

BASELINE SURVEY : PHASE VI

STATE REPORT

**Special Program For Promotion Of Millets In Odisha
(Shree Anna Abhiyan)**



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



ନବକୃଷ୍ଣ ଚୌଧୁରୀ ଉନ୍ନୟନ ଗବେଷଣା କେନ୍ଦ୍ର
Nabakrushna Choudhury Centre for Development Studies
ICSSR Institute in Collaboration with Government of Odisha)

2025

Citation: 'Baseline Survey: District 2023, Phase VI' Special Programme for Promotion of Millets in Odisha (Shree Anna Abhiyan, SAA), Nabakrushna Choudhury Centre for Development Studies, Bhubaneswar.

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

The SAA programme has emerged from a consultation with diverse array of stakeholders including NCDS. A memorandum of understanding (MoU) was signed on February 27, 2017, bringing together key stakeholders including the Directorate of Agriculture and Food Production (DAFP), NCDS, and the Watershed Support Services and Activities Network (WASSAN). This MoU delineated the framework for concerted efforts towards implementing the SAA, with NCDS assuming the pivotal role of anchoring the research secretariat. NCDS embarked on a comprehensive survey initiative encompassing Baseline, Midterm, and End-line assessments in the designated blocks of the SAA. These surveys, designed to provide a situational analysis of the status of millet production, marketing, consumption, represent a critical step towards informed intervention and strategic decision-making. The findings of the baseline survey presented in the report would provide a situational analysis of the current status of the millet at the time of survey and a reference point to analyse the impact of intervention.

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



Dr. Yodanis Vijay, IAS
Director, NCDS

ACKNOWLEDGEMENT

It gives me immense pleasure to extend my gratitude to all those who contributed to the successful completion of the 'Baseline Survey Report of Phase VI, 2023'. This endeavor was truly a collaborative effort, and deeply grateful for the support and dedication demonstrated by each individual and organization involved. First and foremost, I would like to express sincere appreciation to the research team of Nabakrushna Choudhury Centre for Development Studies (NCDS), for preparation of this report. Your commitments and tireless efforts have been instrumental in ensuring the quality and accuracy of the findings presented.

We are grateful to 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, IAS Principal Secretary to the Government, Department of Agriculture & Farmers' Empowerment (DA&FE), Mr. Pram Chandra Choudhury, IAS Director, Directorate of Agriculture and Food Production, Joint Director and other officials for their invaluable contributions.

A sincere appreciation to our esteemed Director, Dr. Yeddula Vijay, IAS, Additional Secretary to the Government, Planning and Convergence Department, Government of Odisha, and Director of Nabakrushna Choudhury Centre for Development Studies (NCDS). Your guidance, wisdom, and valuable suggestions have been invaluable in shaping the direction of this study. Many thanks to NCDS administration for their continuous support for smooth functioning of the research work. I would also like to express my appreciation to the members of the Programme Secretariat (Watershed Support Services and Activities Network, WASSAN), the facilitating agencies and staff of the concerned areas under study for their support and cooperation.

We are thankful to the Chief District Agricultural Officers (CDAO), the Schema Officers, District Programme Coordinators, Block Coordinators, and other block-level officials of different district 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 we look forward to continued collaboration in our future endeavors.

Dr. Sandhyarani Mahapatro
Project Director, SAA

Executive Summary

Millet crop is a super grain owing to its high nutritional value, climate resilience, economic viability and high pest & disease resistance properties. To promote millet production, consumption and address the barriers to promote millet, the Government of Odisha has launched "The Special Programme for Promotion of Millets in Odisha" In 2017, which was formerly referred as Odisha Millet Mission (OMM), now known as the Shree Anna Abhiyan (SAA). To assess the characteristics of the study areas prior to implementing the intervention, a Baseline Survey has been conducted in seven phases. The present report is the State Report of SAA, Phase VI, that comprises information collected from 58 blocks of 17 districts comprising 27785 programme households of which 4640 households selected for the baseline survey.

The adult population forms as the largest age group, with many engaged in agriculture as their major occupation. Except Bhadrak district, availing the formal agricultural credit are found to be very low. Agriculture is the primary occupation for the majority of people across the sample villages in the selected blocks in the surveyed districts.

The socio-economic background of the sample households reveals a comparatively good presence of ST and OBC/ SEBCs (53.4 % and 37.4 % respectively). Tribal dominance is strongest in Gajapati (100%) and Koraput (98.1%), while OBC/SEBC households dominate in Ganjam (90.4%), Nayagarh (86.3%), and Boudh (64.6%). The surveyed population is overwhelmingly Hindu (97%), with Christians (2.5%) mainly in Gajapati (45%) and Koraput (19.4%). Muslims are negligible (0.04%). In the surveyed population about 23.4 percent of members are illiterate. Only 3.3% of households are landless, and large farmers (>10 acres) just 2.1%. Household income is skewed towards the lower end, with 21.6% earning below ₹40,000 annually and only 4.2% households earn above ₹2,00,000.

Millet production under Shree Anna Abhiyan (SAA), Phase VI shows that while paddy dominates cultivation (94.3% of 4,640 HHs), only 36.4% households cultivate millets, reflecting its regional concentration in tribal and hilly areas. Millet cultivation is universal in Malkangiri (100%), and very high in Kalahandi (99.1%), Koraput (95.6%), Nabarangpur (85.9%), Gajapati (84.4%), Ganjam (87.5%), and Rayagada (80%). By contrast, it is absent in Keonjhar and Mayurbhanj, and very low in Boudh (4.2%) and Nayagarh (3.8%).

Area, Production, and Yield: The leading districts in millet production are Kalahandi (909.4 qtl), Nabarangpur (634.8 qtl), and Gajapati (589.3 qtl). Productivity is highest in Gajapati (4.06 qtl/acre), Rayagada (3.25), and Nabarangpur (2.62), while much lower in Ganjam (0.6), Nayagarh (0.84), and Koraput (0.85). Out of 1,700 millet-growing HHs, a large majority (79.8%) rely on local seeds, while only 20.2% use HYVs. Line sowing (35.3%) and Line Transplanting (27.4%) show moderate adoption. Broadcasting (19.2%) remains common in less mechanized regions like Malkangiri (77.5%), while the modern System of Millet Intensification (SMI) has very limited uptake (18.1% overall), except in Koraput (58.8%) and Dhenkanal (47.6%). Among non-cultivators, the most cited reasons are low profitability (36%), shortage of land (27.2%), and non-availability of seeds (16%).

Average annual household consumption varies widely, from 158.9 kg in Kalahandi (highest) to 4.1 kg in Nayagarh and nil in Keonjhar. Millet intake is highest in summer (98.1 kg/HH on average), dropping during the rainy season (68.0 kg) and reaching the lowest in winter (53.3 kg). Millets are most common at breakfast (above 90% households in Balangir, Kandhamal, Kalahandi, Koraput, and Mayurbhanj) and lunch (over 90% in Koraput, Nabarangpur, and Rayagada). Dinner consumption is limited in many districts (only 11–12% in Ganjam,

Jharsuguda, Kalahandi), but remains strong in tribal belts such as Nabarangpur (94%), Rayagada (93%), and Koraput (91%). Jau/Torani (92.5%) and Pitha/Thampo (81.3%) are the most widely consumed millet recipes.

Millet processing and marketing in Odisha reveal both widespread household participation and structural gaps. Over 92% of households undertake processing, but reliance on traditional methods exceeds 70% in districts like Boudh, Nayagarh, and Mayurbhanj. In contrast, mechanized processing is higher (40–60%) in Ganjam, Koraput, Dhenkanal, and Naspada, showing uneven adoption across regions.

On the marketing side, participation is highly variable. Districts like Kalahandi (92.7% households selling millets) and Gajapati (91.9%) are strongly market-oriented, while Ganjam (6.7%), Kandhamal (4.1%), Bargarh (7.6%), and Mayurbhanj (0%) show negligible sales. Statewide, middlemen and local businessmen account for 40–50% of transactions, while mandis remain virtually unused. Daily markets and local haats continue to serve as key outlets, highlighting the need for stronger formal linkages, value addition, and institutional marketing support to ensure fair returns for farmers.

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ABBREVIATIONS

AWC	::	Anganwadi Centre
CBOs	::	Community Based Organisation
CCD	::	Centre for Community Development
CRPs	::	Cluster Resource Persons
CSOs	::	Civil Society Organisations
DAFF	::	Directorate of Agriculture and Food Production
DOA	::	Deputy Director, Agriculture
FA	::	Facilitating Agencies
FGD	::	Focused Group Discussion
FPC	::	Farmer Producer Company
FPO	::	Farmer Producer Organization
GP	::	Gram Panchayat
FA	::	Facilitating Agency
FAQ	::	Fair Average Quality
Ha	::	Hectares
HHs	::	Households
ICDS	::	Integrated Child Development Scheme
ITI	::	Industrial Training Institute
LS	::	Line Sowing
LT	::	Line Transplantation
MDM	::	Mid-day Meal
MSP	::	Minimum Support Price
NCDS	::	Nabakrushna Choudhury Centre for Development Studies
OBC	::	Other Backward Classes
ODM	::	Odisha Millets Mission
PDS	::	Public Distribution System
SC	::	Scheduled Caste
SMI	::	System of Millet Intensification
ST	::	Scheduled Tribe
SAA	::	Shree Anna Abhiyan

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 millet 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 millet cultivation and its associated challenges and opportunities.

Millets are cereal grains that belong to the Poaceae family, commonly known as the grass family. Millets are small, round whole grains grown in India, Nigeria, and other Asian and African countries. They are considered an ancient grain, used both for human consumption and livestock and bird feed. Millets have multiple advantages over other crops, including drought and pest resistance. They are also able to survive in harsh environments and less fertile soils. These benefits stem from their genetic composition and physical structure; for example, their small size and hardness contribute to their resilience.

This crop is divided into two categories: major and minor millets, with major millets being the most popular or commonly cultivated varieties. Major millets include Pearl Millet, Foxtail Millet, Proso Millet (also known as White Millet), and Finger Millet (Ragi). Minor millets include Kodo Millet, Barnyard Millet, Little Millet, Guinea Millet, Brown Top Millet, Fonio, and Idli Millet (or Job's Tears). Like most cereals, millet is a starchy grain, meaning it is rich in carbohydrates. Notably, it also packs several vitamins and minerals, which contribute to its health benefits (Kadam et al., 2021). Millets' nutritional value, combined with their adaptability to challenging growing conditions, makes them a key crop for sustainable agriculture and food security (Bandyopadhyay et al., 2020).

The United Nations designated the year 2023 as the "International Year of Millets," bringing further attention to these crops, including among the general public and farmers (United Nations, 2021). In the Indian state of Odisha, millets have always been an integral part of the traditional diet and have been cultivated for centuries, especially by the tribal population. However, in recent decades, the popularity of millets has declined due to the increasing adoption of modern food habits by the younger generation, the provision of rice through the Public Distribution System (PDS) at a token cost, and the promotion of high-yielding crops like rice and wheat (Government of Odisha, 2018). This shift has led to a decline in overall soil fertility and increased vulnerability to climate change (Singh & Raju, 2019). 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 Odisha," also known as the Shree Anna Abhiyan (SAA). This initiative, launched in 2017-2018, emphasizes the production, consumption, processing, and marketing of millets, particularly in tribal areas where they have been a staple food for generations (Government of Odisha, 2017).

The SAA program aimed to revive these nutrient-rich millet varieties in the agricultural landscape. It focused on promoting the cultivation of traditional millets such as Ragi, Gurji, Kosla (small millets), Kodo, and Kangu (foxtail millet), as well as Jowar, which have been age-old foods of forest dwellers. The initiative under SAA garnered much-needed attention for millet crops and revived their cultivation across the state. The implementation of SAA, Phase VI, began in 17 districts: Bargarh, Boudh, Bhadrak, Balasore, Cuttack, Dhenkanal, Jagatsinghpur, Jajpur, Khordha, Mayurbhanj, Nabarangpur, Puri, Nayagarh, Rayagada, Sambalpur, Subarnapur, and Sundergarh. The Baseline Study of 2023 aims to provide information on the Shree Anna Abhiyan program's dimensions in the state.

1.2 Profile of the State

Odisha is a state in eastern India, with a coastline of 485 kilometers along the Bay of Bengal. It is the eighth-largest state by area and the eleventh-largest by population, with over 41 million inhabitants (Census of India, 2011). The state has the third-largest population of Scheduled Tribes in India. It borders the states of Jharkhand and West Bengal to the north, Chhattisgarh to the west, and Andhra Pradesh to the south. Odisha has a rich and diverse history, culture, and natural beauty. The state was known as Kalinga in ancient times and was the site of the famous Kalinga War in 261 BC, between the Mauryan Emperor Ashoka and the local king. This war resulted in Ashoka's conversion to Buddhism and his policy of non-violence and welfare. Odisha became part of his empire and a center of Buddhism in India (Roy, 2014). The state is home to many ancient temples, monuments, and rock edicts that reflect its glorious past.

Odisha is also renowned for its vibrant arts, crafts, and literature. The state has a distinctive style of painting, sculpture, dance, music, and theatre. It is famous for its Pattachitra paintings, which depict scenes from Hindu mythology and folklore. The state is also the birthplace of Odissi Dance, one of the eight classical dance forms of India. Odisha boasts a diverse geography, climate, and ecology, with four natural regions: the northern plateau, the Eastern Ghats, the central tract, and the coastal plains. It is home to many rivers, lakes, waterfalls, and hot springs, as well as rich flora and fauna, with several national parks, wildlife sanctuaries, and biosphere reserves. Notable species include the Olive Ridley Turtles, Saltwater Crocodiles, Irrawaddy Dolphins, and Blackbucks (Government of Odisha, 2022).

