample HHs (5.00 per cent) had cultivated vegetables.

Table 3.1: Distribution of Sample Households by their Cropping Pattern						
Blocks	Paddy		Millets		Vegetables	
	N	%	N	%	N	%
Ulunda	80	100	4	5.00	9	11.25
Biramaharajpur	80	100	0	0	4	5.00
Total	160	100	4	2.5	13	8.13

Source: Baseline Survey, 2023

3.3 Annual Expenditure under Different Crop

The average annual expenditure of different crops in the Ulunda and Biramaharajpur blocks of Subarnapur district is presented in table 3.2. Mostly, paddy and vegetable cultivation are found in the sample blocks. The total operational land is 533 acres and the average annual expenditure on paddy sum of Rs.8686.67. It is also found that in Ulunda Block, out of the total four sample households had cultivated millets covering 2 acres of land and an average of Rs.2625.00 has been spent by each farmer for cultivating millets in the said Block.

Table 3.2: Average Annual Expenditure under Different Crops (in Rs.)						
Blocks	Paddy		Millets		Vegetables	
	Acres	Avg.	Acres	Avg.	Acres	Avg.
Ulunda	282.5	7985.84	2	2625	9.5	8210
Biramaharajpur	250.5	9477.04	0	0	5.2	7307.09
Total	533	8686.67	2	2625	14.7	7891.15

Source: Baseline Survey, 2023

3.4 Area, Production and Yield of Millets

As found in the Survey, the respondent sample HHs in Subarnapur district, across the two sample Blocks it is indicated that the production of millets is only in the form of Mandia. It is also found that Mandia has been cultivated by 4 Sample HHs covering total in 2 acres of land in the Kharif Season and with a total the total production 4 Qtls. Moreover, the yield was 2 quintals per acre among the sample HHs in Subarnapur District. It is also revealed that during the Rabi and Summer seasons, not a single sample of HH cultivate millets due to a number of reasons.

3.5 Type of Land being used for Millets Cultivation

As shared by the sample respondent HHs during the Baseline Survey, 2023 that in both Ulunda and Biramaharajpur Block in Subarnapur District, the upper land category comprises cultivated areas that are typically situated on higher elevations or slopes, which can affect water drainage and soil composition. In the case of the sample households, 2 acres of upper land are utilized for millet cultivation by the farmers of Ulunda block.

3.6 Types and Sources of the Millets Seed being Used by the Sample HHs

According to the Baseline Survey 2023, millets farming households in the Ulunda block of Subarnapur district believe that seed quality is a crucial component of cultivation and crop production. Most of the time, the quality of seeds is used to determine the volume of production. Good quality seeds are preserved for the next crop to reap the benefits. It was made to understand the general perception of millet farmers. They usually prefer local seeds for the millet cultivation rather than use of Certified seeds or HYV seeds. Along with they prefer their own seeds for millet cultivation. No sample Households purchase seed from the market, NGOs, Govt/Community seed center, or borrow from relatives.

3.7 Sample Millets Farmer's perception on the Quality of the Seeds

According to the respondents of millet farming households, the quality of seed is an important component of the whole cultivation. It is crucial for successful plant growth and crop production. Among the 4 sample farming households, 3 farmers say that the quality of seeds is good and 1 farmer says the seed quality is average.

3.8 Methods of Millets Cultivation adopted by the Sample HHs

The Four Sample household farmers in Ulunda block are cultivating millets by utilizing the broadcasting and Line showing methods for sowing the seeds, rather than employing any alternative methods. Among them, 2 sample households' farmers use the Broadcasting method and another 2 sample households' farmers use the Line Sowing method. It is also observed that they are not using any other

method i.e. Line Transplantation (LT) or System of Millet Intensification (SMI) that needs more water and care. During the Baseline Survey, it is also observed that the sample HH farmers are preferring the Mono Farming system for their millet cultivation.

