BASELINE SURVEY: PHASE VI

BALANGIR 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

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

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

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

Dr. Yeddula Vijay, IAS
Director, NCDS

ACKNOWLEDGEMENT

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

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

I would like to extend my sincere appreciation to our esteemed Director, Dr. Yeddula Vijay (IAS), 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. 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 Balangir 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

EXECUTIVE SUMMARY

The Special Programme for the Promotion of Millets in Odisha (SAA Phase VI) was launched in Balangir district during Kharif 2021, covering Belpada, Patnagarh, and Titilagarh blocks. The study, conducted by the Nabakrushna Choudhury Centre for Development Studies (NCDS), aims to assess the socio-economic conditions, cropping patterns, and millet production–consumption dynamics among tribal and smallholder households prior to the intervention. A total of 240 households were selected through multi-stage stratified random sampling from the 1,150 programme households identified for SAA implementation.

The socio-economic profile reveals that 44.58 percent of households belong to Scheduled Tribes and 41.67 percent to OBC/SEBC groups, while 42.20 percent of the population depends primarily on agriculture for livelihood. Males constitute 53.43 percent and females 46.57 percent of the total population, indicating a slightly skewed sex ratio. Educational attainment remains modest, with 31.71 percent of individuals illiterate and only 9.17 percent being graduates. Landholding distribution shows that 42.92 percent of households are marginal farmers and 41.25 percent are small farmers. Housing conditions reflect rural realities, with 41.67 percent living in Kutcha and 29.58 percent in Semi-Pucca houses, and 96.25 percent of households possessing ration cards.

Paddy is universally cultivated across all surveyed households (100 percent), reaffirming its status as the staple crop. Millet cultivation is undertaken by 55.42 percent of households, with the highest participation in Titilagarh (71.25 percent), followed by Belpada (52.5 percent) and Patnagarh (42.5 percent). Of the 133 millet-cultivating households, 69.92 percent use local seed varieties and 30.08 percent use hybrid varieties. The average millet productivity stands at 0.89 quintals per acre, with Titilagarh block recording the highest yield (1.03 qtls/acre). Line transplantation (52.63 percent) and line sowing (42.11 percent) are the major cultivation methods, while non-cultivation is primarily due to shortage of land (51.4 percent) and low profitability (46.7 percent), followed by non-availability of seeds (23.4 percent) and lack of irrigation (9.3 percent).

Millet consumption patterns reveal strong seasonal and cultural preferences. Nearly 92.97 percent of households consume millets during summer, compared to 58.30 percent in the rainy season and 35.43 percent in winter. The average annual consumption per household is 32.46 kg, with Titilagarh reporting the highest average at 11.93 kg. Consumption is nearly universal during breakfast (100 percent) and remains high during lunch (92.83 percent) and dinner (83.86 percent). Traditional millet-based dishes such as Jau or Torani (95.52 percent) and Tampo or Pitha (94.17 percent) dominate household diets, followed by Khiri (67.71 percent), Chhatua and sweets (53.36 percent), and Idli or Upma (50.22 percent), underscoring millet's deep-rooted culinary significance.

Processing and marketing dynamics reflect a gradual transition toward mechanization but limited commercialization. Around 40.60 percent of households use machinery for processing, 30.08 percent rely on traditional methods, and 29.32 percent combine both. In terms of marketing, 32.08 percent of millet cultivators sell to middlemen, 20.78 percent to moneylenders or sahukars, and 29.87 percent in local markets, while direct consumer sales remain marginal (1.30 percent). No sales were reported through government mandis, indicating the absence of institutional market support.

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ABBREVIATION

AAO	: Assistant Agriculture Officer
ACS	: Additional Chief Secretary
APL	: Above Poverty Line
ASHA	: Alliance for Sustainable and Holistic Agriculture
ATMA	: Agricultural Technology Management Agency
BPL	: Below Poverty Line
DAFE	: Department of Agriculture and Farmers' Empowerment
DAFP	: Directorate of Agriculture and Food Production
DC	: Development Commissioner
DDA	: Deputy Director Agriculture
FGD	: Focused Group Discussion
HH	: Household
ha	: Hectare
IAS	: Indian Administrative Service
JDA	: Joint Director Agriculture
km	: Kilometer
MoU	: Memorandum of Understanding
MINI	: Millets Network of India
NCDS	: Nabakrushna Choudhury Centre for Development Studies
OFS	: Odisha Finance Service
SAA	: Shree Anna Abhiyan
OSG	: Other Social Groups
PD	: Project Director
Qtls.	: Quintals
RRA	: Revitalizing Rain-fed Agriculture
SC	: Scheduled Caste
SHG	: Self-help Group
ST	: Scheduled Tribe
SVA	: Sahabhagi Vikash Abhiyan
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 Glycemic index and gluten-free, making them an ideal choice for people with various health conditions. In recent times, there has been a renewed interest in 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 farmers' incomes, reduce dependence 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.

The United Nations designated 2023 as the International Year of Millets; it gets further attentions of general public including the farmers. In the Indian 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. However, during last couple of decades, the popularity of millets has declined due to the increasing adoption of modern food habits and the promotion of high-yielding crops like rice and wheat. This shift has led to a decline in soil fertility and an increased vulnerability to climate change. To address these challenges, the Government of Odisha has launched several initiatives to promote the cultivation of millets, including "The Special Programme for Promotion of Millets in Tribal Areas of Odisha (also known as Odisha Millets Mission, SAA) with a novel organisational structure was initiated by the Government of Odisha in 2017-18 emphasising production, consumption, processing, and marketing of millets. The program aims to increase production, consumption, processing, and marketing of millets in tribal areas, where they have been a staple food for generations. In this context, it is crucial to understand the significance of millets cultivation in Odisha and its potential to promote sustainable agriculture and improve food security. Among other Millets found in Odisha, Mandia constitutes a significant share of about 95 per cent.

The SAA program tried to revive these nutrient-rich millets in the agricultural landscape.It aimed to promote the production, consumption, processing, and marketing of millets, with a particular focus on tribal areas. The program had a unique structure that emphasized cultivating traditional millets such as Ragi, Gurji, Kosla (small millet), Kodo, Kangu (foxtail millets), and Jowars, which were 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 SAA (formerly OMM) was expanded to 58 blocks of 17 districts, including three blocks of Balangir district. This baseline survey report aims to provide the survey report aims up provide the status of millets production, consumption status of millets production, consumption, processing, and marketing in these four blocks before the implementation of the programme.