Odisha has a mixed economy, with agriculture, industry, and services as its primary sectors. The state is one of the leading producers of rice, pulses, oilseeds, sugarcane, and spices in India. It also has abundant mineral resources such as coal, iron ore, bauxite, chromite, manganese, and limestone. Odisha is home to a large industrial base in steel, aluminum, power, mining, and petrochemicals. Additionally, the state has a growing services sector, with industries like tourism, education, and IT expanding rapidly, offering new jobs and investments in sectors like transportation, hotels, and construction (State Planning Board, Odisha, 2021).

1.3 Geography and Topography

Odisha spans an area of about 1.56 lakh square kilometers and is home to over 41 million people. Its geography is varied and complex, with unique landforms, climates, and ecosystems. The state is divided into five major geographic regions: the coastal plains, central plateaus, middle mountainous and highlands region, western rolling uplands, and major flood plains.

- o **Coastal Plains:** These fertile areas are formed by the deltas of six rivers, including the Subarnarekha, Budhabalanga, Balitarani, Brahmani, Mahanadi, and Rushikulya. These plains are suitable for agriculture and fishing, and they include Chilika Lake, the largest brackish water lagoon in the world, which is also a biodiversity hotspot (Department of Forest, Government of Odisha, 2021).
- o **Central Plateaus:** Part of the Deccan Plateau, these plateaus are rich in mineral resources such as coal, iron ore, bauxite, and chromite.
- o **Middle Mountainous and Highlands Region:** This area forms the Eastern Ghats and is rich in biodiversity. Prominent features include Simlipal National Park and Bhitarkanika Wildlife Sanctuary.
- o **Western Rolling Uplands:** These uplands, part of the Chhota Nagpur Plateau, are characterized by dry, semi-arid conditions, suitable for dryland farming and forestry.
- o **Major Flood Plains:** These low-lying areas along rivers such as the Mahanadi and Brahmani are prone to floods but provide vital irrigation and hydroelectric power (State of Environment Report, 2020).

1.4 Economy

Odisha has a rapidly growing economy. In 2022-2023, the state's Gross State Domestic Product (GSDP) grew by 7.82%, surpassing the pre-COVID growth rate of 7.1% (Economic Survey of Odisha, 2022). The state's economy is based on agriculture, industry, and services, with industries like steel, aluminium, power, and petrochemicals driving recent growth. The state's service sector, particularly tourism, education, and IT, is expanding rapidly, offering new jobs and investments in sectors like transportation, hotels, and construction.

1.5 The People and Culture

As per the 2011 Census, Odisha has a population of approximately 41.97 million. The state has a diverse mix of ethnicities, languages, and religions, contributing to its vibrant culture. Odisha's population is spread across 30 districts, with urban centers like Bhubaneswar and Cuttack. The state has a population density of 269 inhabitants per square kilometer, and the population growth rate from 2001 to 2011 was about 13.97%. Odisha has a balanced gender ratio with 979 females per 1000 males and a literacy rate of 72.9%, with male literacy at 81.6% and female literacy at 64% (Census of India, 2011).

Odisha is home to various ethnic groups, including indigenous Adivasis (Scheduled Tribes), who make up around 22.85% of the population. Major tribes such as the Kondh, Santal, Munda, and Gond reside primarily in the hilly and forested areas of the state, preserving their traditional lifestyles and languages. Hinduism is the dominant religion, practiced by about 94.35% of the population (Census of India, 2011).

Table 1.1: Socioeconomic and Demographic Features of Odisha

Indicators	Value
Population (In numbers) (as per Census 2011)	4,19,74,218
Male (In Lakh.)	21.21
Female (In Lakh.)	20.76
Scheduled Castes (In Lakh.)	7.18
Scheduled Tribes (In Lakh.)	9.59
Total HHs (In Lakh.)	96.05
Average HH Size (In Nos.)	4.5
Sex Ratio	979
Total Worker (In Lakh)	17.54
Main workers (In Lakh)	10.7
Marginal workers (In Lakh)	6.83
Non-Workers (In Lakh)	2.44
Literacy Rate (In %)	72.87
Land Use Pattern 2016-2019 (Area In '000 Hectares)	
Total Geographical Area	15571
Forest	5813
Land Put to Non-Agricultural Use	1298
Barren & Non-Cultivable Land	840
Permanent Pasture & Other Agricultural Land	494
Net Area Sown	5362
Cultivable Waste Land	375
Other Fallow	229
Current Fallows	818
Misc. Trees and Groves	342
Average Fertilizer Consumption per ha (In kg/ha)- 2022-23	57.11
Total Production of Major Crops (In million tonnes) 2022-23	13.606
Total Ragi Production (In lakh MT)-2021-22	1.56
Irrigation Potential Created in 2017-2018* (Area In '000 Hectares)	
Kharif	4189.248
Rabi	1911.617
Sources:	
1. Cuttack District Census Handbook	
2. Odisha Agricultural Statistics, Directorate of Agriculture and Farmers Welfare, Government of Odisha, Bhubaneswar	

1.6 Objectives of the Study

The Baseline Survey 2023 aimed to collect primary data from millet farming households on aspects of production, consumption, processing, and marketing. The major objectives of the survey were:

- To assess the socio-economic conditions of the surveyed households in the selected blocks, Gram Panchayats (GPs), and villages across the respective districts under Phase VI of the program.
- To outline millet production practices and the package of practices followed by the selected households.
- To examine the consumption patterns of millets among the respondent households.
- To elucidate the methods of processing and modes of marketing followed by the selected households.

1.7 Methodology

1.7.1 Sampling

In the first stage of sampling, 17 districts and 58 blocks were selected for the base line study Phase-VI. From each block 80 households were selected by random sampling method and all total 4640 households were covered out of total programme households of 27785.

Table 1.2 Sample Households for the Baseline Study, 2022-23

Sl. No	District	No. of Blocks	No. of Programme HHs	No. of Sample HHs.	HH %
1	Belangir	5	1150	240	20.87
2	Bargarh	2	695	160	23.02
3	Boudh	3	1271	240	18.88
4	Dhenkanal	5	915	400	43.72
5	Gajapati	2	1142	160	14.01
6	Ganjam	3	2460	240	9.76
7	Jharsuguda	5	2355	400	16.99
8	Kalahandi	4	2141	320	14.95
9	Kandhamal	4	1726	320	18.54
10	Keonjhar	4	3207	320	9.98
11	Koraput	2	1365	160	11.72
12	Malkangiri	1	273	80	29.30
13	Mayurbhanj	9	1819	720	39.58
14	Nabarangpur	4	2714	320	11.79
15	Nayagarh	4	1945	320	16.45
16	Nusapada	2	1879	160	8.52
17	Rayagada	1	728	80	10.99
	Total	58	27785	4640	16.70

Source: ICSSAN

1.7.2 Data Collection

This baseline survey report is based on both secondary and primary data. The primary data were collected from the districts which are included in Phase VI, by using interview schedule. The secondary data includes geographical information, demographic, economy etc were collected from various published and unpublished sources, including the 2011 Census reports, Odisha Agricultural Statistics, and so on. The understanding of local situations and authenticity of data is based on interactions and in depth discussions with the key stakeholders, officials from local community to district level. Socio-economic indicators including household demography, income, livelihoods, education, health, and access to basic amenities like water and sanitation facilities presents the socioeconomic status of the sample households. The report provides an in-depth analysis of the current situation of millet cultivating households from sample district and blocks.

1.8 Limitations of the Study

The report of Baseline Survey Phase VI is based on the blocks and sample households from seventeen districts of the state. Some of the head of the households and female respondents were found to be absent during the data collection process. Despite these challenges, necessary steps were taken to overcome such challenges without compromising the quality of data. However, it is important to acknowledge the limitations of the present study. There is the possibility of recall error, especially in case of actual quantity of production, consumption, and marketing. It is essential to consider these limitations while interpreting the findings of the survey. Future studies may address these gaps and improve the accuracy of the data collection process.

1.9 Chapterization

There are all total six chapters including Chapter-1 denotes background of the study, objectives, methodology and limitations. Chapter-2 highlights the demographic and economic status of sample households. Chapter-3 looks out the production details of millets cultivating households. Consumption details of sample households are explained in Chapter-4. Chapter-5 focuses on processing and marketing status and lastly the Chapter-6 gives detail on major findings and concluding remarks. All the chapters are analysing the data from baseline primary survey.

CHAPTER-II

SOCIO ECONOMIC PROFILE OF SAMPLE FARMERS & HOUSEHOLDS

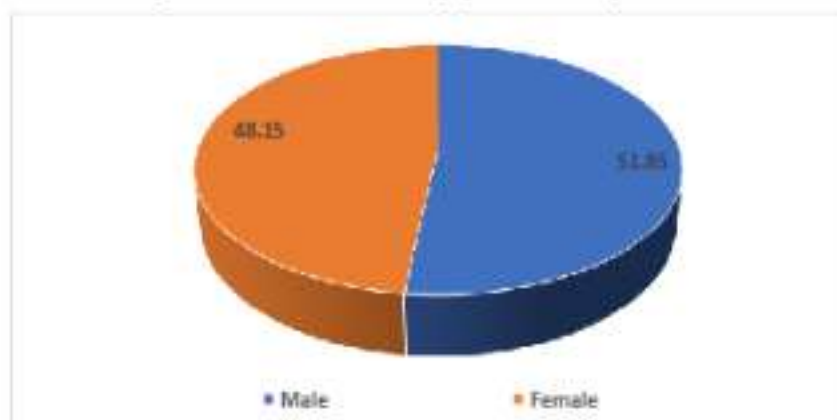
2.1 Introduction

Socio-economic profile of sample households is key to social assessment. It encompasses a range of different factors including education, income, occupation etc. Further it provides information about the religious composition of sample households across three blocks of the district. It also provides information regarding occupational distribution of population in the sample households. Additionally, it provides information about possession of ration card by the sample households and distribution households by their house structure.

2.2 Distribution of the Sample Population by their Sex

The distribution of population by their sex across the sample households in the district is represented in Fig 2.1.

Fig 2.1: Sex wise distribution of population in sample Districts



It shows that female population among the sample households is lower with 48.15 per cent than male population which is about 51.85 per cent of the total population of sample household.

Distributions of the sample population across various districts demonstrate notable inter-district disparity. The male population is high in Keonjhar and Koraput district exhibit 57.69 per cent and 57.38 percent respectively hence, the male population in these districts significantly surpasses the female population. Conversely, in Gajapati and Rayagari, female constitute the majority, with 55.56 per cent and 53.30 per cent respectively. The overall gender ratio across all districts is relatively balanced.

Table 2.1 Sex wise distribution of population in sample Districts

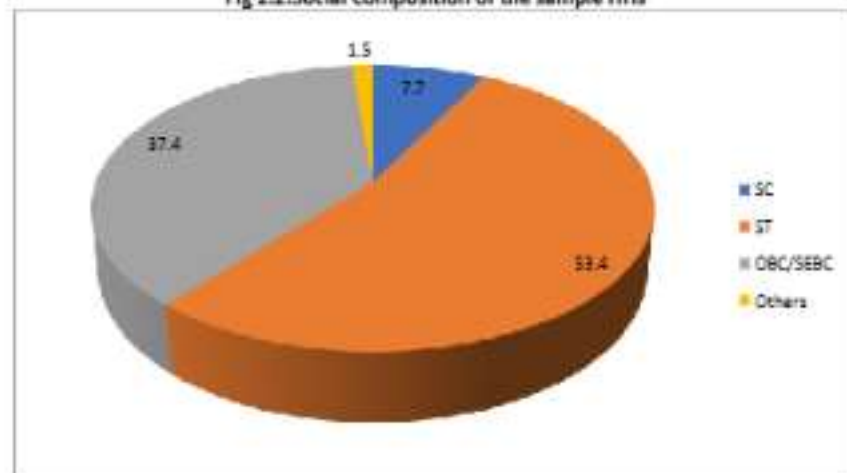
District	Total	Male		Female	
		No.	%	No.	%
Bargarh	746	393	52.68	353	47.32
Bolangir	1211	647	53.43	564	46.57
Boudh	832	480	57.69	352	42.31
Dhenkanal	1680	964	57.38	716	42.62
Gajapati	594	264	44.44	330	55.56
Ganjam	1113	578	51.93	535	48.07
Jharsuguda	1654	783	47.34	871	52.66
Kalahandi	1253	674	53.79	579	46.21
Kandhamal	1294	667	51.55	627	48.45
Kendujhar	1309	701	53.55	608	46.45
Koraput	846	430	50.83	416	49.17
Malkangiri	392	203	51.79	189	48.21
Mayurbhanj	3222	1534	47.61	1688	52.39
Nabarangpur	1636	856	52.32	780	47.68
Nayagarh	1275	722	56.63	533	41.80
Nuapada	737	392	53.19	345	46.81
Rayagda	469	219	46.70	250	53.30

Source: Field Survey

2.3 Social Composition:

The social composition of sample households presented in the Fig 2.1 seen that out of total of 4640 sample households, a majority (53.4 %) of households belongs to Scheduled Tribes (ST) followed by Other Backward Classes (OBCs)/ Socially and Educationally Backward Classes (SEBCs) which is 37.4 percent. Whereas SC are only 7.7 percent followed by others (1.5%).