3.9 Use of Fertilizer and Pesticides

During the Baseline Survey, it is found that both Organic Manure and Chemical Fertilizers are being used by the farmers in Subarnapur District. It is also found that Organic Manure is being prepared by the sample HH farmers, whereas the Chemical Fertilizers are being purchased from the local market. As many as three farmers use own Organic Manure and only one farmer uses Chemical Fertilizer. As revealed the entire sample HHs also use Bio-Pesticides and Chemical Pesticides for their millet's cultivation, as and when required.

3.10 Weeding Practices by the Sample HHs

During the Baseline Survey, it is observed that the sample Households' farmers prefer manual weeding practices for their millet's cultivation. They also shared that manual weeding practices for millets cultivation is a common method used in the region.

3.11 Storage of the Seeds

As revealed in the Baseline Survey, out of the total 4 sample HHs of Ulunda block in Subarnapur district use jute bags for the storage of their millet's seeds. The respondent sample farmers also shared that this method is chosen by them due to the breathable (free ventilation) nature of jute, which helps maintain seed's health, prevents moisture from being accumulated leading to its longevity, thereby reducing the risk of spoilage of the seeds.

3.12 Reason for Not Cultivating Millets

As revealed by the Baseline Survey (Table 3.3) that most of the people are not cultivating millets due to various reasons, such as the crop is not profitable, shortage of land, non-availability of seeds and so on. As shared by the sample respondent HHs, out of the total 18 sample HHs (11.25 per cent) revealed that millets cultivation is not profitable, due to shortage of land (0.63 per cent) they are not going for millets cultivation. Due to unavailability of seeds (55.00 per cent) and lack of irrigation (33.13 per cent) are the other major reasons for the sample HHs not preferring millets cultivation in both the Blocks.

Table 3.3: Distribution of Sample Households by reasons for not Cultivating Millets								
Blocks	Not Profitable		Shortage of land		Non-availability of seed		Lack of irrigation	
	N	%	N	%	N	%	N	%
Ulunda	15	18.75	1	1.25	43	53.75	21	26.25
Biramaharajpur	3	3.75	0	0	45	56.25	32	40.00
Total	18	11.25	1	0.62	88	55.00	53	33.13

Source: Baseline Survey 2023

3.13 Conclusion

As found in the Baseline Survey, the sample households in Biramaharajpur and Ulunda block of Subarnapur district are engaged largely in Paddy, Millets and Vegetable cultivation. Paddy is the main crop produced in the area and they restrict their cultivation to one season (Kharif) only. As revealed the quality of seed used for cultivation by them ensures the productivity. Largely Broadcasting Method are being used by the sample HHs for their paddy and millets cultivation. There are also the instances of Line Transplantation method being used by their neighbour farmers in some cases.

Chapter IV

CONSUMPTION OF MILLETS

4.1 Introduction

The chapter explores the diversity of millet varieties, recipes and dishes that are being prepared and consumed by the sample households and also its mode of preparation. By doing so, the chapter aims to provide a comprehensive picture of millet consumption pattern and preferences among the sample households in Subarnapur district.

4.2 Consumption of Millets by the Sample HHs

According to the baseline survey (Table 4.1), millets consumption in Subarnapur district is 15.63 per cent. Out of the total, 11 sample HHs (13.75 per cent) consume millets in Ulunda block and 14 sample HHs (17.50 per cent) consume millets in Biramaharajpur block. It is also observed in the Survey that in Biramaharajpur Block, 0.73 Kg, and in Ulunda Block, 4.00 Kg of millets are being consumed by each sample HH during the year 2022.