1.2 District Profile

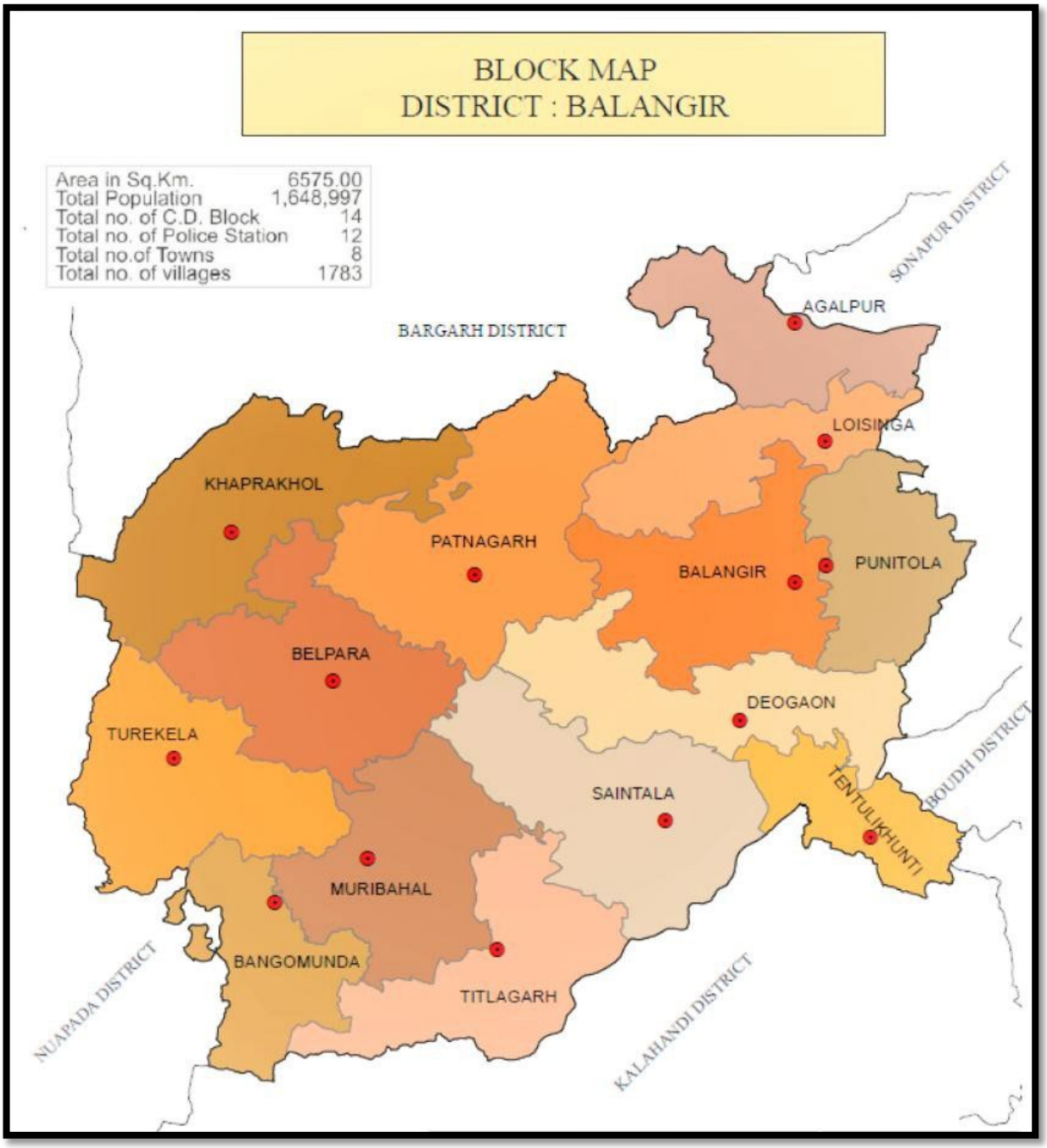
Balangir is one of the economically backward districts of western Odisha with a geographical area of 6569 Sq. Km and is an integral part of Western Orissa Development Council constituted by Govt. of Orissa very often reels under severe drought condition. About 89 percent of the population of the district lives in rural areas and agriculture is the main stay of the people. The agriculture is mostly rain fed and due to lack of adequate irrigation facilities and recurring severe drought conditions in the district, the agricultural production is very often curtailed. In the year 1996 the district witnessed an unprecedented drought situation. Balangir district lies between North latitudes 21°4' and 20°9' and East longitudes 82°41' and 83°32', failing in Survey of India top sheet nos. 64O, 64P and 64L. It is bounded on the North by Bargarh district, in the East by Subarnapur district and in the South and West by Kalahandi and Nuapada district respectively. The district is well connected by rail and roads. Two National Highways are passing through the district. The Titilagarh railway station is a junction connecting Raipur – Vizianagaram and Titilagarh – Jharsuguda broad gauge railway tracts. All the block headquarters are connected by metal roads. The district comprises three subdivisions namely Balangir, Patnagarh and Titilagarh and 14 cSAAunity Development blocks with the district headquarters at Balangir. According to 2011 census data, the total population of the district is 1648574 constituting nearly 4 percent of the total population of Orissa. The rural and urban populations are 1182871 and 154323 respectively. The rural population constitutes 88.46 % of the total population. The density of population is 251 against the state figure of 236 persons per sq. km.

1.3 Objectives

The objectives of the baseline survey were to obtain information on proposed interventions under SAA around production, consumption, processing and marketing. Along with this, the study tries to collect basic socio-economic information of respondents in the base year. The objectives of the study are:

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

Fig 1.1 Map of Balangir District with Blocks



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

Table1.1: Socio-economic and Demographic Features of Balangir District	
Indicators	**Value**
Census 2011	
Population (In Lakh)	16.5
Male	8.3
Female	8.2
Scheduled Caste	3.0
Scheduled Tribe	3.5
Others	10.0
Household (In Lakh)	4.1
Average HHs Size	4.0
Sex Ratio (Number of females per 1000 males)	987
Total Worker (In Lakh)	7.2
Main Worker	4.0
Marginal Worker	3.2
Non-Worker	9.3
Cultivator as % of Total Worker	23.11
Agricultural Laborer as % of Total Worker	45.30
Workers in Household Industry as % of Total Worker	3.98
Other Workers as % of Total Worker	27.61
Literacy Rate (%)	64.72
Total Geographical Area (sq.km)	6575
Land Use Pattern (Area in '000 ha), 2014-15	
Forest	59189
Land put to Non-agricultural use	52406
Barren and non-Cultivable Land	17168
Permanent Pasture and Other Agricultural Land	42301
Net Area Sown	268965
Cultivable Waste Land	25936
Old Fallow land	23060
Current Fallows	51468
Miscellaneous Trees and Groves	1344
Total Area under Survey	39416
Agriculture, 2013-14	
Average Fertilizer Consumption (kg/ha)	43.10
Irrigation, Kharif (ha)	67885
Irrigation, Rabi (ha)	20523
Other Information	
Proportion of Villages Electrified (as on March 2014)	1764
Credit Deposit Ratio (as on December 2015)	50.04
No. of banks (in Nos.)	146