Fig 2.2: Social Composition of the sample HHs



The social composition of households across the 17 districts reveals significant inter-district variations. Districts like Rayagada (97.50 per cent) and Deogarh (87.50 per cent) have a notably high percentage of the Scheduled Tribe (ST) households, indicating a strong tribal presence. In contrast, districts such as Jagatsinghpur (57.50 per cent), Nayagada&Jajpur (23.75 percent) and Bhadrak (22.50 per cent) show a higher representation of Scheduled Caste (SC) households. The predominance of OBC/SEBC households is evident in districts like Puri (77.5%), Kendrapada (71.3 %) and Cuttack (70 per cent), highlighting their significant demographic influence. Interestingly, the 'Others' category remains relatively low across all districts, with an overall representation of 6.17 per cent. Some districts have unique profiles, such as Bargarh, which has no SC households, and Puri, which has no SC and ST households but a majority of them OBCs/ SEBCs.

Table 2.2: District-wise Distribution of the Sample HHs as per Social Composition

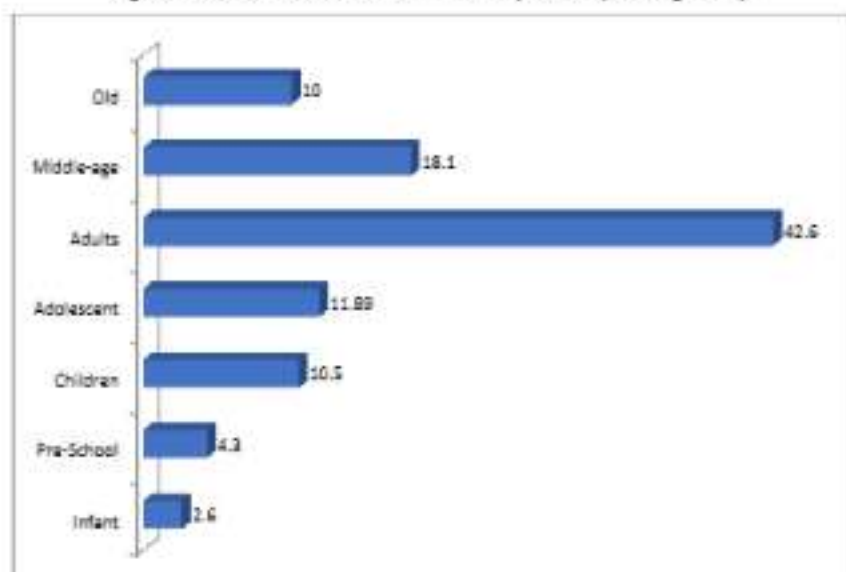
District	SC		ST		OBC/ SEBC		Others	
	No.	%	No.	%	No.	%	No.	%
Bolangir	20	8.3	107	44.6	100	41.7	13	5.4
Bargarh	14	8.8	50	31.3	91	57.5	4	2.5
Boudh	19	7.9	66	27.5	155	64.6	0	0.0
Dhenkanal	99	24.8	98	24.5	184	46.0	19	4.8
Gajapati	0	0.0	140	100.0	0	0.0	0	0.0
Garjam	5	2.1	3	1.3	217	90.4	15	6.3
Jharsuguda	37	9.3	66	16.5	297	74.3	0	0.0
Kalahandi	20	6.3	174	54.4	126	39.4	0	0.0
Kandhamal	58	18.1	225	70.3	37	11.6	0	0.0
Kendujhar	31	9.7	217	67.8	71	22.5	0	0.0
Koraput	2	1.3	157	98.1	1	0.6	0	0.0
Malangiri	2	2.5	66	82.5	11	13.9	1	1.3
Mayurbhanj	27	2.8	632	87.8	60	8.3	1	0.1
Nabarangpur	11	3.4	343	75.9	51	15.0	15	4.7
Nayagarh	11	3.4	32	10.0	276	86.3	1	0.3
Nusapada	1	0.6	119	74.4	40	25.0	0	0.0
Rayagada	1	1.3	62	77.5	17	21.3	0	0.0

It is seen that the Gajapati district has cent percent ST population, followed by Koraput (98.1 %) indicating pure concentration of ST. Scheduled Castes (SCs) are more concentrated in districts like Dhenkanal (24.8%), Jharsuguda (9.3%), Kandhamal (18.1%), and Bolangir (8.3%). OBCs/SEBCs constitute the largest share in many non-tribal districts such as Garjam (90.4%), Nayagarh (86.3%), Boudh (64.6%), Bargarh (57.5%), and Jharsuguda (74.3%). Others (General caste) are relatively small across all districts, except Garjam (6.3%), Dhenkanal (4.8%), Nabarangpur (4.7%) and Bolangir (5.4%).

2.4 Distribution of Sample Households members by their Age

The fig 2.3 shows the distribution of household members by age group in the surveyed population. Adults have the largest share at 42.6%, indicating that the total population is predominant by them. Middle-age (18.1%) and adolescents (11.9%) together form a significant portion. Children (10.5%) and pre-schoolers (4.3%) show that around 15% of the population is below school-going age, reflecting the dependency ratio. Infants (2.6%) form a small share, suggesting lower proportions of very young children. Old age (10%) represents a notable segment, pointing towards a rising elderly population that may require care and support.

Fig 2.3: Distribution of Total Members of Surveyed HHs by their Age Group



The Table 2.3 represents the district-wise distribution of household members across surveyed districts in Odisha by age group. It is seen that district-wise also the total population dominated by adults. Boudh (49%), Mayurbhanj (46.5%), Keonjhar (44.9%), Jharsuguda (43.5%), and Ganjam (43.8%) show higher proportions of adults. Whereas, Jharsuguda (14.6%), Nuapada (15.3%), and Nayagarh (12.3%) stand out with larger old age segments. Districts like Koraput, Malkangiri, adolescents, and Nabarangpur have relatively higher shares of younger populations, suggesting future workforce potential but also higher dependency at present. Most districts show very small proportions of Infants (below 4%), with Mayurbhanj being the lowest (2%).

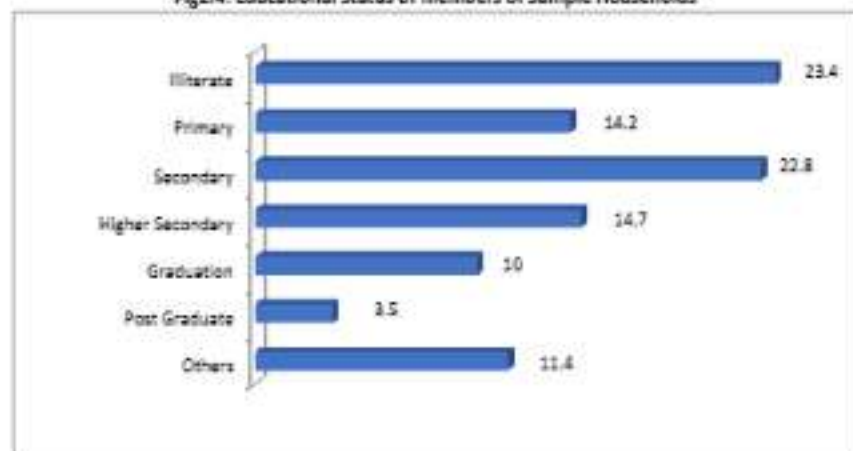
Table 2.3: Distribution of Members of Surveyed HHs by their Age Group

Particulars	Infant (0-2 Year)		Pre-School (3-5Year)		Children (6-12 Year)		Adolescent (13-18 Year)		Adults (19-44 Year)		Middle Age (45-59 Year)		Old (60 Year & Above)	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Bolangir	38	3.1	47	3.9	121	10.0	163	13.46	497	41.0	221	18.2	124	10.2
Bargarh	17	2.3	23	3.1	69	9.2	70	9.38	325	43.6	140	18.8	102	13.7
Boudh	64	7.7	48	5.8	64	7.7	56	6.73	408	49.0	120	14.4	72	8.7
Dhenkanal	26	1.5	61	3.6	109	6.5	184	10.95	706	42.0	383	22.8	211	12.6
Galapali	22	3.7	21	3.5	72	12.1	87	14.65	252	42.4	103	17.3	37	6.2
Garjam	28	2.5	38	3.4	111	10.0	100	8.98	488	43.8	196	17.6	152	13.7
Jairauguda	21	1.3	48	2.9	134	8.1	157	9.49	719	43.5	334	20.2	241	14.6
Kalahandi	17	1.4	57	4.5	128	10.2	164	13.09	519	41.4	282	22.5	86	6.9
Kandhamal	23	1.8	42	3.2	159	12.3	171	13.21	528	40.8	225	17.4	146	11.3
Kendujhar	32	2.4	65	5.0	177	13.5	142	10.85	588	44.9	211	16.1	94	7.2
Koraput	33	3.9	73	8.6	135	16.0	109	12.17	319	37.7	102	12.1	81	9.6
Malkangiri	19	4.8	28	7.1	51	13.0	68	17.25	143	36.5	55	14.0	28	7.1
Mayurbhanj	63	2.0	130	4.0	390	12.1	439	13.63	1487	46.5	515	16.0	188	5.8
Nabarangpur	63	3.9	87	5.3	196	12.0	236	14.43	649	39.7	249	15.2	156	9.5
Nayagarh	18	1.4	47	3.7	107	8.4	88	6.90	519	40.7	339	26.6	157	12.3
Nusapada	16	2.2	40	5.4	75	10.2	104	14.11	271	36.8	118	16.0	113	15.3
Rayagada	19	4.1	25	5.3	38	8.1	78	16.63	200	42.6	72	15.4	37	7.9
Total	519	3.6	880	4.3	2136	10.5	2410	11.89	8628	42.6	3665	18.1	2025	10.0

2.5 Educational Qualification among the Sample Population

The educational status of the surveyed district is presented in Fig 2.4. It indicates that nearly one-fourth of the population lacks formal education as 23.4 percent are illiterate. This is closely followed by those with secondary education (22.8%), higher secondary 14.7% and Primary 14.2%.

Fig2.4: Educational Status of members of Sample Households



It is found that only 10% of members have completed graduation, while post-graduates are very few (3.5%), showing limited access to higher education. The others category (11.4%) may include vocational, technical, or informal education.

The high illiterate districts are Koraput (45%), Gajapati (41%), Malkangiri (34.5%), Nuapada (34.5%), Rayagada (35.1%), reflecting backwardness and tribal-dominated areas. (Table 2.5) Whereas Jharsuguda (32.9% secondary, 17.5% higher secondary, 12.5% graduates) and Dhenkanal (24.5% secondary, 17.1% higher secondary, 12.3% graduates) indicate relatively stronger educational profiles. Upto graduation level qualification Keonjhar has the highest percentage followed by Mayurbhanj district (12.9%). In Vocational type 25.8 percent from Ganjam district are educated followed by Keonjhar with 24.1 percent.

Table 2.4: Educational Status of members of Sample Households

Particulars	Illiterate		Primary		Secondary		Higher Secondary		Graduation		Post-Graduate		Others	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Balangir	104	31.7	48	3.2	195	14.4	282	23.3	111	9.2	14	4.3	19	2.2
Kalahandi	117	18.1	354	18.3	437	34.9	111	8.9	44	1.5	7	0.6	73	3.3
Bargarh	113	16.3	121	16.8	213	31.9	130	18.4	88	12.5	14	2.0	3	0.4
Boudh	130	17.6	363	48.1	185	15.0	14	1.9	7	0.9	14	1.8	17	3.8
Dhenkanal	140	15.2	301	19.0	338	24.5	271	17.1	186	12.3	91	5.7	97	6.1
Gajapati	116	41.0	79	12.7	133	24.1	42	7.6	44	8.0	35	6.4	1	0.2
Ganjam	190	18.7	117	11.3	173	17.1	111	10.9	107	10.6	34	3.3	262	25.8
Jharsuguda	181	11.4	275	17.8	310	32.9	271	17.3	133	12.5	30	1.9	77	5.0
Kandhamal	111	38.1	43	3.3	136	13.1	336	27.3	185	15.4	40	3.3	137	11.1
Keonjhar	175	14.1	44	3.6	166	13.5	205	16.7	209	17.0	134	10.9	196	14.1
Koraput	306	45.0	14	2.1	116	17.1	132	19.4	49	7.2	11	1.6	52	7.8
Malkangiri	120	34.5	5	1.4	86	19.0	129	29.9	16	4.6	2	0.6	0	0.0
Mayurbhanj	792	24.9	285	8.9	685	21.4	300	9.4	411	12.9	84	2.6	642	20.0
Nabarangpur	416	27.8	239	15.6	105	13.4	133	8.7	143	9.3	30	2.0	207	13.3
Rayagiri	118	19.7	281	32.3	277	31.1	37	4.7	31	4.2	14	2.0	73	8.0
Nuapada	113	34.3	41	6.0	130	12.0	143	21.3	33	7.8	10	2.9	16	3.6
Rayagada	151	35.1	8	1.8	75	17.3	140	32.3	55	7.8	10	4.8	5	1.1
Total	4476	33.4	1727	14.1	4372	32.8	2819	14.7	1920	10.0	664	3.3	2179	11.4

2.6: Distribution of Sample Households by their Religion

The religious composition of the surveyed households in total and across different districts is presented in table 2.5. The surveyed districts are almost dominated by Hindu 97 percent whereas Christians account for 2.5 percent while Muslims are negligible (0.04%). District wise it is seen that in many districts (Kalahandi, Ganjam, Boudh, Dhenkanal, Keonjhar, Jharsuguda, Rayagada, Mayurbhanj, Bargarh, Nuapada, Malkangiri), 100% of the surveyed households are Hindu, reflecting their

demographic dominance. But the district Gajapati and Koraput have Christian i.e., 45 percent and 19.4 percent respectively.