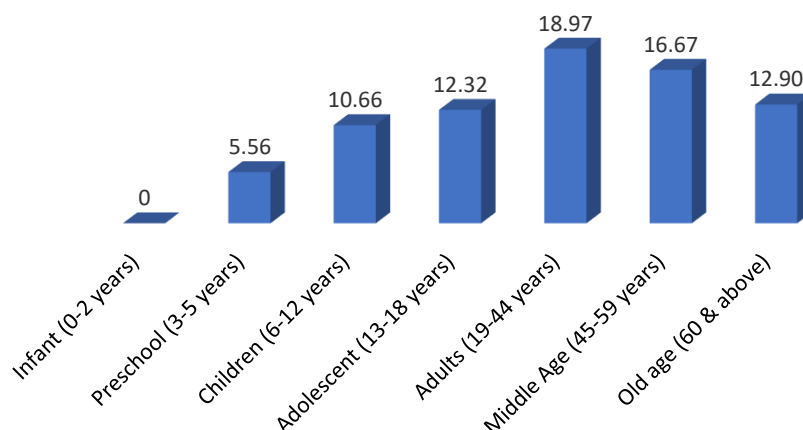
Table 4.1: Consumption of Millets by the Sample Households				
Blocks	Consume Millets		Do not Consume	
	N	%	N	%
Ulunda	11	13.75	69	86.25
Biramaharajpur	14	17.50	66	82.5
Total	25	15.63	135	84.37

Source: Baseline Survey, 2023

4.3 Millets Consumption across Age Group

Fig. 4.1 explains the distribution of millets consumption among the total 629 sample population by their age group, it is clear that as many as 96 sample people (15.26 per cent) consume millets. The rate of millets consumption is highest among the Adult Population (18.97 per cent), followed by the Middle Age group (16.67 per cent). It is also revealed that out of the total 31 millets consuming sample population, as many as 4 (12.90 per cent) come in the Old Age group. The rate of millets consumption among Pre-schools and Children is 5.56 per cent and 10.66 per cent respectively. As observed, consumption among the Adolescents, only 9 (12.32 per cent) consume millets. Hence, from the Baseline Survey, it is also revealed that the younger generation is yet to accept millets as their staple food.

Fig 4.1 Consumption of millets across age groups (in %)



Similarly, distribution of millets consumption (Table 4.2) by the sample HHs in Ulunda block reveals that, out of a total of 334 sample populations, 52 (17.31 per cent) people from the Middle Age group consume millets, followed by the Adults (16.56 per cent) and Old Age (15 per cent) group. Only 4 children (9.76 per cent) consume millets. Similarly, in Biramaharajpur block, out of a total 295 sample population and 49 millets consuming only 14.29 per cent of people are from the middle age group, followed by adults, 21.80 per cent and the old age group, 18.18 per cent. The rate of millet consumption among preschoolers and children is 7.14 per cent and 11.76 per cent respectively.

Table 4.2: Millets Consumption by the Sample HHs across Age Group

Age Group	Ulunda			Biramaharajpur			Total		
	Popula tion	N	%	Populat ion	N	%	Popul ation	N	%
Infant (0-2 years)	9	0	0.00	7	0	0.00	16	0	0.00
Preschool (3-5 years)	22	1	4.55	14	1	7.14	36	2	5.56
Children (6-12 years)	41	4	9.76	34	4	11.76	75	8	10.67
Adolescent (13-18 years)	33	4	12.12	40	5	12.50	73	9	12.33
Adults (19-44 years)	157	26	16.56	133	29	21.80	290	55	18.97
Middle Age (45-59 years)	52	9	17.31	56	8	14.29	108	18	16.67
Old age (60 & above)	20	3	15.00	11	2	18.18	31	4	12.90
Total	334	47	14.07	295	49	16.61	629	96	15.26

Source: Baseline Survey 2023

4.4 Millets Consumption during Different Meals in a Day

The baseline Survey shows that across Ulunda and Biramaharajpur Block, total 25 Sample households consume millets during different meals of the day. As observed in the Baseline Survey that in Ulunda Block all sample HHs are consuming millets in their Breakfast, and 9 sample HHs (81.81 per cent) consume millets during their Lunch. In the same way in Biramaharajpur Block all sample HHs are taking millets in their Breakfast and 10 sample HHs (71.42 per cent) consume millets during their Lunch. It is also found that none of the sample households consume millets either during their

Evening Snack or Dinner (Table 4.3).