Source: http://www.desorissa.nic.in/pdf/2015-dshb-Balangir.pdf

1.4 Methodology

1.4.1. Sample Design

Multi-stage sampling method has been used to select the sample HHs. In the first stage, Balangir District has been selected purposively for the study as it is one of the seven districts where state Government has introduced this programme. In the second stage, three blocks namely Belpada, Patnagarh and Titilagarh has been selected purposively. In the third stage, two GP from each block has been randomly selected, and in the last stage, 20 HHs from each village have been randomly selected. Therefore, the total number of 240 HHs from eight villages, four GP and three block haves been randomly selected from this study. The details have been presented in the following table 1.2

Table 1.2: Sample Households in Balangir District

Blocks	Programme Households (No)	Sample Households (No)	% Of HHs Covered under the survey to Programme HHs
Belpada	369	80	21.68
Patnagarh	406	80	19.7
Titilagarh	375	80	21.33
Total	1150	240	20.86

Sources: Facilitating Agency and Baseline Survey 2022

1.4.2 Data Collection, Compilation and Analysis

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

This baseline survey report is based on both secondary and primary data. The primary data was collected from the respondents in the concerned districts by using a pre-tested interview schedule (Annexure 1) and Focus Group Discussion (Annexure 2). The secondary data on the geographical information, population, agriculture, education, irrigation, forest and institutions has been collected by using various published and unpublished sources including the 2011 Census. In addition to supplement and complement the findings mode under the Baseline Survey, Focused Group Discussions (FGDs) were conducted in each selected village.

1.5 Limitations of the Study

The present Baseline Survey focuses solely on three Blocks of the Balangir 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 240 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

Baseline Survey 2022 has been divided into six Chapters' including the current introductory Chapter, which provides District profile, Objectives, Methodology and Limitations of the study. Chapter II provides Socio-economic Profile of the Surveyed HHs. Chapter III provides details on Production and Productivity of Millets. Chapter IV discusses about the Consumption Pattern of Millets. Chapter V annotates on Processing and Marketing of Millets.

CHAPTER II

SOCIO-ECONOMIC PROFILE

2.1 Introduction

This chapter looks into social and demographic profile of HHs surveyed that is their distribution by social group, religion, and gender. In addition, for the HHs surveyed, it provides the distribution by economic activities (not mutually exclusive, HH can have multiple economic activities), and distribution by house structure. It also provides information about the distribution of households by their landownership and operational holdings.

2.2 Social and Demographic Profile

The analysis of social composition of sample households under the Baseline Survey 2022, Phase VI in Balangir district shows that out of total of 240 sample households, with a significant majority, about 44.58 per cent households belongs to Scheduled Tribes (STs), while SCs, OBCs/SEBCs and Others social groups households constitute 8.33 per cent, 41.67 per cent and 5.42 per cent of total households.

Table 2.1: Distribution of Households by Social Groups

Category	Belpada		Patnagarh		Titilagarh		Total	
	No	%	No	%	No	%	No	%
SC	11	13.75	3	3.75	6	7.5	20	8.33
ST	48	60	38	47.5	21	26.25	107	44.58
OBC	20	25	27	33.75	53	66.25	100	41.67
Others	1	1.25	12	15	0	0	13	5.42
Total	80	100	80	100	80	100	240	100

Source: Baseline Survey, 2022

Similarly, block-wise distribution of households in Belpada block reveals that about 60 per cent households belong to Scheduled Tribes (STs) category, 13.75 per cent of households belong to Scheduled Castes (SCs), 1/4th of the households from Other Backward Classes or Socially and Educationally Backward Classes (OBCs/SEBCs) and only 1.25 per cent of households belonged to Others social categories. Similarly, in Patnagarh block, 47.5 per cent of total households STs, 3.75 per cent belong to SCs, 33.75 per cent belongs to OBC/SEBCs and 15 per cent of households belongs to others social categories. In the similar, in Titilagarh Block, about 26.25 per cent belong to STs, 7.5 per cent belong to SCs, 66.25 per cent of them belongs OBC/SEBCs. (Table 2.1)

2.3 Distribution of Population by Sex

The distribution of the population by sex across the three study blocks reveals a consistent male predominance. In Belpada, the male population accounts for 50.62 percent, while females constitute 49.38 percent, indicating a relatively balanced sex ratio in this block. However, in both Patnagarh and Titilagarh, the gender distribution shows a higher proportion of males. In Patnagarh, males represent 54.57 percent of the total population, whereas females make up 45.43 percent. Similarly, in Titilagarh, males account for 55.12 percent, while females constitute 44.88 percent of the population. When considering the overall distribution across all three blocks, males comprise 53.43 percent of

the total population, while females account for 46.57 percent. This consistent male predominance across the study area indicates a skewed sex ratio, which may be attributed to various demographic, social, or economic factors, such as male outmigration patterns, differential mortality rates, or gender-based population dynamics, and warrants further exploration. (Table 2.2)

Table 2.2: Distribution of Population by Sex

Blocks	Belpada		Patnagarh		Titilagarh		Total	
	No	%	No	%	No	%	No	%
Male	204	50.62	233	54.57	210	55.12	647	53.43
Female	199	49.38	194	45.43	171	44.88	564	46.57
Total	403	100	427	100	381	100	1211	100

Source: Baseline Survey, 2022

2.4 Distribution of Household Members by their Age Groups

The table presents the age-wise distribution of household members surveyed across three blocks of Balangir district—Belpada, Patnagarh, and Titlagarh. Out of a total of 1,211 individuals, the largest age group is adults (19–44 years), accounting for 41.04% of the total population, indicating a predominantly working-age population in the surveyed households. This is followed by middle-aged individuals (45–59 years) at 18.25% and adolescents (13–18 years) at 13.46%. Children aged 6–12 years make up nearly 10% of the population, while older persons (60 years and above) represent around 10.24%, highlighting a modest aging demographic. Infants (0–2 years) and pre-school children (3–5 years) form the smallest groups at 3.14% and 3.88%, respectively. This age structure suggests a relatively young and economically active population, with a smaller proportion of dependents, which may have implications for household resilience, labor availability, and social service needs. (Table 2.3)

Table 2.3: Distribution of Population of Surveyed HHs by their Age Groups

Blocks	Total	Infant		Pre-School		Children		Adolescent		Adults		Middle Age		Old	
		(0-2 Year)		(3-5Year)		(6-12 Year)		(13-18 Year)		(19-44 Year)		(45-59 Year)		(60 Year & Above)	
	No	No	%	No	%	No	%	No	%	No	%	No	%	No	%
Belpada	403	8	1.99	21	5.21	42	10.42	48	11.91	169	41.94	70	17.36	45	11.17
Patnagarh	427	18	4.22	14	3.28	48	11.24	43	10.07	180	42.15	82	19.20	42	9.84
Titlagarh	381	12	3.15	12	3.15	31	8.14	72	18.90	148	38.85	69	18.11	37	9.71
Total	1211	38	3.14	47	3.88	121	9.99	163	13.46	497	41.04	221	18.24	124	10.24

Source: Baseline Survey, 2022

2.5. Distribution of Population by Educational Status

The table 2.4 presents the educational status of members from sample households across three blocks in terms of both numbers and percentages. Overall, 31.71% of the sample population is illiterate, which is the highest among all educational categories. This is followed by those with secondary education (24.36%) and higher secondary education (23.29%). Graduation (9.17%) and postgraduate (4.46%) levels have significantly lower representation, while primary education accounts for only 3.80%. Among the districts, Titlagarh has the highest percentage of illiterates (34.38%), while Patnagarh shows relatively better educational attainment with the highest proportion of graduates (11.01%) and postgraduates (7.26%). The data reflects a clear educational divide, with a substantial

portion of the population having low levels of formal education, which can influence their socioeconomic resilience and access to opportunities.