Table 2.5: Distribution of Sample Households by their Religion

District	Hindu		Muslim		Christian	
	N	%	N	%	N	%
Balangir	239	100	1	0.4	0	0.0
Kalahandi	320	100	0	0.0	0	0.0
Nayagarh	318	99	1	0.3	1	0.3
Gajapati	88	55	0	0.0	72	45.0
Ganjam	240	100	0	0.0	0	0.0
Boudh	240	100	0	0.0	0	0.0
Dhenkanal	400	100	0	0.0	0	0.0
Koraput	129	81	0	0.0	31	19.4
Kendujhar	320	100	0	0.0	0	0.0
Kandhamal	317	99	0	0.0	3	0.9
Naagarangpur	310	97	0	0.0	10	3.1
Jharsuguda	400	100	0	0.0	0	0.0
Rayagda	80	100	0	0.0	0	0.0
Mayurbhanj	720	100	0	0.0	0	0.0
Bargarh	160	100	0	0.0	0	0.0
Nuspe	160	100	0	0.0	0	0.0
Malkangiri	80	100	0	0.0	0	0.0
	4521	97	2	0.0	117	2.5

2.7: Pattern of Land Ownership

The Table 2.6 presents the distribution of surveyed households by land ownership. It is found that 3.2 percent HHs are landless, indicating most households own at least some land. 44.5 percent HHs are small farmers followed by 42.9 percent marginal farmers. 8.3 percent are medium farmers whereas very small proportions only 2.1 percent are large farmers.

Dominance of marginal landholders is shown at Boudh (66.7%), Gajapati (70.6%), Ganjam (62.1%), and Kandhamal (60.6%) reflecting subsistence agriculture. Nayagarh (59.4%), Keonjhar (58.1%), Mayurbhanj (51.7%), and Kalahandi (50.9%) show small farmers (2.5–5 acres) as the largest group. In case of large farmers, Malkangiri has the highest farmers 6.3 percent. In case of landless farmers highest in Jharsuguda (10%) and followed by Kandhamal 9.4 percent.

Table 2.6: 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)	
	No.	%	No.	%	No.	%	No.	%	No.	%
Balangir	6	2.5	103	42.9	99	41.3	29	12.1	3	1.3
Bargarh	11	6.9	75	46.9	56	35.0	14	8.8	4	2.5
Boudh	0	0.0	160	66.7	60	25.0	20	8.3	0	0.0
Dhenkanal	12	3.0	158	39.5	195	48.8	28	7.0	7	1.8
Galapatti	0	0.0	113	70.6	47	29.4	0	0.0	0	0.0
Ganjam	9	3.8	149	62.1	71	29.6	8	3.3	3	1.3
Jharsuguda	40	10.0	121	30.3	174	43.5	55	13.8	10	2.5
Kalahandi	0	0.0	98	30.6	169	50.9	54	16.9	5	1.6
Kandhamal	30	9.4	194	60.6	89	27.8	7	2.2	0	0.0
Keonjhar	2	0.6	120	37.5	186	58.1	12	3.9	0	0.0
Koraput	2	1.3	69	43.1	77	48.1	12	7.5	0	0.0
Malikangiri	6	7.5	15	18.8	37	46.3	17	21.3	5	6.3
Mayurbhanj	2	0.3	321	44.6	372	51.7	25	3.5	0	0.0
Nabarangpur	11	3.4	102	31.9	157	49.1	42	13.1	8	2.5
Nayagarh	10	3.1	89	27.8	190	59.4	28	8.8	3	0.9
Nuapada	6	3.8	77	48.1	54	33.8	19	11.9	4	2.5
Rayagada	0	0.0	25	31.3	36	45.0	16	20.0	3	3.8
Total	147	3.2	1989	42.9	1993	44.5	386	8.3	55	1.2

2.8: Income of the Sample Households

The distribution of HHs by their annual income levels across surveyed districts is presented in Table 2.7. The largest shares of households (40.2%) fall in the ₹40,001–80,000 income range and 22.7 percent earn between ₹80,001–1,20,000. Whereas, 22.6 percent HHs are in the low income group, below ₹40,000. In the highest income categories ₹2,00,000 & above only 4.2 percent HHs are falling.

Table 2.7: Distribution of HHs by their Annual Income (in ₹)

Particulars	Up to 40000		40001- 80000		80001- 120000		120001- 160000		160001- 200000		Above 200000	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Balangir	89	57.1	113	47.1	23	10.4	6	2.8	4	1.7	3	1.3
Kalahandi	27	8.4	187	48.1	116	28.3	34	8.4	2	0.6	4	1.2
Nabarangpur	65	20.3	118	36.9	83	25.9	24	7.5	12	3.8	18	5.6
Nayagarh	144	45.0	70	21.9	46	14.4	15	4.7	6	1.9	39	12.1
Kandujhar	38	17.3	201	82.8	53	10.3	10	2.1	2	0.5	12	2.8
Kandhamal	189	32.8	124	20.8	10	1.1	9	1.8	1	0.3	7	1.2
Jharsuguda	10	3.5	118	39.3	173	43.0	32	13.0	16	6.0	32	8.0
Galapatti	70	43.8	65	34.4	19	11.9	7	4.4	1	0.6	2	5.0
Ganjam	138	37.5	44	13.3	45	13.3	8	3.3	3	1.3	2	0.8
Boudh	41	17.1	109	43.8	45	18.3	33	9.8	18	7.3	9	3.3
Dhenkanal	13	3.3	129	32.3	182	40.3	88	18.3	10	3.0	9	2.3
Koraput	88	59.0	65	37.3	11	6.9	0	0.0	0	0.0	1	0.6
Rayagada	21	26.3	34	42.3	11	13.3	9	11.3	1	1.3	4	5.0
Mayurbhanj	28	3.3	260	30.0	106	12.8	35	7.8	28	3.8	35	4.9
Bargarh	23	13.8	81	38.3	31	18.4	31	20.0	3	1.1	3	3.1
Nuapada	36	22.5	79	49.4	33	14.4	12	7.5	4	2.5	8	3.8
Malikangiri	16	20.0	34	42.3	16	20.0	6	7.5	4	5.0	4	5.0
Total	1048	22.6	1863	40.2	1994	22.7	347	7.5	131	2.8	187	4.2

District-wise it is seen that the districts Koraput (53%), Kandhamal (52.8%), Ganjam (57.5%), Gajapati (43.8%), and Nayagarh (45%) households mostly fall below ₹40,000, reflecting very low income concentration. The middle income group districts are Keonjhar, Mayurbhanj, Nuapada, Kalahandi, Jharsuguda, Dhenkanal etc. Jharsuguda, Nayagarhand(Mayurbhanj) etc have relatively higher proportions in the top income bracket.

2.8 Findings

The socio-economic profile of surveyed households highlights the predominance of Scheduled Tribe communities, a youth-dominated population, and widespread reliance on small and marginal farming. Despite gradual improvements in education, illiteracy remains high in southern tribal districts, and access to higher and technical education is limited. Landlessness is relatively low, but farm sizes are shrinking, restricting income potential. Household earnings are concentrated in the lower-income brackets, with poverty particularly acute in tribal and hilly districts.

CHAPTER III

PRODUCTION OF MILLETS

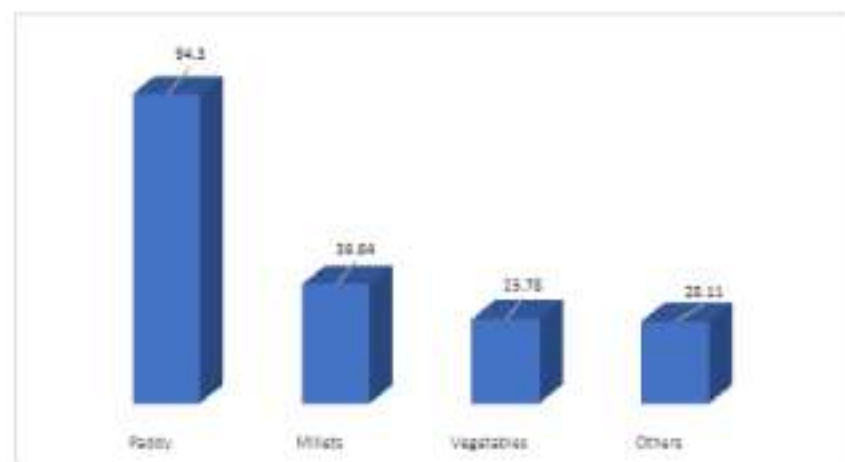
3.1 Introduction

This chapter delves into the production of millets in the study areas, drawing on data collected from 58 blocks across 17 districts in Odisha. The analysis primarily focuses on the distribution of land under millet cultivation compared to other crops, the usage of seeds, agronomic practices, as well as the production and yield of millets among the sample households in the sample villages. Additionally, this chapter highlights the challenges and opportunities associated with promoting millet cultivation in the selected districts under SAA, Phase VI.

3.2 Area, Production, and Yield

The distribution of sample respondent households engaged in the cultivation of various crops is shown in Fig 3.1. A significant portion of the respondent population across the 17 districts depends on agriculture for their livelihoods. Out of 4640 sample HHs, 94.3 percent cultivate paddy, confirming its dominance as the staple crop across Odisha. (Fig 3.1) 56.4 percent of HHs cultivate millets, showing regional variations with high concentration in a few districts. 25.8% cultivate vegetables and 22.1% cultivate other crops, showing diversification but in smaller proportions compared to paddy.

Fig 3.1: Distribution of HHs by their Cultivation of Crops



The distribution of households (HHs) by crop cultivation across districts is explained in Table 3.1. Paddy is universally cultivated in almost all districts, with slightly lower shares in Boudh (95.0%), Kandhamal (91.9%), Koraput (90.6%), Nayagarh (90.9%), Nuapada (84.4%), Gajapati (86.9%) and Nabarangpur (62.5%).

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

Districts	Paddy		Millets		Vegetable		Others	
	No.	%	No.	%	No.	%	No.	%
Balangir	240	100.0	133	55.42	10	4.17	82	34.17
Bargarh	160	100.0	33	20.63	140	87.50	100	62.50
Boudh	228	95.0	10	4.17	144	60.00	160	66.67
Dhenkanal	400	100.0	21	5.25	110	27.50	218	54.50
Gajapati	139	86.3	133	84.38	53	33.13	31	19.38
Ganjam	251	96.3	210	87.50	82	34.17	47	19.38
Jharsuguda	400	100.0	62	15.50	45	11.25	18	4.50
Kalahandi	517	99.1	517	99.06	11	3.44	149	46.56
Kandhamal	294	91.9	102	31.88	130	40.63	7	2.19
Keonjhar	320	100.0	0	0.00	48	14.38	4	1.25
Koraput	145	90.6	153	95.63	0	0.00	7	4.38
Malkangiri	75	93.8	80	100.00	35	43.75	73	91.25
Mayurbhanj	720	100.0	0	0.00	218	30.28	85	11.81
Nabarangpur	200	62.5	275	85.94	0	0.00	4	1.25
Nayagarh	291	90.9	12	3.75	110	34.38	71	22.19
Nuapada	135	84.4	93	58.13	45	28.13	82	51.25
Rayagada	80	100.0	64	80.00	17	21.25	27	33.75

It is observed that millet cultivation is concentrated in tribal-dominated or hilly districts. It is very high in Malkangiri district cultivated by cent percent surveyed farmers. Besides this it also high in Koraput (95.6%), Kalahandi (99.1%), Rayagada (80%), Nabarangpur (85.9%), Gajapati (84.4%), Ganjam (87.5%). But in district like Boudh (4.2%), Nayagarh (3.8%) it is low. whereas in Mayurbhanj and Keonjhar no one cultivate millets. It indicates millet cultivation is geographically specific, often tied to agro-ecological conditions and traditional food systems.

Vegetable Cultivation is prominent in Bargarh (87.5%), Boudh (60.0%), Kandhamal (40.6%), Nayagarh (34.4%), Ganjam (34.2%), Mayurbhanj (30.3%). It is absent or negligible in Koraput, Nabarangpur, and Keonjhar. In other crops like fruits etc high shares in Malkangiri (91.3%), Boudh (66.7%), Bargarh (62.5%), Dhenkanal (54.5%), Nuapada (51.3%), Kalahandi (46.6%), whereas negligible in Nabarangpur (1.3%), Keonjhar (1.3%), Kandhamal (2.2%). This is also shown that some districts practice significant diversification beyond staples (likely pulses, oilseeds, and commercial crops).