Table 4.3: Millets Consumption during different Meals in a Day				
Blocks	Breakfast		Lunch	
	N	%	N	%
Ulunda	11	100	9	81.81
Biramaharajpur	14	100	10	71.42
Total	25	100	19	76.00

Source: Baseline Survey 2023

4.5 Millets Consumption by the Sample HHs across Seasons

The Consumption pattern of the sample HHs across seasons indicates that millet consumption is higher in the summer season compared to the Rainy and Winter seasons. Sample households preferred millets in the summer season in the form of drinks and cooked millet. As found in the Baseline Survey (Table 4.4) that 17 sample HHs (68.00 per cent) consume millet during the summer season and 10 sample HHs (40.00 per cent) consume millets during the winter season.

Table 4.4: Millets Consumption by the Sample HHs across Seasons					
Blocks	No of HHs consumed Millets	Winter		Summer	
		N	%	N	%
Ulunda	11	4	36.36	8	72.72
Biramaharajpur	14	6	42.85	9	64.28
Total	25	10	40.00	17	68.00

Source: Baseline Survey 2023

4.6 Source of Millets being Consumed by the Sample Households

According to the baseline survey (Table 4.5), only four sample households in Ulunda Block were engaged in millet cultivation, and these households also consumed the millet they produced. Overall, out of the total sample households, only 25 households 15.63 per cent reported consuming millets. Notably, most of these millet-consuming households purchased millets from the market to meet their requirements. Block-wise data reveals that in Ulunda Block, 11 households 13.75 per cent reported millet consumption, of which 4 households 36.36 per cent consumed their own produce, while 7 households 63.64 per cent purchased millets. In Biramaharajpur Block, out of 80 sample households, 14 households 17.50 per cent reported millet consumption, all of which was through purchasing from the market.

Table 4.5: Sources of millets being consumed by the sample households						
Blocks	Own Production		Purchased		Total	
	N	%	N	%	N	%
Ulunda	4	36.36	7	63.64	11	13.75
Biramaharajpur	0	0	14	100	14	17.5

Source: Baseline Survey, 2023

4.7 Consumption of Millet Recipes

From the Baseline study (Table 4.6) it is found that people were consuming millets in several ways in the form of *Tampo/Pitha*, *Khiri*, *Chhatua*, *Jau*, *Upma* and so on. As observed out of the total, 19 sample HHs (76.00 per cent) consume millets in the form of *Jau or Torani and Chhatua*, followed by *Tampo or Pitha* being consumed by 19 sample HHs (76.00 per cent). Other millets recipes, including *Khiri* is being consumed by 15 sample HHs (60.00 per cent), *Idli or Upma*, are also consumed by only one sample HH (4 per cent) .

Table 4.6: Millets consumption by the sample HHs in different recipes							
Sl.	Recipes	Ulunda		Birmaharajpur		Total	
		N	%	N	%	N	%
1	<i>Tampo/ Pitha</i>	9	81.81	7	50.00	16	64.00
2	<i>Chhatua</i>	11	100.00	8	57.14	19	76.00
3	<i>Jau/ Torani</i>	7	63.64	12	85.71	19	76.00
4	<i>Khiri</i>	5	45.45	10	40.00	15	60.00
5	<i>Idli/ Upma</i>	1	9.09	0	0	1	4.00

Source: Baseline Survey, 2023

Similarly, distribution of the millets consuming sample HHs in the form different millet recipes in Ulunda block it is found that Millets *Chhatua* is being consumed by all 11 sample HHs, followed by 9 sample HHs consuming *Tampo/ Pitha* (81.81 per cent). Other millets recipes like *Jau/Torani* are also being consumed by 7 sample HHs (63.64 per cent). In Birmaharajpur block, out of the total 12 sample HHs (85.71 per cent) consume millets in the form of *Jau or Torani* and another 7 sample HHs (50.00 per cent) consume *Tampo/ Pitha*.

4.8 Conclusion

Findings of the Baseline Survey 2023 show that consumption of millets is higher in the summer season. Most of the respondents, except infants and preschool children, reported consuming millets in many cases. Most of the respondents consume millets during lunchtime. *Jau/Torani* is the most common millet recipe found in these two blocks.