Table 2.4: Educational Status of Members of Sample Households

Districts	Illiterate		Primary		Secondary		Higher Secondary		Graduation		Post-Graduate		Others		Total	
	No	%	No	%	No	%	No	%	No	%	No	%	No	%	No	%
Belpada	129	32.01	31	7.69	98	24.32	96	23.82	27	6.70	14	3.47	8	1.99	403	33.28
Patnagarh	124	29.04	3	0.70	96	22.48	110	25.76	47	11.01	31	7.26	16	3.75	427	35.26
Titlagarh	131	34.38	12	3.15	101	26.51	76	19.95	37	9.71	9	2.36	15	3.94	381	31.46
Total	384	31.71	46	3.80	295	24.36	282	23.29	111	9.17	54	4.46	39	3.22	1211	100

Source: Baseline Survey, 2022

2.6 Distribution of household by Religion

Hindus are more than 99 percent only one household from Muslim religion from Titlagarh block has been taken as sample.

2.7 Distribution of Land Ownership

The table 2.5 presents the distribution of 240 sample households across three blocks based on their land ownership categories. Overall, the majority of households fall under the *marginal* (0 to 2.5 acres) and *small* (2.5 to 5 acres) landholding categories, accounting for approximately 42.92% and 41.25% respectively. Only a small portion of the population owns *medium* (12.08%) and *large* (0.83%) landholdings, while *landless* households make up just 2.5% of the total. Notably, Belpada has no landless or large landholding households, whereas Patnagarh and Titlagarh have a few households in these extreme categories.

Table 2.5: Distribution of the Sample Households by their Land Ownership

Districts	Landless		Marginal (0 to 2.5 Ac)		Small (2.5 to 5 Ac)		Medium (5 to 10 Ac)		Large (10 Ac. & above)		Total	
	No	%	No	%	No	%	No	%	No	%	No	%
Belpada	0	0	33	41.25	36	45	11	13.75	0	0	80	100
Patnagarh	5	6.25	32	40	31	38.75	11	13.75	1	1.25	80	100
Titlagarh	1	1.25	38	47.5	32	40	7	8.75	1	1.25	80	100
Total	6	2.5	103	42.92	99	41.25	29	12.08	2	0.83	240	100

Source: Baseline Survey, 2022

2.8 Annual Income

Table 2.6 presents the distribution of households by their annual income across Belpada, Patnagarh, and Titilagarh blocks. The majority of households fall in the income range of ₹40,000–₹80,000, accounting for 50% in Belpada, 45% in Patnagarh, and 46.25% in Titilagarh, totaling 113 households (47.08%). The next major group earns up to ₹40,000 annually, with 41.25% in Belpada, 27.5% in Patnagarh, and 42.5% in Titilagarh, totaling 89 households (37.08%). A smaller proportion earns between ₹80,000–₹1,20,000, comprising 7.5%, 13.75%, and 10% respectively. Higher income categories are rare, with only 2.5% of households earning between ₹1,80,000–₹2,00,000 and 1.25% earning above ₹2,00,000.

Table 2.6: Distribution of HHs by their Annual Income (in Rs)														
Districts	Up to 40000		40000-80000		80000-120000		120000-160000		180000-200000		Above 200000		**Total**	
	No	%	No	%	No	%	No	%	No	%	No	%	No	%
Belpada	33	41.25	40	50	6	7.5	1	1.25	0	0	0	0	80	100
Patnagarh	22	27.5	36	45	11	13.75	5	6.25	4	5	2	2.5	80	100
Titlagarh	34	42.5	37	46.25	8	10	0	0	0	0	1	1.25	80	100
Total	89	37.08	113	47.08	25	10.42	6	2.5	4	1.67	3	1.25	240	100

Source: Baseline Study, 2022

2.9 Structure of the House

The structure of the house often considered as an important indicator of the social and economic status of the family. Data collected under the Baseline Survey 2022, Phase VI shows that out of 240 surveyed HHs across the three selected blocks in Balangir district majority of 100 HHs reported that they have Kutcha houses which constitute about 41.67 per cent of total HHs (Table 2.7). While 71 HHs has Semi-Pucca house which constitute 29.58 per cent and only 69 has Pucca houses which constitute about 28.75 per cent of the total surveyed HHs. Similarly, block wise distribution of household's house structure shows that in Belpada block, 5.per cent have Pucca house which is very low and 50 per cent have Kutcha house which is very high as compared to Patnagarh and Titilagarh blocks.

Table 2.7: Distribution of Sample HHs by House Structure								
House Structure	**Belpada**		**Patnagarh**		**Titilagarh**		**Total**	
	No	%	No	%	No	%	No	%
Kutcha	40	50	22	27.5	38	47.5	100	41.67
Pucca	4	5	35	43.75	30	37.5	69	28.75
Semi-Pucca	36	45	23	28.75	12	15	71	29.58
Total	80	100	80	100	80	100	240	100

Source: Baseline Study, 2022

2.10 Ration Card Holding Status

The distribution of sample households by their possession of ration card across the three selected blocks of Balangir districts is presented in Table 2.8. It shows that out of the 240 sample households, total 96.25 per cent Households possess ration card and remaining 3.75 per cent do not have ration card. In the three blocks of this district, more than 96.25 per cent households having ration card and which indicates that the households come under below poverty line. Only 5 per cent households do not have ration card in Belpada block, 3.75 in Patnagarh block and 2.50 per cent in Titilagarh block.