Area under millet cultivation (in acres) and production (in quintals) across different surveyed districts is shown in Table 3.2. The production is consistently higher than the area in several districts, showing relatively good productivity. Kalahandi shows the highest production despite moderate area under cultivation indicating very high productivity in this district. Production is significantly higher compared to the cultivated area in the districts like Gajapati, Nabarangpur, Rayagada. Whereas Balangir, Bargarh, Boudh, Dhenkanal, Jharsuguda, Nuapada districts have less area and low production compared to other districts. This indicates millet farming is less prominent in these regions. Some districts like Keonjhar, Mayurbhanj have zero area under millets, while others like Kalahandi, Nabarangpur, Gajapati, Koraput, and Rayagada dominate both in terms of area and production.

Table 3.2: Area, Production and Yield of Millets by the surveyed HHs

Districts	Millet Cultivated HHs	Area (in acre)	Production (in Qtl)	Yield (Qtl/Acre)
Balangir	139	99.91	88.55	0.89
Bargarh	33	12.9	13.15	1.79
Boudh	10	7.9	19.58	2.48
Dhenkanal	21	7.2	14.2	1.9
Gajapati	136	145.03	189.25	4.06
Ganjam	210	145.9	117.92	0.8
Jharsuguda	62	63.26	116.31	1.78
Kalahandi	317	365.43	909.4	2.49
Kandhamal	103	82.7	138.88	1.68
Keonjhar	0	0	0	0
Koraput	153	243.01	207.1	0.85
Malkangiri	80	107.5	146.7	1.36
Mayurbhanj	0	0	0	0
Nabarangpur	275	242.34	434.8	2.62
Nayagarh	12	12.1	10.2	0.84
Nuapada	93	105.13	153.65	1.46
Rayagada	64	106.1	345	3.25

Gajapati (4.06) and Rayagada (3.25) stand out with the highest yields, showing very efficient millet production. Nabarangpur (2.62), Kalahandi (2.49), Boudh (2.48) also registered high yield rate. Whereas, Dhenkanal (1.9), Bargarh (1.79), Jharsuguda (1.78), Kandhamal (1.68), Nuapada (1.46) show average performance. At the same time Balangir (0.89), Koraput (0.85), Nayagarh (0.84), Ganjam (0.8), Malkangiri (1.36) have poor productivity, indicating need for better practices. Clearly, southern and tribal districts (Koraput, Rayagada, Nabarangpur, Kalahandi, Gajapati) dominate in acreage.

3.3 Type of Millets Seeds Used

Table 3.3, explained about the different type of millets seeds used across the district. Out of 1700 millet-growing HHs, 79.8% use local seeds (1357 HHs) and 20.2% use HYV (High Yielding Variety) seeds (344 HHs) shows that traditional/local seed use still dominates millet cultivation in surveyed district, though some districts show significant adoption of HYVs. In the district Boudh, Jharsuguda, Malkangiri local seeds are used by all. Nabarangpur (98.2%), Kalahandi (94.6%), Ganjam (93.8%) are very high dependence on local seeds.

In Nayagarh district all the 12 millets cultivation HHs are using HYV seeds. At the same time Rayagada is the highest adoption of HYV seeds where it is used by 95.3 percent farmers. Whereas, Koraput (39.2%) and Nuapada (36.6%) districts have substantial use of HYV.

Table 3.3 Type of Millet Seeds Used for Millets Cultivation

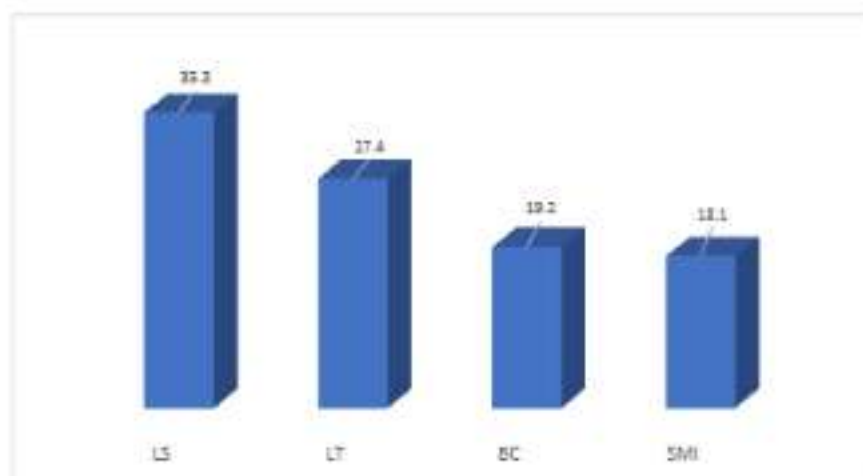
<i>Districts</i>	<i>Local Seeds</i>		<i>HYV Seeds</i>		<i>Total</i>
	<i>No.</i>	<i>%</i>	<i>No.</i>	<i>%</i>	<i>No.</i>
Balangir	93	69.92	40	30.08	133
Bargarh	28	84.85	5	15.15	33
Boudh	10	100.00	0	0.00	10
Dhenkanal	10	47.62	11	52.38	21
Gajapati	74	54.81	61	45.19	135
Ganjam	197	93.81	13	6.19	210
Jharsuguda	62	100.00	0	0.00	62
Kalahandi	300	94.84	17	5.36	317
Kandhamal	78	76.47	24	23.53	102
Keonjhar	0	0.00	0	0.00	0
Koraput	93	60.78	60	39.22	153
Malkangiri	80	100.00	0	0.00	80
Mayurbhanj	0	0.00	0	0.00	0
Nabarangapur	270	98.18	5	1.82	275
Nayagarh	0	0.00	12	100.00	12
Nuapada	39	63.44	24	36.56	93
Rayagada	3	4.69	61	95.31	64
Total	1357	79.82	344	20.22	1700

3.4: Package of Agronomic Practices

The Fig 3.2 shows the adoption levels of different recommended package of agronomic practices followed by the millet-cultivating sample households. Line Sowing (LS) has the highest adoption rate, with 35.3% of farmers following this method. It is seen that a relatively higher acceptance of structured sowing practices, likely because of their visible impact on crop management and yield.

Line Transplanting (LT) is followed by 27.4% of farmers, suggesting moderate adoption, possibly where water and labour conditions are favourable. Broadcasting (BC), is a more traditional method, still accounts for 19.2%, reflecting that some farmers continue with conventional approaches due to ease and lower input costs. System of Millet Intensification (SMI) shows the lowest adoption at 18.1%, highlighting limited penetration of this modern, input-intensive practice that requires greater awareness, training, and resources. This indicates that the newer methods like SMI are still less widely adopted.

Fig 3.2: Percentage of Farmers in Package of Practices



The table 3.4 gives a detailed picture of the adoption of different millet cultivation practices among 1700 sample farmers. District-wise the highest adoption of SMI is in Koraput (58.8%), Dhenkanal (47.6%), and Kalahandi (30%). While, it is absent in several districts like Balangir, Bargarh, Boudh, Kandhamal, Nayagarh, Nuapada, Rayagada, and Malkangiri.

Fig 3.4: Percentage of Farmers in Package of Practices across Districts

	SMI		LT		LS		BC	
	No.	%	No.	%	No.	%	No.	%
Balangir	3	2.3	70	52.6	56	42.1	4	3.0
Bargarh	0	0.0	4	12.1	15	45.5	14	42.4
Boudh	0	0.0	10	100.0	0	0.0	0	0.0
Dhenkanal	10	47.6	8	38.1	3	14.3		0.0
Galapati	28	20.7	29	21.5	23	17.0	55	40.7
Ganjam	59	28.1	36	12.4	109	49.0	22	10.5
Jharsuguda	0	0.0	46	74.2	6	9.7	10	16.1
Kalahandi	95	30.0	114	36.0	97	30.6	11	3.5
Kandhamal	0	0.0	17	16.7	80	78.4	5	4.9
Keonjhar	0	0	0	0	0	0	0	0
Koraput	90	58.8	10	13.1	30	19.6	13	8.5
Malkangiri	0	0.0	9	11.3	9	11.3	62	77.5
Mayurbhanj	0	0	0	0	0	0	0	0
Nabarangpur	23	8.4	62	22.5	83	30.2	107	38.9
Nayagarh	0	0.0	8	66.7	4	33.3	0	0.0
Nuapada	0	0.0	33	35.5	50	53.8	10	10.8
Rayagada	0	0.0	9	16.1	41	64.1	14	21.9

Line Transplanting (LT) is highly adopted in the districts like Boudh (100%), Jharsuguda (74.2%), and Nayagarh (66.7%). This is also significant in Nuapada (35.5%) and Kalahandi (36%). Whereas Line Sowing (LS) is highly adopted particularly in Kandhamal (78.4%), Nuapada (53.8%), Rayagada (64.1%), and Ganjam (49%), considered a preferred method in rainfed tracts due to its relatively low cost and better yield performance.

At the same time Broadcasting is dominated in the districts such as Malkangiri (77.5%), followed by Bargarh (42.4%), Gajapati (40.7%), and Nabarangpur (38.9%). This indicates that in several tribal and less mechanized regions, farmers still rely on traditional, labour-saving practices.

3.5: Reasons for not Cultivating Millets

There are several factors for not cultivating millet by the sample HHs (Table 3.5). The data reveals a number of key barriers to millet cultivation, highlighting both economic and logistical challenges faced by farmers across the surveyed districts.

Table 3.5: Reason for not Cultivating Millets by the Sample HHs

Districts	Not Profitable		Shortage of Land		Non-availability of Seed		Lack of Irrigation		Others	
	No.	%	No.	%	No.	%	No.	%	No.	%
Belangir	50	46.7	55	51.4	25	23.4	10	9.3	0	0.0
Bargarh	47	37.0	51	40.2	22	17.3	7	5.5	0	0.0
Boudh	100	43.5	50	21.7	45	19.6	35	15.2	0	0.0
Dhenkanal	150	39.6	134	35.4	45	11.9	50	13.2	0	0.0
Gajapati	10	40.0	9	36.0	1	4.0	2	8.0	3	12.0
Ganjam	3	10.0	11	36.7	0	0.0	3	10.0	13	43.3
Jharsuguda	172	50.9	25	7.4	56	16.6	0	0.0	236	69.8
Kalahandi	0	0.0	0	0.0	0	0.0	0	0.0	3	100.0
Kandhamal	46	21.1	130	59.6	6	2.8	36	16.5	0	0.0
Keonjhar	200	62.5	0	0.0	120	37.5	0	0.0	0	0.0
Koraput	0	0.0	7	100.0	0	0.0	0	0.0	0	0.0
Malkangiri	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Mayurbhanj	156	21.7	138	19.2	78	10.8	161	22.4	187	26.0
Nabarangpur	23	51.1	8	17.8	5	11.1	2	4.4	8	17.8
Nayagarh	65	21.1	155	50.3	59	19.2	29	9.4	0	0.0
Nuapada	28	41.8	19	28.4	9	13.4	5	7.5	6	9.0
Rayagada	7	43.8	9	56.3	0	0.0	0	0.0	0	0.0
Total	1057	36.0	801	27.2	471	16.0	340	11.6	456	15.5

The table presents the district-wise distribution of reasons for not cultivating millets across different parts of Odisha. When aggregated across all districts, the most prominent reason is that farmers find millet cultivation “not profitable”, with over one-third (36 percent) of households citing this factor. This reflects a widespread perception that the returns from millets are relatively low compared to other crops, and hence farmers are less motivated to continue with it. Districts like Keonjhar (62.5 percent), Jharsuguda (50.9 percent), and Nabarangpur (51.1 percent) particularly highlight profitability concerns.

The second major reason, reported by 27.2 percent of households, is the shortage of land. This constraint is striking in districts such as Koraput, where all respondents (100 percent) attributed their non-cultivation of millets to lack of land, and in Kandhamal (59.6 percent) and Nayagarh (50.3 percent) where more than half of the households faced this difficulty.

The non-availability of seeds emerges as another challenge, though relatively less significant overall (16 percent). It is nonetheless important in certain areas. For example, in Keonjhar, 37.5 percent of households mentioned seed unavailability as a barrier, while districts like Nayagarh (19.2 percent) and Jharsuguda (16.6 percent) also reported this problem. This indicates the uneven reach of seed distribution mechanisms.

Whereas, only 11.6 percent of households overall, making lack of irrigation is the least common reason. However, it is still relevant in specific districts such as Mayurbhanj (22.4 percent), Kandhamal (16.5 percent), and Boudh (15.2 percent), where rainfed farming systems dominate.

A particularly notable finding is the significance of the “others” category, that district-specific socio-cultural or institutional factors such as food preferences, migration, lack of awareness, or government policy gaps play a major role, and these reasons need qualitative exploration beyond the survey data, which accounts for 15.5 percent of the responses but dominates in certain districts. While Malkangiri recorded no reasons, as all the survey HHs are cultivating millets.

3.6 Findings:

The analysis shows that while paddy continues to dominate agriculture in Odisha, millet cultivation is regionally concentrated in tribal and hilly districts such as Kalahandi, Koraput, Rayagada, Nabarangpur, and Gajapati. These areas not only contribute significantly to acreage and production but also record comparatively higher yields. Traditional practices and local seeds still prevail, though adoption of HYV seeds and improved agronomic methods is gradually emerging in select districts. At the same time, non-cultivation is largely driven by perceptions of low profitability, shortage of land, and seed unavailability, highlighting systemic and economic challenges.