Chapter V

PROCESSING AND MARKETING OF MILLETS

5.1 Introduction

Marketing of millets depends on the extent of millets produced in the locality and other accessible places in the State. Based on the findings and analysis of the Baseline Survey, this chapter discusses the various methods being adopted by the sample households on millets farming, processing, and availability.

5.2 Processing of Millets by the Sample HHs

As it is found in the Baseline Survey, 2023 that out of the total four millets producing sample HHs (100 per cent) are processing their millets for their consumption only. They also added that as there is no other means by using the traditional method only, they process their produce all the time.

5.3 Methods adopted for Processing and Transportation of Millets

As revealed in the Baseline Survey, 2023 that all four millets farming sample households are using traditional methods to process their millets. Moreover, all the four sample HHS are found to be utilizing their own Bicycles for transportation of the millets from their field and other purposes.

5.4 Marketing of Millets

As revealed in the Baseline Survey, 2023 all the sample millets farmer HHs store their production for their own consumption for the entire year. It is also shared by them that they keep a portion of their produce as seed to be used for further cultivation next season. However, the study observed that in the case of both the blocks of Sundargarh district, none of the sample households are found to be selling their produce or even the value-added products. As revealed during the survey, as their production is very less they don't prefer to sell their produce.

5.5 Conclusion

The effective processing and marketing of millets are crucial for enhancing its accessibility and acceptance in the market. By focusing on quality processing methods and strategic marketing initiatives, stakeholders can promote millets not only as a staple food but also as a nutritious alternative that supports sustainable agriculture and health. With the rising awareness of health and nutrition, millets have the potential to regain their status as a valued food source in diverse culinary cultures. During the Baseline Survey, it was found that none of the sample households were selling millets across the two blocks. However, some households consume it by purchasing millets from the local market.

Annexure 1: Mapping of Baseline Survey, 2023 Data - Subarnapur District

Sl. No	Indicators	Unit	Baseline Value		
			Ulunda	Biramaharajpur	Total
1	Sample households Cultivating Millets	Total	4	0	4
2	Types of Millets Cultivated (in 2022)				
	Mandia		4	0	4
3	Area under Millets/ HH (Acre)	Acre	2.00	0	2.00
4	Millets/Ragi Production per Sample HH	Qtls.	.50	0	.50
5	Production of Millets BY HHs	Qtls	4.00	0	4.00
6	Package of Practices by the HHs				
Kharif	Broadcasting	N	4	0	4
	LS		0	0	0
	LT		0	0	0
	SMI		0	0	0
Rabi	Broadcasting		0	0	0
	LS		0	0	0
	LT		0	0	0
	SMI		0	0	0
Summer	Broadcasting		0	0	0
	LS		0	0	0
	LT		0	0	0
	SMI		0	0	0
7	Yield Rate (Qnt./Acre)	Qtl	2.00	0	2.00
8	Households Consuming Millets				
	Breakfast	N	11	14	25
	Lunch	N	9	10	19
	Evening Snacks		0	0	0
	Dinner		0	0	0
9	Popular Millets Recipes (% Households)				
	Tampo/Pitha	%	81.81	50.00	64.00
	Jau/Torani	%	63.64	85.71	76.00
	Khiri	%	45.45	40.00	60.00
	Idli/Upma	%	9.09	0	4.00
10	Households Processing Ragi				
	Manually	N	4	0	4
	Machines	%	0	0	0
	Both	%	0	0	0
11	HH Selling Millets				
	Middleman	%	0	0	0
	Mandi	%	0	0	0
	Hat	%	0	0	0
	Money lender/ Sahukar	%	0	0	0
	Sahukar	%	0	0	0
12	Distress sale (% of Households)	%	0	0	0

Annexure 2
Confidential and to Be Used for Research Purpose Only



Households Schedule for Baseline Survey 2023
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 Household's 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
	Agriculture	Land Preparation	Transplantation/ Sowing	Weeding	Fertilizers/ Pesticides	Harvesting	Others	Amount (in Rs.)
1	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 loans? 1-Yes 2-No 3. 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

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

If yes, give millet-wise production details

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. Do 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. **Millet 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, please 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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