Table 2.8: Distribution of Population by Ration Card Status								
Blocks	**Belpada**		**Patnagarh**		**Titilagarh**		**Total**	
	No	**%**	**No**	**%**	**No**	**%**	**No**	**%**
Ration Card	76	95	77	96.25	78	97.5	231	96.25
NA	4	5	3	3.75	2	2.50	9	3.75
Total	80	100	80	100	80	100	240	100

Source: Baseline Study, 2022

2.11 Occupation

The distribution of population by economic activity across Belapada, Patnagarh, and Titilagarh highlights the overwhelming dependence on agriculture as the primary source of livelihood. Across all three blocks, over 40 per cent of the population is engaged in agricultural work, reflecting the rural, agrarian character of the region. Non-agricultural employment remains limited, with less than 2 per cent of the population involved in business and private sector jobs combined, and only about 1 per cent working in government employment, pointing to the lack of economic diversification. Artisanal work provides some supplementary income, particularly in Belapada and Patnagarh, where over 4 per cent of the population is engaged in traditional occupations such as handicrafts. At the same time, domestic responsibilities constitute a significant share of the population, with nearly 22 per cent in Belapada and 19 percent in Patnagarh reporting themselves as housewives, underlining the gendered nature of economic roles. A striking feature is the notably high student population in Titilagarh, where nearly 25 per cent of residents identify as students, in stark contrast to just around 1 percent in Belapada and less than 1 percent in Patnagarh. This suggests either better access to educational opportunities or different demographic and migration patterns compared to the other blocks. In contrast, unemployment levels are higher in Patnagarh (15 per cent) and Belapada (13 per cent), reflecting limited livelihood options beyond agriculture and informal work. Overall, the occupational structure of these blocks is marked by a heavy reliance on agriculture, minimal formal employment, and significant regional variations in educational participation and unemployment. (Table 2.9)

Table 2.9: Distribution of Population by their Occupation

Blocks	Belapada		Patnagarh		Titilagarh		Total	
	No	%	No	%	No	%	No	%
Agriculture	174	43.18	167	39.11	170	44.62	511	42.20
Daily Labour	9	2.23	10	2.34	10	2.62	29	2.39
Business	0	0.00	2	0.47	1	0.26	3	0.25
Govt. sector	4	0.99	11	2.58	1	0.26	16	1.32
Private sector	6	1.49	8	1.87	6	1.57	20	1.65
Artisan	18	4.47	18	4.22	8	2.10	44	3.63
Student	5	1.24	1	0.23	95	24.93	101	8.34
Housewife	87	21.59	83	19.44	38	9.97	208	17.18
Unemployed	51	12.66	62	14.52	24	6.30	137	11.31
Others	49	12.16	65	15.22	28	7.35	142	11.73
Total	403	100.00	427	100.00	381	100.00	1211	100.00

Source: Baseline Study, 2022

2.12 Conclusion

Majority of the surveyed households across the three selected blocks belongs to Scheduled Tribe (STs). Agriculture is the primary occupation for most of the people. From the various social and economic indicators mentioned in this chapter (including Tables and Figures) and corresponding analysis indicates that out of all 240 surveyed HHs across the three blocks of Balangir district majority of them possess ration cards and most of them have Pucca house.

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 and productivity of millets, usage of seeds, and package of practices in Balangir district. From HHs surveyed in Belpada, Patnagarh and Titilagarh blocks. The analysis focuses on the distribution of area under millets and other 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. Cropping Pattern of Households

The data in Table 3.1 provides a detailed overview of the cropping pattern across Belpada, Patnagarh, and Titlagarh blocks. Paddy cultivation is universal, with 100 percent of households in all three districts growing it, underscoring its status as the principal crop and staple food source. Millets cultivated by 52.5 percent of households in Belpada, 42.5 percent in Patnagarh, and as high as 71.25 percent in Titlagarh, bringing the overall average to 55.42 percent. This indicates that millet farming is particularly prominent in Titlagarh, where a higher proportion of households depend on diversified dryland agriculture.Vegetable cultivation, on the other hand, is relatively minimal, practiced by only 8.75 percent of households in Patnagarh and 3.75 percent in Titlagarh, while no households in Belpada reported growing vegetables. On average, only 4.17 percent of total households cultivate vegetables across the districts. Similarly, the category of other crops shows moderate engagement, with 31.25 percent of households in Belpada, 30 percent in Patnagarh, and 36.25 percent in Titlagarh involved in cultivating alternative crops, averaging 32.5 percent overall.The 'Others' category, which likely includes pulses, oilseeds, and other minor crops.

Table 3.1 Distribution of HHs by their Cultivation of Crops Across the Districts

Districts	Total Sample HHs	Paddy		Millets		Vegetables		Others	
		No	%	No	%	No	%	No	%
Belpada	80	80	100	42	52.5	0	0	25	31.25
Patnagarh	80	80	100	34	42.5	7	8.75	24	30
Titlagarh	80	80	100	57	71.25	3	3.75	29	36.25
Total	240	240	100	133	55.42	10	4.17	78	32.5

Source: Baseline Survey, 2022

3.3. Area, Production and Yield of Ragi

The distribution of sample households by area, production, and yield of millets across the three block offers insights into the scale and efficiency of millet cultivation in the region. In Balangir district, 133 sample households cultivated millets over a total area of 99.91 acres, producing 88.55 quintals in all. Among the blocks, Titilagarh showed the best performance, contributing 42.86% of total households

(57) and covering 35.93 acres (35.95%) with a production of 36.9 quintals (41.67%), achieving the highest yield of 1.03 quintals per acre. Belpada followed with 42 households (31.58%), cultivating 31.08 acres (31.09%) and producing 28 quintals (31.63%), yielding 0.90 quintals per acre. Patnagarh accounted for 34 households (25.56%), with 32.9 acres (32.91%) under millets and 23.65 quintals (26.70%) of output, yielding 0.72 quintals per acre. On average, the district recorded a productivity of 0.89 quintals per acre and 0.67 quintals per household. (Table 3.2)

Table 3.2: Distribution of Sample HHs by Area, Production and Yield of Ragi

Blocks	Households	Millets Area in (Acres)	Production (in Qtls)	Yield	
	No	No	No	Qtls/Ac	Qtls/HHs
Belpada	42	31.08	28	0.90	0.67
Patnagarh	34	32.9	23.65	0.72	0.70
Titilagarh	57	35.93	36.9	1.03	0.65
Total	133	99.91	88.55	0.89	0.67

Source: Baseline Study, 2022

3.4 Types of Millet Seeds being Used

Seed is an important input that determines the production, yield and quality of millets. The HHs surveyed in Balangir used Desi or local varieties of seeds. The table 3.2 shows that, out of total sample household, 69.92 households used Desi seeds and 30.08 household used hybrid seeds.