CHAPTER IV: CONSUMPTION OF MILLETS

4.1 Introduction

The focus of this chapter is to analyse patterns of millet consumption among the sample households across the districts. It also explores the quantity of millet consumed by households; quantity of millets & recipes consumed by the sample households. By doing so, the chapter aims to provide a comprehensive picture about the patterns of millets consumption and preferences among the sample households in the surveyed districts under Phase VI Shree Anna Abhiyan.

4.2 Millet Consumption of Sample Households

Millets are considered to be the next super food or nutri-cereals of the world because of their high nutritional content. They can be useful as a sustainable means for nutritional security. Table 4.1 presents the district-wise distribution of sample household by quantity of millet consumed per year.

Table 4.1: Average Annual Consumption of Millets by Sample HHs across Districts

<i>Districts</i>	<i>Total No. of Sample HHs</i>	<i>Average Consumption in Kg</i>
Balangir	240	32.46
Bargarh	160	22.03
Boudh	240	12.05
Dhenkanal	400	10.84
Gajapati	160	46.51
Ganjam	240	25.55
Jharsuguda	400	24.29
Kalahandi	520	168.93
Kandhamal	320	15.05
Keonjhar	320	0
Koraput	160	79.58
Malkangiri	80	50.38
Mayurbhanj	720	37.31
Nabarangpur	320	56.65
Nayagarh	320	4.11
Nuapada	160	47.49
Rayagada	80	67.2

The consumption of millets across different districts presents a highly uneven pattern, reflecting strong regional and cultural variations in food habits. At one extreme lies Kalahandi, where the average annual household consumption is as high as 168.93 kilograms, making it a clear outlier and demonstrating that millets still occupy a central place in the local diet. This level of consumption is particularly among tribal communities, millets continue to serve as a staple food. Alongside Kalahandi, other districts in the southern belts such as Koraput, Rayagada, Nabarangpur, Malkangiri, Nuapada, and Gajapatals also report high levels of consumption ranging between 46 and 80 kilograms

per household annually. These areas, largely tribal dominated and rain-fed, continue to maintain a strong dependence on millets as part of their traditional food culture and food security systems.

In contrast, many western and northern districts such as Mayurbhanj, Balangir, Bargarh, Jharsuguda, and Ganjam report only moderate consumption, averaging between 22 and 37 kilograms per household.

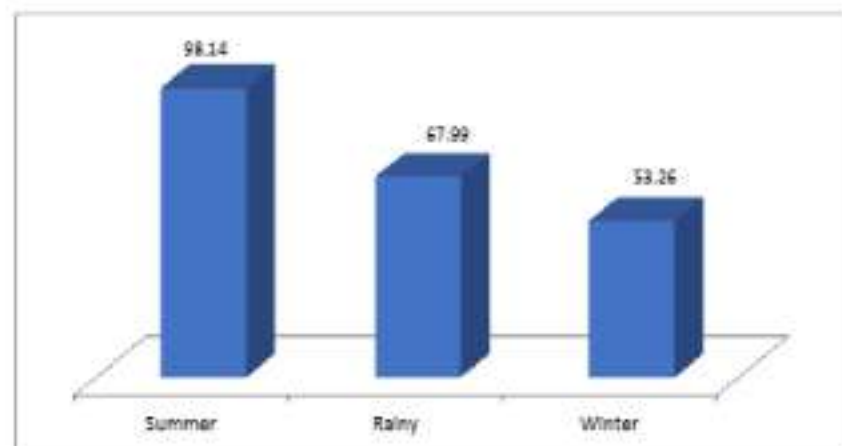
The lowest levels of consumption are found in central and coastal districts such as Dhenkanal, Boudh, Kandhamal, and Nayagarh, where average household consumption ranges between 4 and 15 kilograms annually. Nayagarh is particularly striking with an average of only 4.11 kilograms, suggesting that millet has almost disappeared from the local diet. Keonjhar records no consumption at all, reflecting either a completely absent from the diet.

This wide disparity reveals a clear regional divide. Southern tribal districts remain heavily millet-dependent, central and coastal areas have shifted strongly towards rice, and western Odisha occupies an intermediate position where millet is present but no longer central to dietary patterns. The variation also points to larger processes of dietary change under the influence of the public distribution system, agricultural diversification, and changing food preferences.

4.3: Millets Consumption across Seasons

The data in fig 4.1 shows the distribution of millets consuming sample households during different seasons in the study area. The seasonal pattern of millet consumption shows a clear fluctuation across the year, with households consuming the highest quantities during summer, followed by a decline in the rainy season and the lowest levels in winter. During summer, average millet consumption rises to 98.14 kilograms, indicating that it is the most preferred season for millet intake. As the rains set in, consumption drops significantly to 67.99 kilograms.

Fig 4.1: Millets Consumption across Seasons (in kg)



In winter, millet consumption falls further to 53.26 kilograms, the lowest across the year. Overall, it highlights that millet consumption is not steady throughout the year but varies according to both cultural food habits and seasonal availability, pointing to the importance of promoting year-round utilization.

The district-wise distribution of HHs for millets consumption during different seasons is presented in Table-4.2. It is seen that district wise also the consumption of millet among the HHs is more in summer, compared to other seasons.

Table 4.2: Millets Consumption across Seasons (in numbers)

<i>Districts</i>	<i>Winter</i>		<i>Summer</i>		<i>Rainy</i>	
	No.	%	No.	%	No.	%
Balangir	84	36.1	233	100.0	136	58.4
Bargarh	0	0.0	96	88.1	30	27.5
Boudh	7	70.0	10	100.0	6	60.0
Dhenkanal	3	14.3	20	95.2	10	47.6
Gajapati	61	53.0	106	92.2	68	59.1
Ganjam	94	44.5	211	100.0	127	60.2
Jharsuguda	22	30.6	72	100.0	45	62.5
Kalahandi	185	58.4	317	100.0	249	78.5
Kandhamal	73	27.7	264	100.0	120	45.5
Keonjhar	0	0.0	0	0.0	0	0.0
Koraput	150	98.0	153	100.0	153	100.0
Malkangiri	63	78.8	69	86.3	69	86.3
Mayurbhanj	26	100.0	26	100.0	26	100.0
Nabarangpur	241	83.4	286	99.0	263	91.0
Nayagarh	4	33.3	12	100.0	2	16.7
Nuapada	50	32.5	151	98.1	75	48.7
Rayagada	80	100.0	80	100.0	80	100.0

In most blocks, nearly all sampled households report consuming millets in summer, with several districts such as Balangir, Ganjam, Jharsuguda, Kalahandi, Kandhamal, Koraput, Nayagarh, Mayurbhanj, and Rayagada recording full or near-complete participation.

In contrast, winter consumption shows considerable variability. Some districts, like Rayagada, Mayurbhanj, and Koraput, report universal or near-universal consumption even in winter, reflecting millet's central role in the household diet and its deep integration into traditional food practices. Nabarangpur also records very high winter consumption, with over four-fifths of households continuing to rely on millets. However, in many other districts, winter consumption drops sharply. For example, only 14.3 percent of households in Dhenkanal, 27.7 percent in Kandhamal, and 32.5 percent in Nuapada report millet consumption in this season, indicating that in large parts of Odisha millet has become a supplementary rather than staple food during colder months, replaced by cereals such as rice and wheat that are perceived to provide greater satiety and warmth.

Rainy season consumption follows a middle pattern. In some districts, like Koraput and Rayagada, consumption remains universal at 100 percent, while Nabarangpur also reports a very high 91 percent. However, in other districts, consumption falls to moderate levels: Kandhamal (45.5 percent), Dhenkanal (47.6 percent), and Nayagarh (16.7 percent). The lower rainy season figures in several places may be linked to difficulties in storing and processing millets during high humidity, as well as dietary shifts towards rice which is more readily available and consumed during monsoon months.

A striking feature of the table is the complete absence of millet consumption in Keonjhar across all seasons, reflecting either negligible production and availability or a complete transition in dietary preference away from millets. On the other hand, districts like Rayagada, Mayurbhanj, and Koraput stand out for their consistent, year-round consumption, showing the cultural and nutritional importance of millets in their daily diets.

4.4 Consumption of Millets in Different Meals of the Day

The distribution of millets consuming households by their millet's consumption in different meals of the day is presented at table 4.3.

Table 4.3: HHs Millets Consumption in Different Meals of a Day

Districts	Breakfast		Lunch		Evening Snacks		Dinner	
	No	%	No	%	No	%	No	%
Balangir	223	95.71	207	88.84	172	73.82	187	80.26
Bargarh	66	60.55	78	71.56	78	71.56	21	19.27
Boudh	10	100.00	8	80.00	3	30.00	0	0.00
Dhenkanal	21	100.00	20	95.24	2	9.52	3	14.29
Gajapati	100	86.96	92	80.00	63	54.78	54	46.96
Ganjam	187	88.63	196	92.89	32	15.17	24	11.37
Jharsuguda	65	90.28	52	72.72	19	26.39	9	12.50
Kalahandi	317	100.00	290	91.48	198	62.46	37	11.67
Kandhamal	252	95.45	214	81.06	102	38.64	190	71.97
Keonjhar	0	0.00	0	0.00	0	0.00	0	0.00
Koraput	153	100.00	142	92.81	114	74.51	140	91.50
Malkangiri	38	47.50	69	86.25	49	61.25	63	78.75
Mayurbhanj	26	100.00	0	0.00	26	100.00	0	0.00
Nabarangpur	205	70.93	285	98.62	280	96.89	272	94.12
Nayagarh	12	100.00	12	100.00	2	16.67	6	50.00
Nuapada	151	98.05	110	71.43	79	51.30	132	85.71
Rayagada	38	47.50	80	100.00	64	80.00	74	92.50

It reveals that millets are incorporated into the daily diet in diverse ways, but their prominence varies significantly depending on the meal. Breakfast emerges as the most common occasion for millet consumption, with very high uptake across most districts. In Balangir, Kandhamal, Kalahandi, Koraput, Mayurbhanj, Dhenkanal, Boudh, and Nayagarh, close to or all sampled households reported consuming millet-based dishes in the morning meal.

Lunch also shows a high share of millet consumption, though with some variation across districts. In Koraput, Nabarangpur, Kalahandi, and Rayagada, over 90 percent of households include millets in their lunch, indicating its role as a staple alongside or in place of rice. In contrast, in Mayurbhanj, millet appears absent from lunch, while in districts like Nuapada, Jharsuguda, and Balangir, consumption is moderate, pointing to millet's partial replacement by other cereals during the main meal of the day.

In the case of evening snacks, millet consumption is more uneven. Some districts, such as Mayurbhanj and Nabarangpur, show very high levels of use, with 97–100 percent of households incorporating millet in snack items, reflecting the adaptability of millets in lighter, snack-type foods.

By contrast, in districts like Ganjam, Dhenkanal, and Nayagarh, very few households consume millets in the evening, while other areas such as Koraput, Balangir, and Rayagada report moderate levels, suggesting regional differences in food culture and snack preferences.

Dinner presents a contrasting picture. In many districts, millet consumption at night is relatively low compared to breakfast and lunch. For instance, only about 11–12 percent of households in Ganjam, Jharsuguda, and Kalahandi consume millet at dinner, showing its limited role in the evening meal. However, districts like Koraput, Nabarangpur, Nuapada, and Rayagada report high levels of dinner-time consumption, often above 85 percent, suggesting millet remains a key staple for the last meal of the day in certain tribal belts.

An exceptional case is Keonjhar, where millet is absent across all meals. In the other hand, Nabarangpur stands out for its consistently high incorporation of millets across all meals, with more than 90 percent of households consuming millet at breakfast, lunch, snacks, and dinner. Similarly, Koraput and Rayagada also exhibit widespread integration of millet into all meals, reflecting its continuing role as a core staple in tribal regions.

4.5 Millets Recipes Consumed

The table 4.4 highlights the diversity of food preparations made from millets across the surveyed districts. Pittha/Thampo and Jau/Torani are the most widely consumed millet-based recipes. This recipe is consumed by 81.3% of households, with particularly high consumption in Kalahandi (98.4%), Koraput (98%), Mayurbhanj (100%), and Boudh (100%).

Table 4.4: Percentage of Sample HHs consume different Millet Recipes across the Districts

District	Pittha/Thampo		Chhenas		Jau/Torani		Kkari		Idli/Uppma		Sweets		Others	
	No	%	No	%	No	%	No	%	No	%	No	%	No	%
Balangir	221	84.8	119	51.1	226	87.0	151	64.8	113	48.1	119	51.1	118	51.5
Bargarh	70	84.1	0	0.0	47	63.1	80	83.8	0	0.0	1	0.9	15	22.1
Boudh	10	100.0	0	0.0	8	80.0	8	80.0	0	0.0	0	0.0	0	0.0
Dhenkanal	21	100.0	10	47.8	10	55.1	4	19.0	0	0.0	1	4.8	0	0.0
Dejapati	100	87.0	57	49.8	115	100.0	51	44.3	24	20.9	8	8.1	18	13.9
Ganjam	198	92.9	105	49.8	217	102.8	181	85.8	33	15.8	50	24.2	40	19.0
Jharsuguda	67	93.1	15	20.8	58	80.8	31	44.4	12	16.7	0	0.0	0	0.0
Kalahandi	312	98.4	180	56.8	271	85.3	228	71.9	88	21.3	40	11.8	0	0.0
Kandhamal	239	90.5	1	0.4	247	93.8	182	81.4	8	1.3	13	4.9	13	4.9
Keonjhar	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Koraput	150	98.0	1	0.7	150	98.0	51	34.0	14	9.2	1	0.7	102	66.7
Malikongiri	39	48.8	0	0.0	69	86.3	5	6.3	8	10.3	1	1.3	0	0.0
Mayurbhanj	26	100.0	0	0.0	26	100.0	0	0.0	0	0.0	0	0.0	0	0.0
Nabarangpur	113	28.8	23	11.1	180	96.8	39	13.3	22	7.8	0	0.0	14	4.8
Nayagarh	10	83.3	0	0.0	12	100.0	0	0.0	0	0.0	0	0.0	0	0.0
Nuapada	99	84.3	3	3.1	139	98.4	23	14.9	0	0.0	21	13.8	11	20.1
Rayagada	89	86.3	1	1.3	80	100.0	1	1.3	7	8.8	4	3.0	6	7.3
Total	1744	81.3	529	34.7	1984	91.8	1028	47.9	207	14.3	237	11.0	378	17.5

Malkangiri (48.8%) and Nabarangpur (39.8%) show relatively low preference. Whereas, Jau/Torani is consumed by 92.5% of households, making it the single most common millet preparation. It is universal in Gajapati (100%), Mayurbhanj (100%), Nayagarh (100%), and Rayagada (100%).