Table 3.3: Distribution of Sample HHs by Types of Seeds being Used

Blocks	Belpada		Patnagarh		Titilagarh		Total	
	No	%	No	%	No	%	No	%
Hybrid	14	33.33	9	26.47	17	29.82	40	30.08
Local	28	66.67	25	73.53	40	70.18	93	69.92
Total	42	100	34	100	57	100	133	100

Source: Baseline Study, 2022

The distribution of sample households by the type of seeds used for millet cultivation across Belpada, Patnagarh, and Titilagarh reveals a clear preference for traditional local seed varieties over hybrid seeds in the region. Overall, nearly 70 per cent of the households use local (desi) seed varieties, while only about 30 per cent rely on hybrid seeds. This pattern is consistent across all three blocks, although slight variations are observed. In Belpada, around 66.67 per cent of households use local seeds, while one-third adopt hybrid varieties. A similar trend is seen in Titilagarh, where about 70.18 per cent of households prefer local desi seeds, and the remaining 29.82 per cent use hybrid seeds. The preference for local seeds is even more pronounced in Patnagarh, with nearly 73.53 per cent of households cultivating millets with traditional varieties, while hybrid seed usage remains relatively low at around 26.47 per cent. (Table 3.3)

3.5. Package of Practices

In agriculture the method of cultivation plays a vital role in the growth and production of crops. Therefore, different agronomic practices being followed by the farmers suited to their land and socio-economic condition of the HHs. This section discusses the agronomic practices followed by the

respondent HHs of the selected Blocks in the Balangir district. In Fig 3.1 and Table 3.4 presents different method of cultivation techniques involved in the process of cultivation such as broadcasting, line sowing/ line transplanting, System of Millets Intensification (SMI) method, and combination of one or more methods used by different HHs. Out of sample households, 133 households are cultivating millets and used different way of methods. In this table 52.63 per cent household used Line Transplantation (LT) method for cultivation millets and follow by Line Showing (LS) which is 42.11 per cent and 3.01 per cent households adopt broadcasting methods while less than 3 per cent household adopted SMI method.

Figure 3.1 Package of Practices followed by Millet Cultivating HHs

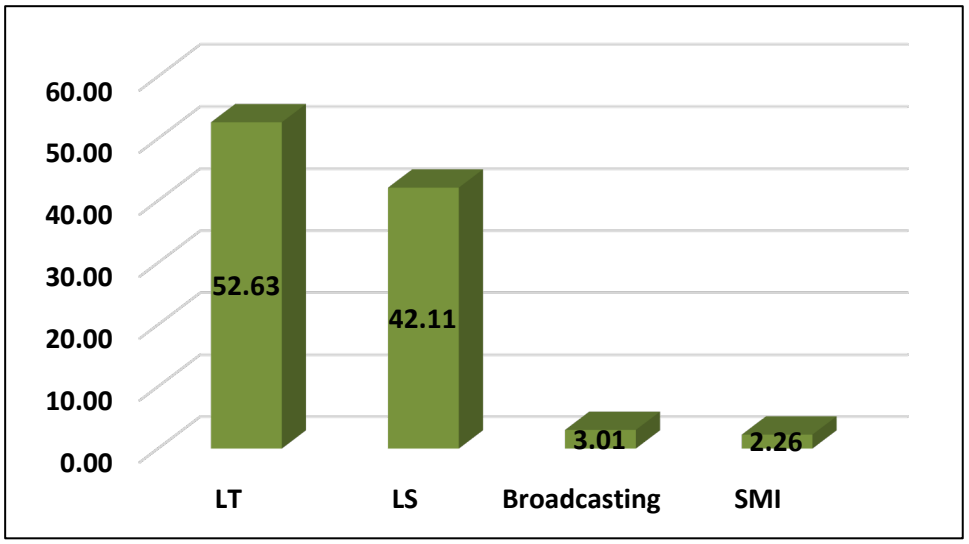


Table 3.4: Package of Practices followed by Millet Cultivating Households

Package of Practices	Belpada		Patnagarh		Titilagarh		Total	
	No	%	No	%	No	%	No	%
LT	24	57.14	18	52.94	28	49.12	70	52.63
LS	13	30.95	14	41.18	29	50.88	56	42.11
Broadcasting	2	4.76	2	5.88	0	0	4	3.01
SMI	3	7.14	0	0	0	0	3	2.26
Total	42	100	34	100	57	100	133	100

Source: Baseline Study, 2022

In Belpada block of Balangir district, 80 households were surveyed about their farming practices. Out of these 30.95 per cent of households use line sowing (LS) method, 4.76 per cent of households use broadcasting methods, 57.14 per cent of households use line transplantation (LT) method. In Patnagarh block, out of total 80 Sample households, about 41.18 per cent of them use LS method, 5.88 per cent of them use broadcasting methods, and 41.18 per cent of them use LT method. Likewise, in Titilagarh block, out of the total 80 sample households, 50.88 per cent of them use LS method, and 49.12 per cent of them use LT methods.

3.6. Reason for not Cultivating Millets

In Balangir district, out of 240 sample households, 133 households (55.4%) reported cultivating millets, while 107 households (44.6%) do not cultivate them. Among the 107 households not cultivating millets, the major constraint was shortage of land, cited by 55 households (51.4%). Economic reasons were also significant, with 50 households (46.7%) considering millet cultivation not profitable. Non-availability of seeds affected 25 households (23.4%), and lack of irrigation was reported by 10 households (9.3%). No households mentioned other reasons. These figures indicate that in Balangir, limited land and concerns about profitability are the primary barriers to millet cultivation, followed by seed availability and irrigation challenges.

3.7. Conclusion

In Balangir district, paddy is cultivated by all households, while millet cultivation is common, especially in Titilagarh. Most farmers prefer traditional local seeds, and line transplantation and line sowing are the main cultivation methods. A significant number of households do not grow millets due to land shortages and economic concerns, with additional constraints from seed availability and irrigation. Vegetable cultivation is minimal, while other crops are grown by some households. Overall, land limitations, profitability, and traditional practices largely influence millet production in the district.

CHAPTER IV

CONSUMPTION OF MILLETS

4.1 Introduction

Demand for any product arises due to consumption. Hence, consumption plays a vital role in production and marketing. In this chapter to analyse how the households that participated in the survey vary in their millet's intake across different seasons, meals, times of the day and generations. The Chapter also explores the diversity of millet varieties, recipes and dishes that are consumed by these households and how they prepare them. By doing so, the Chapter aims to provide a comprehensive picture of the millet's consumption patterns and preferences among the sample households in Balangir district, which is one of the focus areas of SAA.

4.2 Average Consumption of Millets by the Sample Households

Table 4.1 presents the season-wise average consumption of millets across Belpada, Patnagarh, and Titilagarh blocks. Millet consumption is highest during the summer season, with 71 households (88.75%) in Belpada consuming an average of 18.43 kg, 79 households (98.75%) in Patnagarh consuming 14.25 kg, and 73 households (91.25%) in Titilagarh consuming 20.69 kg. During the rainy season, 43 households (53.75%) in Belpada, 48 (60%) in Patnagarh, and 39 (48.75%) in Titilagarh consume millets, with averages of 8.3 kg, 8.02 kg, and 6.9 kg respectively. In winter, consumption drops, with 24 households (30%) in Belpada, 32 (40%) in Patnagarh, and 23 (28.75%) in Titilagarh, consuming 7.25 kg, 5.32 kg, and 8.21 kg respectively. Overall, the total average consumption stands at 32.46 kg, highlighting the prominence of millets during summer and reduced intake during winter and rainy seasons.