Khiri is the next significant recipe, consumed by 47.9% of households. It is very popular in Ganjam (85.8%), Bargarh (82.6%), and Boudh (80%). In contrast, its presence is minimal in Malkangiri (6.3%) and Rayagada (2.5%). While, Chhatua is consumed by 24.7% households, showing regional concentration. The highest adoption is in Kalahandi (56.8%), Balangir (51.1%), and Gajapati (49.6%), while it is almost absent in many districts like Boudh, Mayurbhanj, Nayagarh, and Malkangiri.

4.6 Findings:

The analysis shows wide regional variation in millet consumption across the surveyed districts. Southern tribal districts like Kalahandi, Koraput, Rayagada, Nabarangpur, Malkangiri, Nuapada, and Gajapati record high annual household intake (45–169 kg), while central and coastal districts such as Dhenkanal, Boudh, Kandhamal, Nayagarh, and Keonjhar show very low or negligible consumption. Seasonal patterns reveal highest consumption in summer, declining in rainy and winter months. Millets are most commonly eaten at breakfast and lunch, with dinner-time use varying by region. Recipe-wise, Jau/Torani (92.5%) and Pitha/Thampo (81.3%) dominate, while Khiri (47.9%) and Chhatua (24.7%) show regional concentration. Overall, millet remains central in tribal diets but is marginal in many other districts.

CHAPTER-V

PROCESSING AND MARKETING OF MILLETS

5.1 Introduction

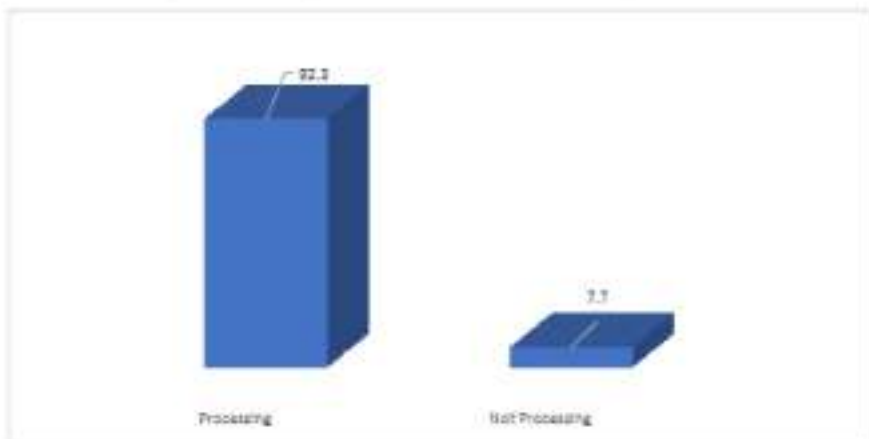
The processing and marketing of millets encompass the transformation of millet into value-added products, enhancing its nutritional value, and promoting the use of millets and their products through improved access to markets. This survey aimed to examine the current practices of processing and marketing among sample households across 58 blocks in 17 districts of the state.

The primary objective of this chapter is to assess the status of millet processing and marketing within the sample areas and to identify the challenges and opportunities for enhancing the millet value chain. It explores various practices employed by the sample households in processing millets, including dehulling, milling, roasting, and popping. It evaluates the availability and accessibility of processing units within the study areas, as well as the factors influencing the selection of processing methods. Furthermore, the chapter analyses the diverse modes of millet sales, including direct sales, cooperatives, middlemen, and online platforms.

5.2 Processing of Millets

Processing is a crucial step in production of millets. The figure 5.1 shows the percentage distribution of sample households based on whether they process millets or not. It is evident that a very high proportion of households (92.3%) are engaged in processing millets, while only a small fraction (7.7%) do not undertake processing activities. This indicates that millet processing is a widespread and common practice among the surveyed households, suggesting its importance in household consumption, value addition, and possibly for market readiness. The minimal share of non-processing households highlights that millet is rarely consumed or marketed in its raw form, and processing forms an integral part of its utilization pattern.

Fig 5.1: Percentage of Sample Households Processing Millets



The analysis of millet processing among cultivating farmers across different surveyed districts reveals a generally encouraging picture, with a majority of farmers actively engaging in processing their produce. In most districts, more than 85 percent of farmers reported practicing some form of processing, which indicates that millets are not merely grown as a cash crop but are also being transformed for household consumption or local value addition. (Table 5.1)

Table 5.1: Number of Sample HHs processing millets across the districts

Districts	Processing	%	Not Processing	%
Balangir	121	91.0	12	9.0
Bargarh	33	100.0	0	0.0
Boudh	8	80.0	2	20.0
Dhenkanal	17	81.0	4	19.0
Gajapati	121	89.6	14	10.4
Ganjam	210	100.0	0	0.0
Jharsuguda	58	93.3	4	6.5
Kalahandi	281	88.6	36	11.4
Kandhamal	89	87.3	13	12.7
Keonjhar	0	0.0	0	0.0
Koraput	142	92.8	11	7.2
Malkangiri	69	88.3	11	13.8
Mayurbhanj	0	0.0	0	0.0
Nabarangpur	262	95.3	13	4.7
Nayagarh	11	91.7	1	8.3
Nuapada	84	90.3	9	9.7
Rayagada	63	98.4	1	1.6

Districts such as Bargarh and Ganjam stand out with universal adoption, where every sampled farmer reported processing their millets. This complete participation highlights strong integration between cultivation and utilization. Similarly, in districts like Rayagada, Nabarangpur, Koraput, Balangir, Nuapada, and Nayagarh, the share of processing farmers is remarkably high ranging from 91 to 98 percent. These regions are traditionally millet-intensive, and the widespread adoption of processing practices reflects both cultural continuity and effective promotion under recent government interventions.

A slightly different picture emerges in districts such as Kalahandi, Kandhamal, Malkangiri, and Gajapati, where processing is still widely prevalent but not universal. Here, about 10–14 percent of farmers reported not processing their produce.

On the other hand it is seen in Boudh and Dhenkanal, where only around 80 to 81 percent of farmers process their millet. Even more striking is the complete absence of reported processing in Mayurbhanj.

5.3 Methods adopted for Processing Millets

Table 5.2 present the distribution of millets cultivating households by the methods of processing they used. It highlights whether the households rely on traditional methods, modern machinery, or a combination of both. The results reveal distinct regional differences and shed light on the stage of mechanization and modernization in millet post-harvest handling.

Table 5.2: Method Adopted for Processing Millets across the Districts

Districts	Traditional Methods		Use of Machinery		Used Both	
	No.	%	No.	%	No.	%
Balangir	40	35.71	54	48.21	18	16.07
Bargarh	30	90.91	3	9.09	0	0.00
Boudh	8	100.00	0	0.00	0	0.00
Dhenkanal	3	17.65	14	82.35	0	0.00
Gajapati	111	91.74	8	6.61	2	1.65
Ganjam	53	25.24	147	70.00	10	4.76
Jharsuguda	51	87.93	7	12.07	0	0.00
Kalahandi	219	77.94	60	21.35	2	0.71
Kandhamal	62	69.66	18	20.22	9	10.11
Keonjhar	0	0.00	0	0.00	0	0.00
Koraput	29	20.42	100	70.42	13	9.15
Malkangiri	8	11.59	42	60.87	19	27.54
Mayurbhanj	26	100.00	0	0.00	0	0.00
Nabarangpur	97	37.02	83	31.68	82	31.30
Nayagarh	11	100.00	0	0.00	0	0.00
Nuapada	10	11.90	65	77.38	9	10.71
Rayagada	45	71.43	17	26.98	1	1.59

In several districts, millet processing continues to rely overwhelmingly on traditional practices such as manual pounding, stone grinding, or hand-based techniques. Districts like Boudh (100%), Mayurbhanj (100%), and Nayagarh (100%) are entirely dependent on traditional methods, with no evidence of machinery adoption. Bargarh (90.91%), Gajapati (91.74%), Jharsuguda (87.93%), Kalahandi (77.94%), and Rayagada (71.43%) also report a very high reliance on traditional tools. These patterns suggest deep-rooted cultural practices, lack of access to processing infrastructure, or affordability issues in these regions.

Some districts, however, show a clear shift towards mechanized processing like Dhenkanal (82.35%), Nuapada (77.38%), Koraput (70.42%), and Ganjam (70%). Malkangiri (60.87%) also displays a majority preference for machinery. At the same time smaller but notable share of farmers use both traditional and machine-based methods, which may reflect transitional adoption. Nabarangpur (31.30%), Malkangiri (27.54%), and Nuapada (10.71%) have relatively high numbers combining both approaches. In Keonjhar, there is no production leads to no households were processing.

5.4 Marketing of Millets and Millet-based Products

The table 5.3 shows how many farmers across different surveyed districts are selling millets out of those cultivating them, along with the percentage breakdown between sellers and non-sellers. Kalahandi (92.7%) and Gajapati (91.9%) stand out, with a very high proportion of millet cultivators selling their produce. This indicates strong market orientation and possibly better linkages for millet sales in these districts. Boudh (70%) and Balangir (57.9%) also report relatively high levels of sales, suggesting that millet farming is commercially relevant here. Nayagarh (58.3%) shows more than half of farmers engaging in sales despite having a smaller sample.

Table 5.3 Number of Farmers Selling Millets from Total Cultivating Farmers

Districts	Millets Sold	%	Did not sell millets	%
Balangir	77	57.9	56	42.1
Bargarh	6	18.2	27	81.8
Boudh	7	70.0	3	30.0
Dhankanal	5	23.8	16	76.2
Gajapati	126	91.9	11	8.1
Ganjam	11	5.2	199	94.8
Jharsuguda	12	19.4	50	80.6
Kalahandi	294	92.7	23	7.3
Kandhamal	14	13.7	88	86.3
Koraput	69	45.1	84	54.9
Malkangiri	38	47.5	42	52.5
Mayurbhanj	0	0.0	0	0.0
Nabarangpur	118	42.9	157	57.1
Nayagarh	7	58.3	5	41.7
Nuapada	22	23.7	71	76.3
Rayagada	25	39.1	39	60.9

Whereas, Malkangiri (47.5%), Koraput (45.1%), Nabarangpur (42.9%), and Rayagada (39.1%) are in the middle range, where a significant portion of farmers sell millets but many also retain them for self-consumption. The low sales participation is shown in Jharsuguda (19.4%), Dhankanal (23.8%), Nuapada (23.7%), and Bargarh (18.2%) districts. Kandhamal (13.7%) and especially Ganjam (5.2%) are strikingly low where most farmers here consume rather than sell, showing subsistence oriented millet farming. Mayurbhanj has no reported millet-selling farmers, indicating either negligible millet production or purely subsistence use with no marketable surplus.

5.5 Selling Point of Millets

Table 5.4 is representing the data on the different channels through which households sell their millets production. Interestingly, the formal Mandi system seems to play only a limited role in the sale of millets. Except for a few districts such as Kandhamal (28.6%), Ganjam (54.5%), Kandhamal (28.6%), Malkangiri (42.1%), Nabarangpur (8.5%), Nuapada (13.6%), and Rayagada (32%), most districts report negligible or no sale of millets through Mandis. This indicates that state-regulated agricultural markets are underutilized or inaccessible for millet farmers.

Table 5.4: Number of Farmers Selling Millets at different Selling Point across the districts

District	Mandi		Middlemen/ Local Businessmen		Moneylender/ Sahukar		Daily Market/ Haar		Others	
	No.	%	No.	%	No.	%	No.	%	No.	%
Balangir	0	0.0	31	40.3	18	10.8	28	29.8	7	9.1
Bargarh	0	0.0	3	30.0	0	0.0	3	30.0	0	0.0
Boudh	0	0.0	7	100.0	0	0.0	0	0.0	0	0.0
Dhenkanal	0	0.0	5	100.0	0	0.0	0	0.0	0	0.0
Gajapati	4	3.2	94	75.8	28	21.0	0	0.0	0	0.0
Ganjam	8	54.5	4	26.4	1	6.1	0	0.0	0	0.0
Jharsuguda	0	0.0	12	0.0	0	0.0	0	0.0	0	0.0
Kalahandi	0	0.0	79	26.9	48	14.6	172	58.5	0	0.0
Kandhamal	4	28.6	3	21.4	1	7.1	6	42.9	0	0.0
Keonjhar	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Koraput	0	0.0	41	59.4	17	24.6	7	10.1	4	5.8
Malkangiri	16	42.1	12	31.6	3	7.9	5	13.2	2	5.2
Mayurbhanj	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Nabarangpur	10	8.5	105	87.3	4	3.4	0	0.0	1	0.8
Nayagarh	0	0.0	7	100.0	0	0.0	0	0.0	0	0.0
Nuapada	3	13.6	10	45.5	0	0.0	1	4.5	2	36.4
Rayagada	8	32.0	10	40.0	4	16.0	2	8.0	1	4.0
Total	31	9.2	421	30.8	113	13.9	218	26.4	23	2.8

The dominant mode of millet selling across most districts is through middlemen or local businessmen. The share is extremely high in districts like Gajapati (75.8%), Nabarangpur (87.3%), Koraput (59.4%), Boudh (100%), Dhenkanal (100%), and Nayagarh (100%). At the same time, in some districts, millet sales are linked to moneylenders or sahukars, indicating the persistence of credit-produce interlinkages. Districts such as Kalahandi (14.6%), Koraput (24.6%), Gajapati (21%), and Rayagada (16%) show significant dependence on local business system.

Local haats and daily markets also serve as important selling points, especially in districts like Kalahandi (58.5%), Nuapada (4.5%), Koraput (10.1%), Malkangiri (13.2%), and Rayagada (8%). Some districts reported millet sales through other channels, such as small-scale processors, NGOs, or emerging millet federations. Notable examples are Balangir (9.1%), Koraput (5.8%), Malkangiri (5.3%), Nuapada (36.4%), and Rayagada (4%).

5.6 Findings:

Processing of millets is widespread, with over 92% of households engaged, though reliance on traditional methods remains high in many districts (Boudh, Mayurbhanj, Nayagarh), while mechanization is more common in Ganjam, Olenkanal, Koraput, and Nuapada. Marketing patterns show sharp contrasts: districts like Kalahandi (92.7%) and Gajapati (91.9%) have strong sales orientation, while others such as Ganjam, Kandhamal, Jharsuguda, and Bargarh show very low market participation, and Mayurbhanj reports none. Across Odisha, middlemen and local businessmen dominate millet trade, while mandis are rarely used. Daily markets and small-scale local channels also play a role, indicating both opportunities and constraints in strengthening formal market linkages.

CHAPTER-VI

SUMMARY & CONCLUSION

6.1 Summary

The Shree Anna Abhiyan, a flagship programme of the Department of Agriculture and Farmers Empowerment, was implemented with the aim of reviving millet production and consumption. This initiative holds significant implications for nutrition, the economy, and livelihoods in the state (Department of Agriculture and Farmers Empowerment, 2023). Before the implementation of the programme, a baseline survey was conducted across the selected districts in different phases to understand the characteristics of farmers and the dynamics of millet production, consumption, and marketing challenges. The summary presented in the report provides the major findings from Baseline Survey Phase VI, which was implemented in 17 districts across 58 blocks, comprising 4640 sample households.

The socio-economic profile of the surveyed households provides a holistic understanding of the demographic and livelihood conditions across the districts. The gender distribution shows a slightly higher male population overall, though districts such as Gajapati and Rayagada reflect female dominance. Social composition is marked by the predominance of Scheduled Tribe households (33.4%), with significant district-level variations from 100% tribal households in Gajapati to overwhelming OBC/SEBC representation in coastal districts like Puri and Cuttack. Age distribution reveals that adults (15–44 years) constitute the largest share, while both infants and elderly groups represent smaller but important dependency segments.

Education levels remain a critical challenge, with nearly one-fourth of the population being illiterate, especially in southern tribal districts such as Koraput, Rayagada, and Malkangiri. Access to higher education is limited, though districts like Jharsuguda and Dhenkanal perform relatively better. In terms of religion, Hinduism is overwhelmingly dominant (97%), while Christians form a visible minority in Koraput and Gajapati.

Landlessness is relatively low (3.2%), most households operate as marginal (42.9%) or small farmers (44.5%), pointing towards shrinking farm sizes and subsistence-level farming. Household income distribution further underscores vulnerability, as 62.9% of families fall within low to lower middle income groups (up to ₹1,20,000 annually), with poverty more concentrated in tribal and hilly regions.

While paddy dominates cultivation with 94.3% of households, only 36.6% grow millets, mainly concentrated in tribal and hilly districts such as Kalahandi, Koraput, Rayagada, Nabarangpur, and Gajapati. Districts like Mayurbhanj and Keonjhar record no millet cultivation. Area and production data reveal that southern districts not only contribute substantially to acreage but also achieve higher productivity, with Gajapati, Rayagada, and Nabarangpur reporting the best yields.

Seed use patterns show that traditional/local seeds continue to dominate (79.8%), though some districts, especially Rayagada and Nayagarh, have high adoption of HYV seeds. Agronomic practices varied as Line Sowing (35.3%) and Line Transplanting (27.4%) are relatively common, while modern

methods like the System of Millet Intensification (18.1%) remain limited. Broadcasting persists in several tribal districts, reflecting continued reliance on traditional methods.

Barriers to millet cultivation include perceptions of low profitability (36%), shortage of land (27.2%), seed unavailability (16%), and lack of irrigation (11.6%). District-specific reasons also emerged, such as socio-cultural factors, migration, and policy gaps.

Annual household consumption ranges from as high as 158.93 kg in Kalahandi to negligible levels in districts like Nayagarh (4.11 kg) and zero in Keonjhar. Southern tribal districts Kalahandi, Koraput, Rayagada, Nabarangpur, Malkangiri, Nuapada, and Gajapati remain millet-centric, while central and coastal districts have largely shifted towards rice and wheat. Western Odisha occupies a middle ground with moderate intake. Seasonal data show millet consumption peaks in summer (98.14 kg on average), declines during the rainy season (67.99 kg), and is lowest in winter (33.26 kg). While many districts consume millets year-round, others record sharp seasonal drops, often linked to storage, processing challenges, and dietary substitution. Recipe preferences highlight Jau/Torani (92.5%) and Pitha/Thampo (81.3%) as the most widely consumed preparations. Khiri (47.9%) and Chhatua (24.7%) show localized popularity, with strong cultural anchoring in specific districts. In contrast, millet-based sweets and modern recipes like idli/upma remain marginal.

Processing emerges as a widespread practice, with 92.3% of households engaged, underscoring its central role in making millets consumable and market-ready. District-level variations are evident, while Bargarh and Ganjam report universal adoption of processing, others like Kalahandi, Kandhamal, and Malkangiri show small proportions of non-processors, and Mayurbhanj, Keonjhar records no processing at all.

In terms of methods, traditional practices such as manual pounding and stone grinding still dominate in several districts (Boudh, Mayurbhanj, Nayagarh, Gajapati, Jharsuguda), reflecting cultural continuity and limited mechanization. However, districts like Ganjam, Odenkanal, Koraput, and Nuapada show significant adoption of machinery, while places such as Nabarangpur and Malkangiri reflect transitional use of both traditional and modern methods.

On the marketing front, district-wise differences are severe. Kalahandi (92.7%) and Gajapati (91.9%) stand out with a high share of cultivators selling millets, followed by Boudh and Balangir, indicating strong market orientation. In contrast, Ganjam, Kandhamal, Jharsuguda, and Bargarh show very low levels of market participation, and Mayurbhanj records no sales. Middlemen and local businessmen dominate millet trade across the state, especially in districts like Nabarangpur, Gajapati, Koraput, and Nayagarh. Mandis, though part of the formal system, play only a marginal role. Daily markets and haats are important outlets in districts such as Kalahandi, Malkangiri, and Rayagada, while small-scale processors, NGOs, and millet federations have started emerging as alternative channels.

6.2 Conclusion

The surveyed households are characterized by tribal predominance, low literacy, and reliance on marginal agriculture, with income levels largely clustered in the lower ranges. Limited access to land, education, and non-farm opportunities perpetuates economic vulnerability, while the heavy dependence on agriculture and small holdings constrains upward mobility. Addressing these

disparities will require targeted interventions in education, skill development, land productivity, and diversified livelihood support to strengthen the socio-economic resilience of rural households.

The findings indicate that millet cultivation in the surveyed districts are regionally specific and deeply tied to tribal area, where it remains a crucial crop for food and livelihood security. Productivity is promising in several districts, yet traditional practices, low HYV adoption, and uneven agronomic improvements constrain output. On the other hand, widespread perceptions of low profitability, limited land availability, and seed distribution challenges discourage expansion.

For millet promotion under SAA Phase VI, policy efforts must focus on enhancing profitability through market linkages, ensuring reliable seed supply, expanding awareness of improved practices, and addressing land and irrigation constraints. Strengthening support in these areas could unlock the potential of millets, reinforcing both nutritional security and resilient farming systems in Odisha's diverse agro-ecological landscape.

It is seen that southern tribal belts continuing to depend on millets as a dietary mainstay, while central and coastal districts exhibit marginal or negligible reliance. Consumption also fluctuates by season and meal type, suggesting that millet is still culturally rooted but not consistently integrated into year-round diets outside tribal regions. The dominance of traditional recipes like Jau/Torani and Pitha/Thampo reflects millet's persistence in household food culture, whereas limited diversification into newer recipes highlights missed opportunities for wider acceptance.

Going forward, promoting millet consumption in low-intake regions will require mainstreaming millet-based foods through awareness campaigns, culinary innovations, year-round availability, and integration into state nutrition programs. At the same time, strengthening the cultural and nutritional value of millet in high-consuming districts can consolidate their role as hubs of Odisha's millet revival.

Millet processing is nearly universal, the methods remain unevenly modernized, with large sections still dependent on traditional practices due to limited access to machinery and infrastructure. On the marketing side, a duality is visible: in certain districts, millet cultivation is commercially oriented with strong sales linkages, while in others it remains primarily subsistence-driven with negligible market participation. The dominance of middlemen and local informal channels highlights both accessibility and vulnerability, as farmers often face low bargaining power and price realization. The limited role of formal mandis underscores systemic gaps in structured marketing support for millet farmers. Strengthening processing infrastructure, expanding mechanization, and creating reliable, farmer-friendly marketing platforms (through mandis, cooperatives, FPOs, or federations) will be essential for integrating millet farmers into robust value chains. Doing so can enhance income opportunities, reduce dependence on intermediaries, and support the broader goals of millet revival and rural livelihood security in Odisha.

Moreover, a collaborative strategy involving various stakeholders, including the government, is crucial for effectively rolling out programs designed to tackle issues related to production, consumption, and marketing of millet.

Annexure1: Mapping Baseline Survey Data, All District

Sl.	Indicators	Unit	Value
1	% of Sample Households Cultivating Millets	%	36.64
3	Avg. Area under Millets/HHs	Acre	1.03
5	Average Production of Millets (HHs)	Qtls.	2.07
6	% HHs by Package of Practice		
	a) Broadcasting	%	19.2
	b) LS	%	35.3
	c) LT	%	27.4
	d) SMI	%	18.1
7	Yield Rate (Qtls./Acre)	Qtls.	2.01
8	% Of HHs Consuming Millets	%	
	a) Breakfast	%	86.86
	b) Lunch	%	76.79
	c) Evening Snacks	%	59.79
	d) Dinner	%	56.48
9	Popular Millets Recipes		
	a) Tampo/Pitha	%	61.3
	b) Jau/Torani	%	92.5
	c) Khiri	%	47.9
10	Percentage of HH using Processing Ragl		
	a) Manually	%	71.43
	b) Machinery		26.98
11	% Of Millets Cultivating HHs Selling Millets	%	
	a) Middleman/ Local Businessman	%	50.8
	b) Daily Market / Haat	%	26.4
	c) Mandi		6.2

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Ms. Mimansa Sahoo

Mr. Ankit Moharana

Ms. Subhashree Paital

Ms. Sumitra Rani Pradhan

Ms. M. Sandhyarani Dora

Ms. Subhashree Lenka

Md. Sahidul Islam

Ms. Kajal Pradhan

Mr.Linus Lakra

Mr. Prasanta Kumar Sahu

Ms. Swayamprajna Pattanaik

Ms. Pusapenjali Lenka

Mr. Hemanta Mahananda

Mr. Sukant Kumar Pradhan

Ms. Madhusmita Choudhury

Ms. Gayatri Nayak

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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) Block:

(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.)
	Agriculture	Land Preparation	Transplantation/ Sowing	Weeding	Fertilizers/ Pesticides	Harvesting	Others	
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 loan?
details:

1-Yes 2-No If yes, please provide

2. Household Particulars:

Sl. No	Name of the HH Members	Relationship with HH (Use Code)	Age	Sex	Marital Status (Use Code)	Educational Qualification (Use Code)	Main		Subsidiary		Consumes 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 3, 3- Class 8-10, 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/Retirees, 7- Student, 8- Housewife, 9- Unemployed, 10- Others (pl specify)

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

[illegible]

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 Tack Mark)

Sl. No.	Name of The Millets	Pritha/ Tambo	Chhanar	Jau/ Torani	Khari	Idli/ Upama	Sweets Items	Others (Specify)	Remarks
a	Mandia								
b	Suan/ Koda/ 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. Chhanar 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 millet?

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

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	Mandi									
b	Swan/ Kaski /Gurji									
c	Kada									
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 (p. 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)

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