Table 4.1: Average consumption of Millets by the Sample HH (In Kgs)

Blocks	Winter			Rainy			Summer			Total average Consumption
	No	%	Consumption	No	%	Consumption	No	%	Consumption	
Belpada	24	30	7.25	43	53.75	8.3	71	88.75	18.43	11.33
Patnagarh	32	40	5.32	48	60	8.02	79	98.75	14.25	9.20
Titlagarh	23	28.75	8.21	39	48.75	6.9	73	91.25	20.69	11.93
Total	79	32.92	20.78	130	54.17	23.22	223	92.97	53.37	32.46

Source: Baseline Survey, 2022

4.3 Season-wise Consumption of Millets

Table 4.2 shows that millet consumption is highest during the summer season, with all households in Belpada (71), Patnagarh (79), and Titilagarh (73) consuming millets, making it 100% overall. During the rainy season, consumption remains substantial—43 households (60.56%) in Belpada, 48 (60.76%) in Patnagarh, and 39 (53.42%) in Titilagarh—totaling 130 households (58.30%). In winter, the figures decline slightly, with 24 households (33.80%) in Belpada, 32 (40.51%) in Patnagarh, and 23 (31.51%) in Titilagarh, totaling 79 households (35.43%). Overall, the data indicates that millet consumption peaks in summer and decreases during the rainy and winter seasons.

Table 4.2: Distribution of sample HHs by Season-wise Consumption of Millets								
Seasons	**Belpada**		**Patnagarh**		**Titilagarh**		**Total**	
	No	%	No	%	No	%	No	%
Winter	24	33.80	32	40.51	23	31.51	79	35.43
Rainy	43	60.56	48	60.76	39	53.42	130	58.30
Summer	71	100	79	100	73	100	223	100

Source: Baseline Survey, 2022
Note: Percentage is calculated from millets consuming households of blocks

4.4. Consumption of Millets during Different Meals of the Day

The data in Table 4.3 highlights that millet consumption is universal during breakfast, with 100% of households in Belpada (71), Patnagarh (79), and Titilagarh (73) consuming it. During lunch, consumption slightly declines to 91.55% in Belpada, 91.14% in Patnagarh, and 95.89% in Titilagarh, totaling 207 households (92.83%). For evening snacks, 52 households (73.24%) in Belpada, 61 (77.22%) in Patnagarh, and 59 (80.82%) in Titilagarh reported intake, summing to 172 households (77.13%). Dinner consumption remains high with 60 households (84.51%) in Belpada, 65 (82.28%) in Patnagarh, and 62 (84.93%) in Titilagarh, totaling 187 households (83.86%). Overall, the trend indicates that millets form an integral part of meals throughout the day, especially during breakfast and dinner.

Table 4.3: Distribution of Households During Different Meals of the Day								
Blocks	**Belpada (71)**		**Patnagarh (79)**		**Titilagarh (73)**		**Total**	
	No	%	No	%	No	%	No	%
Breakfast	71	100	79	100	73	100	223	100
Lunch	65	91.55	72	91.14	70	95.89	207	92.83
Evening Snack	52	73.24	61	77.22	59	80.82	172	77.13
Dinner	60	84.51	65	82.28	62	84.93	187	83.86

Source: Baseline Survey, 2022
Note: Percentage is calculated from millets consuming households of blocks

4.5. Millets Recipes Consumed

Table 4.4 reveals that a wide variety of millet-based recipes are consumed across Belpada, Patnagarh, and Titilagarh, with some regional preferences. *Jau/Torani* is the most widely consumed dish, reported by all households in Belpada (100%), 91.14% in Patnagarh, and 95.89% in Titilagarh, totaling 213 households (95.52%). *Tampo/Pitha* is another popular item, consumed by 98.59% in Belpada, 91.14% in Patnagarh, and 93.15% in Titilagarh (total 94.17%). *Khiri* is also common, with 64.79% in Belpada, 63.29% in Patnagarh, and 75.34% in Titilagarh (total 67.71%). *Chhatua* and *Sweet* are each consumed by around half the households (53.36%), while *Idli/Upma* shows moderate preference (50.22%). However, modern, or less traditional recipes like *Cake*, *Handia*, and *Lassi* were not reported at all. Overall, the data underscores a strong inclination toward traditional millet-based foods across all blocks.

Table 4.4: Distribution of sample HHs by Consumption Different Millets Recipes								
Blocks	**Belpada**		**Patnagarh**		**Titilagarh**		**Total**	
	No	%	No	%	No	%	No	%
Tampo/ Pitha	70	98.59	72	91.14	68	93.15	210	94.17
Chhatua	43	60.56	32	40.51	44	60.27	119	53.36
Jau/ Torani	71	100	72	91.14	70	95.89	213	95.52
Cake	0	0	0	0	0	0	0	0
Handia	0	0	0	0	0	0	0	0
Khiri	46	64.79	50	63.29	55	75.34	151	67.71
Idli/ Upma	41	57.75	28	35.44	43	58.90	112	50.22
Sweet	43	60.56	32	40.51	44	60.27	119	53.36
Lassi	0	0	0	0	0	0	0	0

Source: Baseline Survey, 2022
Note: Percentage is calculated from millets consuming households of blocks

4.6. Conclusion

Findings of the Baseline Survey, 2022 across the three blocks of Balangir district show that millet consumption is highest during the summer season. Most of the respondents, except for infants and preschool children, reported consuming millets. The lower rate of millet consumption among infants may be due to the dietary restrictions for new-borns or young children. Most of the respondents consume millets during lunch time. Jau/Torani is the most common millet recipe across the three blocks of Balangir district, followed by Tampo/ Pitha, Khiri and Idli/ Upma.

CHAPTER V

PROCESSING AND MARKETING OF MILLETS

5.1 Introduction

This chapter explores the various practices for processing of millets, such as, milling, roasting, and popping. It also examines the availability and accessibility of processing units in the sample area, and the factors that influence the choice of processing methods. Furthermore, this chapter analyses the different modes of selling millets, such as direct sales, cooperatives, middlemen, and online platforms. It also evaluates the distance to selling points and the transportation costs involved. The main objective of this chapter is to assess the status of processing and marketing of millets in the sample area and to identify the challenges and opportunities for improving the value chain of millets.

5.2 Methods of Processing of Millets

Processing of millet is important aspects after cultivation to prepare the final product which leads to address the market and consumption. There are two types of process to produce the final product of millets i.e., by traditional and machine. Table 5.1 shows the methods adopted by households for processing millets across Belpada, Patnagarh, and Titilagarh blocks. Use of machinery is the most common method, practiced by 38.10% of households in Belpada, 50% in Patnagarh, and 36.84% in Titilagarh, totaling 54 households (40.60%). Traditional processing continues to be significant, followed by 26.19% in Belpada, 26.47% in Patnagarh, and 35.09% in Titilagarh, amounting to 40 households (30.08%). A combination of both traditional and mechanical methods is also observed among 15 households (35.71%) in Belpada, 8 (23.53%) in Patnagarh, and 16 (28.07%) in Titilagarh, totaling 39 households (29.32%). Overall, the data indicates a gradual shift toward mechanized and mixed processing methods, reflecting modernization while retaining traditional practices.

Table 5.1: Methods of Processing Millets

Blocks	Traditional		Use Machinery		Both		Total	
	No	%	No	%	No	%	No	%
Belapada	11	26.19	16	38.10	15	35.71	42	100
Patanagarh	9	26.47	17	50.00	8	23.53	34	100
Titlagarh	20	35.09	21	36.84	16	28.07	57	100
Total	40	30.08	54	40.60	39	29.32	133	100

Source: Baseline Survey, 2022

5.3 Marketing

Marketing of millets is an important dimension for producing households to earn income by selling their surplus produce an improving their quality of life. Better marketing opportunities generate hope and interest to cultivate millets among these households. According to Baseline information shows that households are selling their surplus millets through different means. This shows that out of 240 surveyed households 130 households are cultivating Millets in Balangir District (table5.2). 32.08 per cent of sample households, sell their millets to middlemen, whereas 20.78 per cent sell it to

Moneylender/Sahukar. About 29.87 per cent households sell it in the Market and 7.79 per cent sell it to market.

Table 5.2: Distribution of Sample HHs by their Selling Millets Across Blocks

Selling Points	Belpada		Patnagarh		Titilagarh		Total	
	No	%	No	%	No	%	No	%
Govt. Mandi	0	0	0	0	0	0	0	0
Market	3	10.34	8	30.77	12	54.55	23	29.87
Money lender	6	20.69	7	26.92	3	13.64	16	20.78
Local Trader	5	17.24	1	3.85	0	0	6	7.79
Middlemen/Local Business	15	51.73	9	34.61	7	31.81	31	40.26
Direct Consumer	0	0	1	3.85	0	0	1	1.30
Total	29	100	26	100	22	100	77	100

Source: Baseline Survey, 2022

5.4 Conclusion

The processing and marketing of millets in the sample households across the three blocks of Balangir district under Baseline Survey 2022, Phase VI reveals that majority of households process their millets both methods such as by using machine and using traditional methods. Processing of millets through pulveriser is most used processing units which is situated in nearby villages. Further, majority of households sell their surplus produce of millets. Among whom majority of them sells their millets to middleman. Most of the households reported incidence of distress sale of their millets.

Annexure 1: Baseline Survey 2022, Balangir District

Indicators	Unit	Baseline Value			Total
		Belpada	Patnagarh	Titilagarh	
% Of Sample households Cultivating Millets	%	52.5	42.5	71.25	55.42
Types of Millets Cultivated (2021)					
Mandia	%	100	100	100	100
Millets/ Ragi Production per HHs	Qtls	0.67	0.70	0.65	0.67
Package of Practice	%				
Broadcasting	%	4.76	5.88	0	3.01
LS	%	30.95	41.18	50.88	42.11
LT	%	57.14	52.94	49.12	52.63
SMI	%	7.14	0	0	2.26
Yield Rate (Qtls./Acre)	Qtls	0.90	0.72	1.03	0.89
% Of HHs Consuming Millets	%	% Is calculated from millets consuming HHs			
Breakfast	%	100	100	100	100
Lunch	%	91.55	91.14	95.89	92.83
Evening Snacks	%	73.24	77.22	80.82	77.13
Dinner	%	84.51	82.28	84.93	83.86
Popular Millets Recipes (%HHs)		% Is calculated from millets consuming HHs			
Tampo/Pitha	%	98.59	91.14	93.15	94.17
Jau/Torani	%	100	91.14	95.89	95.52
Chatua	%	60.56	40.51	60.27	53.36
Khiri	%	64.79	63.29	75.34	67.71
Idli/Upma	%	57.75	35.44	58.90	50.22
% Of HHs using Processing Ragi					
Manually	%	26.19	26.47	35.09	30.08
Machines	%	38.10	50	36.84	40.60
Both	%	35.71	23.53	28.07	29.32
% Of HH Selling Millets					
Middleman	%	51.73	34.61	31.81	40.26
Mandi	%	0	0	0	0
Haat	%	10.34	30.77	54.55	29.87
Money lender	%	20.69	26.92	13.64	20.78

Source: Baseline Survey,2022

Annexure 2

Confidential and to Be Used for Research Purpose Only

Households Schedule for

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

Serial No..…….. Date……...

Part-I: Socio-Economic Status

1. Profile of the Households

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

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

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

(iii) Blocks: (iv) District:

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

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

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

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

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

3. HHs' Land ownership in Acre:…….

4. Operational Holdings Under Different Crops (in Acre)

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

5. Annual Expenditure:

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

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

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

2. Household Particulars:

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

Codes: Marital Status: 1- Married, 2- Unmarried, 3- Widow, 4- Widower, 5- Divorced, 6- Separated, 7- Any Others (pl specify)
Relationship: 1-Self, 2- Spouse, 3- Son, 4- Daughter, 5- Daughter-in-Law, 6- Son-in-Law, 7- Father, 8-Mother, 9-Brother, 10-Sister, 11- Grandson, 12- Granddaughter, 13- Father- in-Law, 14- Mother-in-Law, 15- Any Other (Specify)
Education: 1- Illiterate, 2- Up to Class 5, 3- Class 6-10, 4- Higher Secondary, 5- Graduate, 6- Post-Graduate, 7- Technical (Diploma/Degree), 8- Professional/Management, 9- Any Other (Specify)
Occupation: 1- Agriculture, 2- Daily Wage Labour, 3- Business/Entrepreneurship, 4- Govt sector, 5- Private Sector, 6- Pension/Remittances 7- Student 8- Housewife, 9- Unemployed, 10- Others (pl. specify)

Part-II: Production of Millets

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

If yes, give millet-wise production details

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

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

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

10. How do you store your seed and grain?

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

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

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

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

1) Manually_____ 2) By Weeder_____3) Both_____

14. If By Weeder, Sources of weeder?

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

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

(i) Not profitable (ii) Shortage of land (iii) Non-availability of Seeds
(iv) Lack of Irrigation (v) Others (pl. specify) ……

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

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

Part-III: Consumption of Millets

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Part-IV: Processing of Millets

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

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

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

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

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

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

Part-V: Marketing of Millets

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

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

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

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

38. Remarks

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

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About NCDS, Bhubaneswar

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